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BY

JOHN B. HAMILTON, M. D., LL. D.

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ADDRESS.

MATERIA MEDICA AND PHARMACY.

ADDRESS OF THE CHAIRMAN.

Read in the Section on Materia Medica and Pharmacy, at the Forty-fourth Annual Meeting of the American Medical Association.

BY FRANK WOODBURY, A.M., M.D.

PROFESSOR OF CLINICAL MEDICINE IN THE MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA.

The members of the Section on Materia Medica and Pharmacy are to be congratulated upon having with them to-day, as upon our two preceding annual meetings, delegates from the American Pharmaceutical Association, who at great personal inconvenience have come from widely different parts of the country, and who, by special invitation of the American Medical Association, are present in the double capacity of guests and active members of this Section. Upon many questions requiring technical knowledge and skill we shall hope to obtain their views, and may have reason to be grateful for the presence with us of those who can speak with the voice of acknowledged authority on all topics pertaining to their special department of medical science. If it should appear to some that on the present occasion we have unduly depended upon their valuable aid, it is hoped that they will construe it as a high mark of personal appreciation and as a compliment to their representative position in this special field of work. I think that I may just here be permitted to briefly refer to the many recent evidences of growth and development of pharmacy, and the wider diffusion of a professional spirit among pharmacists, especially in this country. A very appropriate illustration of the increased appreciation by the medical profession of the work of the pharmaceutical specialist, is furnished by the present existence of this Section of the American Medical Association.

Pharmacy apparently is now fully prepared to take its proper place as a specialty in medicine; it only remains for those who practice pharmacy to strive to govern their conduct upon professional lines, and for them to accept the regulations imposed upon all medical practitioners who wish to restrict their practice to recognized specialties. It would be well, in my opinion at least, if all pharmacists should aspire to be graduates in medicine as well as in pharmacy. Here it seems to me is the true solution of the twin problems, how to abolish counter-prescribing and to prevent the dispensing of their own drugs by physicians. Progress in the arts and sciences demands a division of labor, and specialism is the natural result; the important condition of further advancement is that each one shall loyally respect the chosen field of labor of the other, and faithfully adhere to his own. This, indeed, would be a consummation devoutly to be wished, and affords a practical solution of some existing difficulties, that are rather encouraged by the current fiction that medicine and pharmacy are distinct professions, a fiction which stimulates a spirit of rivalry which is scarcely, if at all, appeased by prefixing the mollifying adjective of "sister" professions.

With circumstances as they are at present, it is to be expected that some friction would occasionally be experienced between physicians and pharmacists, each accusing the other of encroachment, rivalry and unfair competition. It seems as if many disputes and complaints might be obviated, even now, if physicians and pharmacists generally would become better acquainted with each other and endeavor to establish more friendly relations. In fact, I consider it a duty that every physician owes to his patient for him to assure himself of the qualifications of the pharmacist who is to dispense his prescriptions, and physicians should not hesitate to direct patients to pharmacists known to be competent. The greatest care in diagnosis and the highest therapeutic skill may come to naught, owing to carelessness or criminality of some unprincipled druggist—for I hold it to be a breach of trust amounting to crime, for a dispenser to use inferior drugs or to substitute cheap articles for better and more costly ones in filling a prescription. To the honor of American pharmacy, I would say here that substitution is rarely practiced, and as the rule to which there are only a few exceptions, pharmacists are faithful and conscientious in their work, and fully deserving of the confidence reposed in them by the medical profession and the general public.

This leads me to the thought which I wished especially to express in this brief address, the subject being "Scientifically Prepared Remedies Essential to Rational Therapeutics." The daily use of instruments of precision in clinical medicine, makes the demand an imperative one, at the present time, for the greatest attainable precision in our therapeutic methods. Hap-hazard prescribing and routine practice must yield before scientific pharmacy and rational therapeutics. These depend, however, not only upon accuracy of dosage of skilfully selected remedies, but also upon uniformity in composition and in physiologic action of such remedial agents; for it is impossible to prescribe intelligently unless active remedies shall in the same measured quantities, always produce proportionate results or, in other words, possess the power of causing equivalent physiologic effects. The standardization of pharmaceutical preparations, therefore, becomes as important to the practicing physician as is the reliability and uniformity in composition of his test solutions to the chemist.

In the choice and application of remedies, the modern physician is independent of the dictum of school or dogma. The ancient assumed laws of cure have been outgrown and rendered obsolete by modern methods of investigating the true nature of disease

and of tracing effects back to their natural causes. The microscope, the culture tube, and the chemic test, have in our day removed the old scholastic barriers, and they can never again be of sufficient importance to divide physicians into sects or schools of practice. It is true that names often survive the things and circumstances which called them into being, and among the laity there may still be found those who will ask the question: "To what school of practice do you belong?" It is possibly true that certain physicians may find it to their interest to foster such a belief; but it is well known that they use the same text-books and medical journals, and often resort to the same remedies as non-sectarian physicians, while their patients are led to believe that their methods are entirely and radically distinct from those of the "dominant school," which they lose no opportunity of denouncing. Theoretically, I have great respect for an honest sectarian physician; but must condemn him, nevertheless, for wilful ignorance; for honest sectarianism could scarcely survive the revelations of modern biology, which teaches that diseased processes are merely normal functions under abnormal conditions, which it is our task to remove. Such conditions are physical and natural and not spiritual or supernatural. "There is no sacred disease, and all diseases are equally sacred."

There can only be one best way of treating a patient suffering with a given disease, and it is the aim of scientific medicine to discover and to apply that method in the case, without reference to any hypothetical law of cure. Independence of the voice of authority other than that supported by clinical experience, and freedom to apply any discovered scientific fact to the alleviation of human suffering, are the boasts of modern medicine, and their consistent application in practice is the criterion of the truly scientific physician. Having asserted the right to the most perfect freedom in the selection of remedies in the light of modern science, we should next direct attention to the necessity of their having the quality of absolute genuineness. This requires uniformity both in chemical composition and in methods of preparation, so that the same dose under exactly similar conditions may be implicitly relied upon to produce precisely the same measure of effect. This is best illustrated in modern pharmacy by the hypodermic tablet. It has recently been successfully attempted to extend this principle to many of the commonly used remedies, by putting them up in tablet form, each tablet representing an average dose of the medicament. This is not identical with Dr. Burggrave's so-called "Dosimetric Method," which was principally based upon the use of alkaloids and other extremely toxic agents to be administered with metric dosage in the form of minute granules—but it may be regarded as an outgrowth of that method which never came into vogue probably because it appears to be restricted to the use of the products of a certain Parisian pharmacist, who prepared them "under the personal direction of Dr. Burggrave." While I acknowledge the pharmaceutical skill displayed in the manufacture of the modern compressed tablets, and their great convenience to the physician, especially when he is remote from any competent pharmacist, or on occasions of emergency, yet I must point out the dangers to both medicine and pharmacy from any attempt to the exclusive reliance upon these tablets in practice. The very fact of uniformity of dosage is opposed to the highest skill in prescribing, and those who depend upon them will inevitably fall into routine practice and lose interest in therapeutics There is danger that such a practitioner may follow the stereotyped formulæ until he loses his power of combining remedies *secundem artem*, so as to nicely suit the needs of the individual case. If it should also lead him to form the habit of administering powerful alkaloids, whose actions upon the human system are imperfectly comprehended, in place of the more simple and relatively harmless remedies of a former generation and of established value, I fear that such a change of practice would not be devoid of risk to the patient. The use of such remedies by the physician, brings up again the serious objection that in case of untoward result, where suit is threatened for malpractice, the physician is without any documentary evidences as to the character or identity of the remedies administered to the patient, such as he would have if the written prescription were preserved on the file of some neighboring pharmacist. Under such circumstances the original prescription would prove a safeguard which the persecuted physician would be glad to possess.

The mutual advantages accruing to physicians and pharmacists from the separation of pharmacy are so obvious that the arguments of Dr. George B. Wood in favor of pharmacy as a distinct vocation have never been refuted, and are even more valid to-day than when first uttered half a century and more ago. The physicians of this country, especially those practicing in our large cities, have for such a length of time accustomed themselves to rely upon the skilled assistance of the accomplished pharmacist, that they can hardly realize in their imagination, the methods of practice a century ago, when doctors spread their own plasters and made their own pills; or collected their simples in the fields and made their own tinctures and fluid extracts. I am sure that scientific medicine has been the gainer by the change, and that no one wishes to return to the good old times of medical practice. It remains for the practicing pharmacist to demonstrate by the reliability of his preparations and their scientific and esthetic qualities, that he is the loyal ally of the physician.

Our great manufacturing houses of established reputation have gained the confidence of the profession by the standard quality and pharmaceutical elegance of their preparations, so that it is necessary occasionally for the prescriber to specify certain manufacturers' products; and although it is acknowledged that this practice may be abused, yet it must be admitted to be within the right of the physician to require a particular brand of preparation, and this liberty of choice will be respected by all reputable pharmacists. On the other hand, no prescriber who values his reputation as a skilful therapeutist, will ever be guilty of ordering the use of proprietary articles of secret composition commonly known as "patent medicines;" and their use by the public should be discouraged on moral and scientific grounds, both by physician and pharmacist.

In connection with what has just been expressed, I think it well at this time to call the attention of both physicians and pharmacists throughout the country to the new revision of the "United States Pharmacopeia," which will soon be issued, and to urge them to at once employ it in prescribing and dispensing,

so as to avoid uncertainty and confusion both in clinical therapeutics and in current medical literature. To physicians who desire an extra pharmacopeia containing valuable formulæ not contained in the text, I would recommend the "Formulary" of the American Pharmaceutical Association; which contains efficient substitutes for many of the most prominent proprietary remedies, and thus offers a means of avoiding those of secret composition, the use of which the Code of Ethics condemns as unscientific and unworthy of educated physicians. It seems to me, if persistent effort were made by both physicians and pharmacists to instruct the community as to the dangers to the public health resulting from the constant use of patent medicines, that the business might be made less profitable than it now is, and the consumption of such articles very much curtailed.

In these brief introductory remarks, I have purposely refrained from discussing exhaustively any single topic, and have been content to indicate a few directions in which advancement may be made in the departments of medicine represented in this Section. Improvements might also be introduced in the work of this Section so as to make it more popular and attractive, and I believe that some recommendations will be made to this end at the present session, by the Business Committee.

FIBROID TUMORS OF THE UTERUS.

Address of the President, read before the Mississippi Valley Medical Society, Oct. 4–6, 1893.

BY R. STANSBURY SUTTON, M.D.

PITTSBURG, PA.

Definition.—The familiar terms, fibroid tumor, fibro-cystic tumor, and fibroid polypi of the uterus, every medical man recognizes as belonging to the same class of neoplasms. We all understand by the fibro-cystic tumor that a solid fibroid tumor has undergone a cystic degeneration. Notwithstanding our familiarity with these terms, they are objectionable, because they do not convey to the mind a comprehensive idea of the pathology of the neoplastic growths to which they are applied. The term fibroid (fibrosus and eidos), and the term fibrous mean fiber-like, and are only applicable to a tumor composed entirely of fibrous tissue.

The fibrous or fibroid tumor found in various localities is always situated in connective tissue; it contains only occasionally a few yellow elastic fibers, is often quite vascular, and must be dissected out.

But the so-called uterine fibroid contains a variable quantity of muscular tissue as well as of fibrous tissue, both of which are derived from the parenchyma of the uterus in which the tumor grows. By reason of the presence of muscular tissue, Virchow proposed that these tumors be called myomata. This term designates only their muscular element, and is as objectionable as the term, fibroid. The term, myofibromata or fibro-myomata, fully designates the solid tumor, and the prefix cystic, that variety in which cystic degeneration has occurred.

Etiology.—The etiology of these tumors is still a mystery. They are more frequent in the black than in the white race. In both races they are more frequent in the body than in the neck of the uterus, and more frequently situated in the posterior than in the anterior wall. Prior to puberty they present no positive symptoms of their existence.

From a careful analysis of cases under my care, I suspect the neoplasm does sometimes exist prior to puberty. After the menopause is established these tumors occasionally disappear, unless they have undergone cystic degeneration.

If, prior to the establishment of the menopause, the fibro-myomata has undergone cystic degeneration, it will continue to grow. The removal of the ovaries and Fallopian tubes in such cases has proved insufficient to stop the growth of the cystic or very soft fibro-myoma. Months after removal of both ovaries and tubes I have seen it necessary to make a supra-vaginal hysterectomy. Concerning the causes which produce these tumors nothing is known. By reason of their existence a woman may be sterile, but it is not yet proved that sterility favors their origin or growth.

Pathology.—The tumor always has its origin in the substance of the uterine wall or subperitoneal connective tissue. It begins as a hard nodule, involving in its further development both the muscular and fibrous tissues. Later it becomes invested with a thick layer of fibrous tissue, which, with the superimposed uterine tissue, constitutes its envelope or capsule. Within this capsule the blood vessels ramify and form a network, sending prolongations to feed the inclosed growth, which now lies like a foreign body in or attached to the wall of the uterus. Rarely, large blood vessels penetrate the substance of the tumor. Such tumors have, however, been observed by Virchow, Leopold and Schröder, in which large blood-sinuses existed, the walls of the sinuses being composed of the muscular fiber of the uterus involved in the growth of the tumor.

Klebs has proved the existence of lymphatics, and Lorey of nerves in this class of growths. The presence of lymphatics often determines the variety of future cystic degeneration. As the tumor enlarges it separates the tissues composing the uterine wall, or compresses it as it pushes the peritoneum outward. The consequent irritation invites a greater blood supply, and hyperplasia of the walls begins. As the tumor excites more and more irritation, and the muscular tissues of the uterus grow stronger, the neoplasm, if developing within the walls, may begin to migrate either toward the peritoneal covering of the uterus or toward the endometrium. Should, however, its location favor, it may separate wider and wider the uterine tissues, keeping its relative position from either surface. Thus the tumor is finally fixed in the uterine walls, and is designated as interstitial or intramural; or if it is developed or forced toward the peritoneum, carrying the latter with it as an investment, it is then designated as submucous. The tumor may consist of a single nodule or center of formation, or it may consist of a number of nodules or centers of formation interlaced closely and invested by a common capsule. This fact suggested to Mr. Lawson Tait a new nomenclature for these growths—namely, uninodular and multinodular fibro-myomata. As the tumor grows, either the fibrous tissue or the muscular tissue will preponderate.

When the fibrous tissue is bountiful, the tumor will be hard, even as hard as cartilage; when the muscular tissue is most bountiful the tumor will be softer, even sufficiently so as to merit the name, fleshy tumor or myoma. A tumor largely composed of fibrous tissue will usually be of moderate size and of

very slow growth, but the reverse is apt to occur in those tumors in which the muscular tissue preponderates; and these tumors are especially liable to cystic degeneration. On the other hand, the latter class, if cystic degeneration does not occur, are liable to rapid disappearance after the establishment of the menopause. Not infrequently several separate and distinct fibro-myomata are found in the same uterus. Dr. Thomas exhibited to the New York Pathological Society a uterus containing thirty-five tumors of various sizes, and Schröder of Berlin, cites a case by Schultz, in which at least fifty tumors existed in the uterus. A remarkable feature of Schultz's case was that the woman was 83 years of age. The uterus was obtained postmortem. In cases of multiple myomata, the growths may be so distributed in the uterus as to present the subperitoneal, the intramural, submucous, and polypoid varieties.

The changes occurring in the uterus itself are not constant. The muscular tissues hypertrophy to a greater or less extent in all cases, and while hypertrophy is going on in one direction, atrophy of the muscular tissue on the side toward which the tumor is advancing may be in progress. After the tumor has become subperitoneal, the uterus may atrophy to a very marked degree—a condition not infrequent in old subjects.

The cavity of the uterus is usually increased in depth, while in the submucous and intramural variety it may also be obstructed. The lining membrane of the uterus, by reason of the constant hyperemia, is more vascular, bleeds more readily upon the introduction of the sound, than in cases of normal condition, while in cases of submucous fibro-myomata or polypoid fibro-myomata, menstruation is almost always profuse, and between the regular periods blood is frequently lost or even constantly. In addition to this, a serous discharge, intermingled with the vaginal and uterine secretion and having an unpleasant odor, is not always wanting. The uterus in no instance occupies its normal position, but is either pulled or pushed into an abnormal one, dependent on the size and position of the tumor. The cut section of fibro-myoma will vary in appearance according to the preponderance of its constituents. If the fibrous tissue be very abundant, the section will cut like cartilage, and have a gray color and satin-like glossy appearance. If the muscular tissue exists to a marked degree, the consistency of the section will be softer and the color will vary from pink to red.

The lymphatic spaces of Klebs are sometimes seen between the bundles of muscular tissue. When but little muscular tissue is present the section will be smooth, but if the reverse is the case the surface is uneven as the contracting fibrous bands force the softer muscular tissue above the surface. At the margin of the section and surrounding it is found a layer of condensed, fibrous, muscular tissue forming the capsule. This is sometimes closely, at other times loosely, attached to the tumor. Frequently it is easy with the thumbnail to detach it entirely, a process we shall yet learn to be that of enucleation. On microscopic examination of the harder variety are seen wavy bundles of fibrous tissue with a small amount of unstriped muscular tissue. The softer variety presents, in addition to the fibrous tissue, a greater amount of unstriped muscular fibers in twisted bundles, the muscular fiber being identical with the muscular fiber of the uterus. If the specimen be stained in carmine solution and washed in a solution of acetic acid, the rod-shaped nuclei of the spindle-shaped cells will be brought into view.

The important practical point in this is to establish a positive differential diagnosis between the fibro-myoma and sarcoma. The latter, when removed from the uterus, as elsewhere, is almost sure to return, and constitutes what has been erroneously called the recurrent fibroid tumor.

The nuclei of the spindle-shaped sarcoma cells are round or oval; of the fibro-myomata, they are rod-shaped. The limit of growth for the myomata is difficult to determine. They have, after removal, been found to weigh fifty or sixty pounds. Until expelled from the walls of the uterus they maintain a globular form. After extrusion into the cavity of the peritoneum they are free from the pressure of the uterine muscular tissue, and generally lose the globular form. After extrusion into the cavity of the uterus they usually become pear-shaped—a fact probably due to the lateral pressure exerted upon them in the expulsive efforts of the uterus. Their density varies with the amount of fibrous tissue in their composition, and is a determining element in the shape of their future growth, when they become subperitoneal. The globular form is not, however, infrequently retained in very solid tumors after they have become polypoid tumors, either upon the exterior or interior surface of the uterine walls. The irregularity of surface occasionally seen is due often to the multinodular composition of the neoplasm, some nodules growing faster than others by reason of obtaining a better blood supply. Another element in determining the shape of the subperitoneal tumor is the pressure against the walls of the pelvis; regularity of contour is more apt to exist when the tumor has become too large to enter the small pelvis. Occasionally, in addition to the mass in the pelvis, a prolongation of the tumor upward, cone-like, is felt through the abdominal wall. I have seen the tumor pear-shaped, the big end up, and the other end filling the pelvis completely.

Frequently the tumor, when subperitoneal, may be felt extending above Poupart's ligament, dragging the uterus with it, side by side, it being difficult or even impossible to decide, when the os is almost or entirely out of reach, which is tumor and which is uterus. The sound may determine. If the cervix can be seized with a volsellum forceps and the uterus be thus moved, while the free hand over the abdomen takes cognizance of the movements, it may also be determined.

The changes which occur in the fibro-myomata are as follows—varieties of softening:

Edema.—At the time of the menstrual period, they occasionally become swollen or edematous, this condition disappearing again a few days later. But this condition may continue to such a degree that a spurious fluctuation may exist. Such tumors have been tapped for ovarian cysts, and a few drops of yellow, slimy mucous escaping told of the error of diagnosis, or the tapping has been dry. Such tumors may give apparently real and distinct fluctuation after being extirpated and laid on the table. The tumors when cut through may be completely infiltrated; in the meshes of fibrous tissue hundreds of very small cysts exist, and the muscular tissues of the growth may have wellnigh disappeared. Such

tumors have been found by many operators. The edema is sometimes intermittent, returning after entire subsidence.

Fatty Degeneration.—After the menopause, and occasionally after pregnancy, complicated with intramural fibro-myoma, fatty degeneration occurs in the muscular element of the growth; this is absorbed and the fibrous tissue alone left. In very old subjects the remains of prior fibro-myomata are simply nodules of the concentrated fibrous tissue.

Myxomatous Degeneration.—Occasionally, in the tissues comprising the growth, there exists mucoid tissue which secretes mucus, and forms often cavities of considerable size; this condition of the tumor is known as myxomatous degeneration. (Virchow.)

Suppuration.—Should the blood supply be entirely cut off from the growth, as in twisting of the pedicle in the subperitoneal variety or of the polypoid submucous variety, or if the capsule be widely detached in an effort at enucleation per vaginum, the tumor may die and soften. This change has been designated erroneously as suppuration. True inflammatory softening and suppuration of a fibro-myoma is rarely seen.

Gangrene.—The submucous variety is especially liable to necrosis and spontaneous expulsion. An inflammation of the capsule resulting in interference with the nutrition of the growth, or inducing an ulceration on the surface of the capsule, is the usual cause. The resistance of the capsule being impaired by the opening, the tumor is expelled by uterine contractions entire or piecemeal. This fact led to the treatment of this variety by means intended to open the capsule through the cavity of the uterus. Atlee and Brown gouged holes in the capsule or divided it with the knife. Greenhalgh attacked the capsule with the cautery-iron. Byford induced rupture of the capsule with ergot. Cures have been obtained by all of these methods, none of which were free from danger.

Cases of inflammation of the capsule, adhesion to and perforation of the abdominal wall, followed by the escape of the gangrenous neoplasm, have been reported by Soir, Dumesnil, Gutierrez, Hofmokl and Schmidt.

Varieties of Induration.—After fatty degeneration of the muscular elements, their absorption follows, but the fibrous tissue is left behind and contracts to form a very hard but small tumor. When the tumor contains very little muscular tissue it is nearly as hard as cartilage.

Calcification.—Chalky or phosphatic degeneration of these tumors has long been known. Hippocrates relates such a case, a Thessalian woman aged 60 years; and Salius the case of a nun who had such a tumor. Schröder refers to such cases by Louis, Velpeau, Jaffe and Saxinger.

Years ago I removed a calcified subperitoneal fibro-myoma, which was larger than a goose egg and as hard as a stone. It was reached through the posterior vaginal wall. The cretaceous matter appears first, says Schröder, in streaks through the interior of the tumor. It may finally become so dense as to produce a stone of sufficient solidity to require to be cut through with a saw. The small tumors, especially the subperitoneal and intramural, are most liable to this change. When the blood vessels are cut off, the nutrition ceases. The tumor is now a foreign body, and is apt to act as such. It may cause an inflammation of the adjoining tissues, and when these are softened it may escape into the peritoneal cavity, causing fatal peritonitis, or, escaping into the uterine cavity, be expelled, leaving the patient to recover. True suppuration of a fibro-myoma must be rare, yet authors authenticate it after traumatic injury to the growths, and also in association with cretaceous degeneration beyond the changes referred to; these tumors, by various processes of degeneration, become cystic, and occasionally are apparently attacked with that most malignant of diseases, sarcoma.

Cystic Degeneration.—A solid fibro-myoma may become cystic through fatty degeneration, mucous degeneration, suppuration, serous infiltration, the formation of lymph-cavities filling with a clear fluid coagulating on exposure to the air, or from breaking down of clots in large blood cavities already existing in the tumor. In the multinodular tumors one or more of the nodules may break down, while others maintain their original solid condition, and a mixed tumor results. As already observed, these growths take largely to themselves the connective fibrous tissue of the uterus. Connective tissue is that in which alone we find sarcoma developing in the body. The fibro-myoma and sarcoma are first cousins as to origin, and when the sarcoma begins, with its spindle cell and oval or round nucleus, to invade the myoma, it finds the natural tissue of its selection to work upon. Myomata thus invaded grow softer, and may even undergo cystic degeneration, and give rise to a tumor properly designated sarcomatous cystic fibro-myoma.

The termination of the cystic fibro-myoma is widely different from that of the simple fibro-myoma; while the latter occasionally destroys the woman, the former always tends to terminate fatally. Fibro-cystic tumors grow more slowly than ovarian cystomata, but by mechanical interference with respiration, circulation and nutrition, and by producing nervous exhaustion and organic diseases of the heart, and also occasionally by causing a great loss of blood from the uterus, they tend with equal certainty to the destruction, sooner or later, of the life of the patient. The location of simple fibro-myomata has everything to do with their importance; it is therefore excusable to make the arbitrary division of subperitoneal, interstitial, or intramural, and submucous; also to consider each variety separately.

Description. Subperitoneal Fibro-myomata.—Virchow termed this variety the peritoneal polyp, and there is no difference of structure between it and the fibro-myomatous polyp found in the uterine cavity. When the tumor is forced out of the uterine wall into the cavity of the peritoneum, it carries with it the peritoneum investing the uterus, except in those cases where it projects from the side of the uterus and is pressed out between the layers of the broad ligament, which subsequently forms a serous covering for it. The tumor may remain closely adherent to the wall of the uterus, or gradually leaving it, develop a pedicle which may, after a time, remain thick or become so attenuated as to consist of nothing but two layers of peritoneum, the intervening cellular tissue and blood vessels, some lymphatics, and nerves. The tumor continues to grow in the cavity of the pelvis, toward which it gravitates, retroverting the uterus early if attached to the pos-

terior wall, until finally it reaches such a size that it can not enter the superior strait of the pelvis. When the tumor projects from the top or anterior wall of the uterus, the latter is retroverted as soon as the growth has attained any considerable size. The growing of these tumors thus in the pelvis gives rise to distressing vesical and rectal irritation, and often to retention of urine, to the narrowing of the caliber of the rectum, to constipation, and to hemorrhoids. Besides this, there is often pain in the course of the sciatic or crural nerves of either side. The irritation and obstruction to the circulation, both from the mechanical presence of the growth and the malposition of the uterus, produces profuse bleeding at and between the menstrual epochs. That such is the pathology is proved by putting the patient in the knee-chest position, pushing the incarcerated tumor and uterus up, and draining the vaginal tissues with pledgets of cotton saturated with glycerid and by the free use of large quantities of hot water thrown against the vault of the vagina after the replacement is effected. Thus long-continued hemorrhages are abated.

Once the tumor has become subperitoneal it may contract adhesions to the viscera against which it rests, and thus it often happens in abdominal section that we find these tumors nourished by large blood vessels entering them through adhesions which, when the tumor is large and projecting into the cavity of the abdomen, frequently contain veins of enormous size. Twisting of the pedicle, when long, in these tumors may occur as in the ovarian tumor. If a new blood supply has been established, the tumor will not die, even though it may be eventually separated entirely from the uterus. When this variety of tumor drags the uterus upward, or when the base of the pedicle is broad and the tumor falls backward, bending the uterus, the cavity is increased in depth; as the pedicle becomes elongated the uterine cavity shortens whether the tumor decreases in size or not. The uterus may be flattened out completely and adherent to the side of the tumor. After it has contracted adhesions to the intestine, any rotary motion of the tumor is liable to produce intestinal obstruction and to demand immediate operative interference to save the life of the patient. Frequently I have removed fibroid tumors from which it was necessary to detach several loops of the small intestine. This variety of tumor is frequently accompanied by others of the same variety, either also expelled from, or still existing in the walls of the uterus. The greatest limit of growth as a rule for this variety is the size of an adult head, but they have been met with having a weight of fifty to sixty pounds.

Submucous Fibro-myomata.—As already stated, at least two varieties originate in the walls of the uterus as round tumors; when forced toward the lining membrane of the uterus they become submucous. As they project into the uterine cavity they carry the lining membrane before them. The pedicle of this, the polypoid variety of the tumor, may be thick, containing muscular tissue, the lining membrane of the uterus, and very small blood vessels. As long as the tumor lies beneath the unupheaved uterine lining it is round, but after it enters the cavity of the uterus and is macerated in constant discharge, and pressed upon by the contracting uterine walls, it becomes pear shaped, or if nipped near the center by the fiber of Bandle's ring it may resemble a dumb-bell or hour-glass. This variety of myomata does not undergo cretaceous degeneration and is usually expelled too soon to undergo cystic degeneration, which occurs rarely in this variety. Nevertheless, it is probable that lives are as often lost from hemorrhages occasioned by this variety as by either of the other varieties of the myomata. This variety drags down the uterus when of moderate size, and after expulsion from the uterus, may by its weight as it descends drag the fundus uteri down and invert the uterus. Women often hide these growths, even after they appear at the vulva.

The size of the growth is determined mainly by the length of time it remains in the uterus or vagina. When in the vagina the tumor may be mistaken for an inverted uterus.

The Intramural or Interstitial Fibro-myoma.—This variety simply remains and grows within the uterine walls. Surrounded on all sides by uterine tissue, it receives a greater blood supply than either of the other varieties. It consequently grows with greater rapidity, and often to an enormous size, enlarging a patient like a full term pregnancy, and weighing ten pounds and upward. The great weight stretches the anterior wall of the belly, and the tumor overhangs, while it rests upon the pelvic brim. The abdominal walls grow very thin from pressure, the recti muscles atrophy and separate, and the tumor lies immediately under the superficial tissues of the belly wall. These tumors, bulging out the uterus laterally, spread apart the layers of the broad ligament, and the hypertrophied tubes are spread out high up on the tumor; the uterus and the tumor develop in such a way as to entirely alter the relative position of the uterine appendages. In these cases the cavity of the uterus is deepened or shortened and often rendered crooked, while at the same time it is very difficult to find the os uteri in the vagina. These externally large tumors are usually single, and the walls of the uterus may be found either greatly hypertrophied, or much atrophied. These tumors occasionally undergo cystic degeneration, and grow to an enormous size.

Fibro-myoma of the Cervix Uteri.—These tumors follow the same law as to location and development that they do in the body of the uterus. They may be subperitoneal when developed in the supra-vaginal portion; when developed too low down, they very rarely appear upon the outer surface of the cervix, namely, the outer surface of the vaginal portion. The growth is much more rare in the cervix than in the body. In the twenty-eight years I have been in practice I have met with but five or six cases where the growth was in the cervix. In one the growth was submucous, and in another, interstitial and as large as a lemon; in another, the tumor was as large as a fetal head. Where they become submucous, they are gradually forced into the vagina, retaining their uterine connection through a pedicle of varying density. When interstitial and large they pack the pelvis to a great extent. The lip of the cervix invaded is spread out over the growth, while the opposite lip is thinned and stretched as a band along the circumference of its enlarged neighbor. The uterus is dragged down until the growth has become large, when its fundus is deviated, at first in a direction corresponding to the lip of the cervix invaded. When the tumor is expelled from the cervix it will be oval

or round-ended, and when pouting between the labia may readily be mistaken for the fundus of the inverted uterus. On the other hand, the uterus has been mistaken for this variety of fibro-myoma, and been cut off with the ecraseur. Large growths in the cervix are more liable to produce vesical and rectal symptoms than those growing either from the posterior wall or fundus of the uterus.

Symptoms.—The symptoms which accompany the presence of these tumors in their various localities and stages of growth are widely different, as we shall learn in considering the diagnosis. However, a class of indications are patent as found in a vast majority of the cases, and may be tabulated as follows:

A. Vague pain in the pelvic region;
B. Pain referred to the front or back of the leg;
C. Irritability of the bladder or rectum;
D. Uterine tenesmus;
E. Menorrhagia or metorrhagia;
F. Dysmenorrhea;
G. Profuse leucorrhea;
H. Serous discharge from the uterus;

The disorders of menstruation, the tenesmus, the leucorrhea and the serous discharge are typical, within the menstruating age, of the existence of the submucous fibro-myoma, and in a less marked degree in the insterstitial variety. They may be entirely absent in the subperitoneal variety. It may be inferred as a rule in diagnosis that tumors producing these symptoms to a marked degree are situated immediately beneath or close to the lining membrane of the uterus. Exceptions to the rule do occur, and hemorrhages may accompany the existence of a subperitoneal fibro-myoma incarcerated in the pelvis. Progressive anemia from loss of blood, feeling of weight, depression of spirits, the development of unusual nervous conditions, irritability, loss of cheerfulness and gloomy apprehensions are frequent. When the tumor rises out of the pelvis it may be easily felt through the abdominal wall. If cystic degeneration has occurred, spurious or true fluctuation may be present; but absence of the symptoms will not be proof that cystic degeneration has not occurred,

Diagnosis.—Scarcely is it possible to name anything more difficult than the diagnosis of the very small fibro-myomata, when many of the leading symptoms are absent. This is sure to be the case with subperitoneal growths, and the surgeon is left entirely to exploratory skill. If the tumor has retroverted or anteverted the uterus, and become at all prominent upon either surface, bimanual palpation with a finger in the vagina or rectum will usually determine its existence. If the patient be fat, it will be necessary with the volsellum forceps to pull down the uterus, so that the finger in the rectum may be swept over the posterior surface of the uterus, or the sound may be well curved and made to drag the uterus well forward against the finger in the vagina. The tumor, if at all defined, will present an outline within which the tissue is harder than that of the normal uterus; if well defined, it will be easily recognized. Even at so early a date the uterine cavity is often found deeper than normal, and the uterus congested and abnormally heavy. When the tumor springs from the supra-vaginal portion of the cervix, it is readily felt through the vagina. But if it be from the posterior wall of the fundus, and of considerable size and firmly adherent in the cul-de-sac, a sound in the uterus may or may not enable the examiner to determine that the growth is or is not attached to the uterus, or, if it is so attached, that it is a myoma. The direction taken by the sound and the consistency of the growth are the questions to be considered. The round form and solid feel of the myoma will aid in differentiating it from a hematocele or ovarian cyst, but it is not possible to differentiate it from a solid tumor of the ovary which is adherent to the uterus. Twice I have seen the abdomen opened, once by Billroth and once by Mr. Lawson Tait, for supposed myoma of the uterus, to find the tumor a solid one of the ovary. The differentiation from a cyst is less difficult; its elasticity, its rare close connection with the uterus, and its softer feel, are suggestive points. But if doubt exist, the aspirator-needle may be used.

When the tumor is interstitial and very small it will be very difficult, if not impossible, to determine its presence. The existence of some of the symptoms, alphabetically tabulated, may give good presumptive evidence; in addition, the uterus may be deeper than normal, or it may be possible for one of unusual skill to determine, by the aid of the sound, that one wall of the uterus is thicker than the opposite wall; or that a portion of the wall is more solid or thicker. If the tumor is small and in the anterior wall of the uterus, the canal will be so displaced backward that the direction taken by the sound will suggest that the body felt forward is not alone the fundus of the anteflexed uterus.

When the tumor has attained a considerable size and other symptoms are present, and the possibility of enlargement from pregnancy, chronic metritis and subinvolution are differentiated, the case is not so difficult to determine. But given a small interstitial fibro-myoma associated with chronic metritis or pregnancy, and the diagnosis may be impossible. Time alone will solve it. Should, however, in early pregnancy the fetus be dead and the woman present an enlarged uterus, with irregular periods of bleeding, a constant leucorrhea, or flow of disagreeable odor, the case may be mistaken for a fibro-myoma, interstitial or submucous, and nothing except dilatation of the cervix and exploration with the finger will make a diagnosis possible. In chronic metritis the uterus is more or less tender; its walls are flat and soft, the os open, and frequently nausea exists. In cases of fibro-myoma, the uterus is rarely sensitive, and especially when the growth is interstitial or subperitoneal, the body as well as the cervix is hard, and the os normal. If chronic cellulitis with extensive deposits be encountered, the uterus is fixed, while the reverse is usually the fact when the symptoms depend on a neoplasm.

In early pregnancy the cervix and lower segment of the uterus are softer and the os occasionally more patent than normal; while in cases of fibro-myoma the cervix and os usually remain unchanged and the tumor is hard. In pregnancy the color of the vagina is bluish. Further, in bimanual palpation the pregnant uterus will be found soft or elastic, symmetrical, rhythmical, and nearly in the central line; in cases of even small fibro-myoma it will be hard, inelastic and usually misplaced. In small submucous neoplasms the bleeding is usually so prominent a symptom that the introduction of a sound or dilatation of the cervix and introduction of a finger will suggest themselves as the speediest way to decide the diagnosis. In a submucous growth, with the cervix

dilated sufficiently to admit the finger, the diagnosis is not difficult. When the tumor grows from the intravaginal portion of the cervix, if interstitial its early symptom is simply an enlarged lip; but later its solidity, freedom from tenderness, its circumscribed hardness, and the absence of the evidence of malignant disease will warrant an incision into the lip and an enucleation of the growth at the same time that the diagnosis is made. When the small interstitial fibroid is low down, its development toward the os externum enlarges the lip beneath it and protrudes it forward into the vagina. The opposite lip is spread out and the os loses its form, becomes a slit, and may be very difficult to find. When the neoplasm is entirely in the cervix the same difficulty will occur. The liability of mistaking such cases for inversion of the uterus is to be guarded against. A retroflexed or anteflexed uterus has frequently been taken for a fibro-myoma. The groove presenting to the examining finger between the neck and the fundus misleads; but the sound and bimanual examination will determine whether the round body felt is the fundus or a fibro-myoma. If the neoplasm arise from the posterior wall the uterus is retroverted, and the bimanual method of examination will enable us to trace its close connection with the uterus unless the pedicle be unusually long. If, however, the uterus and tumor fill the pelvis, the patient should be placed in the knee-chest position, or, better, in Sims' position, with the side of the table elevated. The uterus and tumor may now be pushed upward and forward out of the pelvis. A sound may then be introduced into the uterus and held with the thumb and forefinger of the right hand; the left hand passing over the patient's hip can grasp both uterus and tumor, and their connection may be determined by the movements of the sound. If the tumor can be grasped separately and moved without affecting the position of the uterus, it can not be uterine; but if its movements, as determined by the sound, do affect the position of the uterus, it is attached to the uterus and probably of uterine origin.

In thin subjects, especially, the sound may not be required; but bimanual examination with one or two fingers behind the cervix will enable the examiner to determine a close connection between the tumor and the uterus, or decide whether or not the tumor and uterus move together. But as it is the early development of fibro-myomata that will always give the case most difficult of diagnosis, a more lengthy examination of this subject will be required. A case or cases presenting, in which no change in the os or cervix has occurred, with no displacement, either retro- or anteversion or prolapsus, with or without much increase of the depth of the uterine cavity, with no marked elevation of either uterine wall to be felt bimanually, but with disordered and painful menstruation, or irregular discharges of mucus or blood, or the watery discharge of serum, will try the skill of the best diagnostician, and frequently compel him to summon time to his assistance. These symptoms, however, should always put us on the alert.

All growths of this nature are at first supposed to be interstitial, but if they are not, or become submucous, the leading clinical features of the case will be disordered menstruation, bloody discharges at irregular periods, and the presence of leucorrhea consisting of mucus more or less watery. If, however, the tumor be developing toward the peritoneal coat of the uterus, these symptoms may be entirely wanting, and pain usually present between the periods, and especially severe at the periods, may be the only symptom present. Meadows has observed that the location of the pain is much determined by the location of the growth: "If the pain is felt in the lower dorsal or upper lumbar region, then it is probable that the tumor is growing on the fundus uteri. If, on the other hand, the tumor is more confined to the body of the uterus, then the pain will be felt in the lumbar region above; and lastly, if the cervix be the seat of the disease, the pain will be felt mostly over the sacral region."

Pain due to ovarian disease, like the neoplasm of the ovary, is to one or the other side of the central line; due to uterine neoplasm, it is usually in the central line. Small ovarian neoplasms are not always accompanied by menstrual disorders and irregular discharges. Where the little tumor is subperitoneal, and pain and displacement alone point out a suspicion of its presence, we must wait until further development occurs. Later, the tumor may be made out, and the differential diagnosis from chronic metritis and pelvic cellulitis may be at once determined by the absence of sensitiveness to the touch of the finger; hematocele may be ruled out by the absence from the history of its sudden invasion with symptoms of shock. The slow growth of the tumor, its irregularity and solidity, are characteristic of fibro-myomata. Should, however, amenorrhea be present, the density of the growing tumor, and possibly its irregularity, the asymmetrical condition of the tumor and the uterus together, the deviation of the uterus from the central line, the absence of changes in the mammary glands or vaginal mucous coat, the presence of a serous leucorrhea of a peculiar odor, will usually lead to a correct diagnosis. Supposing the tumor and the uterus to be still in the pelvis, the uterus may be crowded to one side; or, if pulled down by the descending tumor, it will be retroverted, while the cervix is crowded forward; or, if the tumor proceed from the anterior wall, the uterus will lie retroverted beneath or to one side of the tumor. If the tumor has become so large as to lie above the pelvis in the cavity of the abdomen, the uterus will be dragged up and its cavity lengthened. While the tumor occupies the pelvis the pressure is extended to the bladder and rectum, and both retention of urine and difficult defecation are frequent. The ureters may also be so interfered with by the pressure of the tumor and uterus as to convey a diminished amount of urine to the bladder: with this condition almost complete suppression of urine may occur, but after the tumor is lifted out of the pelvis the flow of urine becomes greater than normal for a day or two. The presence of free fluid in the cavity of the abdomen is not very frequent, but when it does occur by reason of the presence of the tumor, it may come from irritation of the peritoneum, but usually from the covering of the tumor itself, the soft or edematous variety. Adhesions are the result of patchy or general peritonitis, usually the former.

The mechanical irritation of the tumor produces peritonitis, which may involve that portion of peritoneum covering the tubes, and the adhesions which follow may shut off the canal of the tube; or the pressure of the tumor may shut off the uterine canal and sterility result; or the irritation of the tumor may produce so much congestion of the uterus as to

set up the condition known as chronic metritis, viz.: congestion with hyperplasia. When this is the case the symptom of pain is much increased, and bleeding will occur.

It is not uncommon at the menstrual period to find the tumors and uterus more enlarged than ordinarily, and in some cases at these times there is frequently retention of urine requiring the use of the catheter. We may recapitulate the symptoms of the solid, subserous fibro-myomata thus:

A. Uterine displacement;
B. Pressure upon or irritability of the bladder and rectum;
C. Bearing-down pain and backache;
D. Uterine tenesmus at the menstrual period;
E. Serous leucorrhea with or without peculiar odor;
F. Pressure on the nerves and blood vessels;
G. Increased depth of the uterine canal;
H. Occasional retention of urine;
I. Sterility;
J. A solid, non-sensitive tumor,
K. Mobility of the tumor and uterus together;
L. Ascitic fluid in the abdominal cavity.

Of these symptoms, nearly all will be found in those cases where the growth nearly fills the pelvis, and nearly all of them will be wanting if the growth is too large to enter the pelvis, and therefore lies above it. In one case the patient may be suffering from nervous irritability and a disorder of all her functions to a considerable extent; she may be confined to her room, locomotion being painful. In another case, the pelvis being but little encroached upon or entirely empty, the patient may have no symptom of suffering, and may enjoy good health.

When the tumor and uterus are above the true pelvis in the cavity of the abdomen, their connection is usually determined by bimanual examination without the aid of the sound. If cystic degeneration has occurred, palpation may detect it, and aspiration will produce a fluid having in it the fiber-cell or a fluid coagulating on exposure to the air, or blood alone may be drawn. The cavity of the uterus will likely be found lengthened, and the connection between the tumor and the uterus may be determined by seizing the latter with a volsellum forceps, while an assistant seizes the tumor; alternate pulls by each other will determine a connection with the uterus, but it will not determine positively that the tumor has not had another origin and formed a uterine attachment. In such cases the proper method of diagnosis is by an exploratory incision, the operation for removal of the growth following immediately.

Interstitial Fibro-Myoma, Solid Variety.—As in the case of the subserous variety, the earliest symptoms will be uterine displacement with vague symptoms of but little certainty. As the tumor increases, if in the anterior wall, anteflexion at first, and later retroflexion, will occur. If in the posterior wall or at the fundus, retroversion will soon follow. The uterus in all varieties, by increased weight, partly due to the growth and partly to increased blood supply, will descend to some extent. As the tumor grows, dysmenorrhea, menorrhagia and leucorrhea develop. The irritation of the growth hastens uterine tenesmus, and that organ, becoming congested and heavy, sags down in the pelvis. As the tumor is increased the uterine canal is pressed upon; the symptoms of pelvic engorgement spoken of in the last section occur, and continue until the tumor and uterus, by reason of their size, are lifted up out of the pelvis. The introduction of a sound, or, better, bimanual examination, proves the growth to be the uterus enlarged by the tumor. Disordered blood flows from the uterus and leucorrhea more or less serous are the other symptoms most generally encountered.

Fibro-Myoma of the Cervix.—Here the symptoms differ from the others in this, that menorrhagia is not so frequent, endocervicitis is more common, and the enlarging lip of the uterus is in sight if a speculum be used, and within easy reach of the finger. The differential diagnosis involves the malignant growths of the cervix, hyperplasia of the cervix following laceration, and inversion of the uterus. The tumor, if pedunculated, may be traced to its connection with the uterus. The consistency of the growth, its want of sensibility, the inability to separate it from the uterus by bimanual examination, the inability or difficulty of finding the os, the fact that it has lost its normal or usual contour, the slow growth of the tumor, the presence of the uterine fundus beyond, the absence of all cachexia, the fact that the growth is of sufficient size to impact the pelvis, will clear up the case. Should it be deemed necessary, however, an incision into the growth can be safely made and its nature fully diagnosed. Even should the tumor prove to be the inverted uterus, in the hands of a good surgeon no injury would result.

Submucous Fibro-Myoma.—The inception of this variety may be early followed by dysmenorrhea, menorrhagia, metrorrhagia, leucorrhea and serous discharge, uterine tenesmus and displacement, the symptoms steadily increasing with the growth of the tumor. Occasionally, menorrhagia and metrorrhagia are wanting. The uterus enlarges, its cavity increases in depth, its walls become heavier, and because of increasing weight it sinks in the pelvis. Anemia, neurasthenia, dyspepsia, great depression of spirits and prostration often rapidly follow, and unless the patient is relieved of the tumor, either by nature or her physician, she will die. Should the patient not get rid of the tumor early, it may so enlarge the uterus by its growth that the former is lifted out of the true pelvis.

General Remarks.—Solid fibro-myomata are differentiated from ovarian cystomata and fluid accumulations in the cellular tissue of the pelvis by the entire absence of fluctuation, their slow growth, their connection with the uterus, and the marked derangements of the functions of that organ. From solid tumors of the ovary it is not always possible to differentiate them, and as already noted, I have seen both Billroth and Lawson Tait open the abdomen for a supposed uterine tumor, and find instead a solid ovarian tumor. The moving about of the solid ovarian growth may move the uterus, and give the idea of a uterine tumor with a pedicle.

The most difficult diagnosis is encountered in very small subserous and interstitial tumors. But time or the bimanual method of examination carefully employed, or pulling down the uterus with a volsellum and retroverting it toward the examining finger in the vagina or rectum, will sooner or later discover the small growth. If it be subperitoneal and located on the anterior wall, and producing symptoms of stone in the bladder, I see no objection to dilating the urethra, dragging down the uterus, passing the

finger into the bladder and examining both bladder and the anterior wall at the same time. The interior of the uterus may be reached with the finger only after thorough dilatation, which may be accomplishd with Molesworth's dilator or the metallic dilator of Marion-Sims, or Gooddell, either after or before division of the vaginal portion of the cervix.

Previous to entering upon either of the above-described processes, the bowels should be completely cleaned out, and all pelvic congestion further relieved with antiseptic hot water douches, and the last may be continued as a safeguard after the procedure. Both anteflexion and retroflexion of the uterus have been mistaken for fibro-myoma. The uterine probe will locate the position of the fundus in either case, and careful manual palpation will further solve the problem. Fecal accumulations in the caput coli or sigmoid flexure would not follow the movements of the uterus, and would be affected by enemata and cathartics. Pelvic hematocele is of sudden appearance, accompanied by evidence of loss of blood; the tumor is fixed and painful to the touch.

Pelvic cellulitis produces a painful swelling which soon fixes the uterus, rendering efforts to move it painful; the temperature rises and examinations are painful; the vagina is hot and the pulse beats perceptibly in the vaginal arteries. These constitute the main clinical features, differential and otherwise, of solid fibro-myomata of the uterus.

Caution.—The uterine sound as an aid to diagnosis is beyond doubt valuable. Its use is entirely precluded in case pregnancy exists. It should be used with the utmost care and without the exercise of any force. The direction of the uterine canal should be first determined by means of a flexible probe, which may also be used as a substitute for the sound. An extensive experience in bimanual examination will enable any one to dispense with the constant use of this instrument with advantage.

(*To be Continued.*)

SICKNESS AND PAUPERISM.

Read before the Cambridge Society for Medical Improvement, Nov. 22 1893.

BY L. L. BRYANT, M.D.
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There are over eight thousand histories of families who have applied for public aid on file in the office of the overseers of the poor of this city. This represents twenty-four thousand names, in round numbers which appear on the pauper books of Cambridge. To this list, names are continually being added at the rate of fifteen hundred a year. What are we, as a Society, doing to prevent this? The question has often been asked me: "What are you doing?" and I have many times propounded the same question to myself. This paper is written in the effort to reply. In the month of May, 1883, ten years ago, I was elected to the office of Assistant City Physician. The said office was created Dec. 1, 1880, to enable the local Board of Health to conform to statutory law and yet retain the incumbent City Physician, Dr. Henry P. Walcott, a man occupying an honored position in the State Board of Health, and standing deservedly high in the respect and esteem of the people, and of this Society, of which he is a member.

My predecessor, Dr. O. C. Turner, a most estimable man, died in October, 1892, of typhus fever, contracted while in harness; and during his illness, and subsequently until my election the affairs pertaining to the office were satisfactorily conducted by my friend, Dr. Wetherbee.

With a nervous organization particularly susceptible to external influences, and with absolutely no knowledge of the refinements of modern economics as applied to the poor, I sought and found the office which I still occupy; and my only qualifications were a fair knowledge of general medicine, and that experience which usually follows the first few years of practice subsequent to graduation.

The gaunt, hollow-eyed, cadaverous poor, having nothing and wanting everything, I knew nothing about, and as little what to do for, or with. Entering the service of the city under the circumstances, and in the condition mentioned, I first made myself acquainted with the duties prescribed by the city ordinances.

I found the office of the overseers of the poor to be the abiding place of one of the most perfect systems with which I had ever been made acquainted, with its thousands of histories of individuals, each one necessary to the proper registration of an applicant for aid and the establishment of a legal settlement, numbered, indexed, and filed away in bound volumes. I found in this office all the usual machinery and labor-saving devices necessary to the conduction of a large business, and presided over by a Secretary, D. P. Muzzey, devoted to his work; and apparently constantly employed. I found that all appeals for assistance must be made to this Secretary, who was empowered by the Board to dispense the city funds at its command as it deemed for the best interests of the applicants, and then to so manipulate the official machinery in the interest of the city as to secure from the various cities and towns wherein they had resided long enough to acquire a settlement, a monetary equivalent for everything paid out and for all services rendered. I found that the fixing of a settlement on some other city or town was one of the most important duties of the office, and required the services of a so-called "Visitor," who, likewise, was apparently constantly employed. This labor necessitated calling on the applicant, asking for, and recording various personal questions, searching city and town records to prove the truth or falsity of his or her statements, and, in general, the making of such a return to the office as would enable it to form as accurate an idea as possible of what he had been, what he was, what he wanted, and "how we are to get anything back?" I found that the Secretary was the confidential clerk and advisor of the Board, the disburser of supplies, and came into more intimate relationship with the Board, the poor, and the general public than any one else, and conscientiously performed his duties.

The Visitor, Vespasian Danforth, enjoyed the distinction of being considered one of the best versed men in pauper law in the State. Both of these public servants were ever on the watch for fraud, and worked the machine, seldom allowing sentiment to change the order of its working. Not but they were susceptible, but experience continually taught them that yielding to it was an unprofitable indulgence save as a reflection from the Board. I found as a working formula that the overseers of the poor expected me to visit such of the poor of the city as the

Secretary should direct, prescribe for them as my judgment dictated, and to suggest to the office anything which I might consider it to be the policy of the city to do in the direction of relieving their sufferings and distresses, or tending towards making them better law-abiding and self-supporting citizens.

Of all classes, the poor seem to be the one easiest to prescribe for, their wants being few and simple, and one's mistakes are so easily buried. I went into the work largely for the salary I was to get. I did not love the poor, that I can remember, except in an offhand sort of way, and I am not certain just how much I have acquired; but I soon found that there was something more for me to do than to issue dogmatic instructions as to medicine and diet, These must often be furnished; and not alone diet and medicine, but everything that my patient's condition sets up within me the want for him to have, but there was more than this.

The labors of the Board, with which I was connected, were not only directed toward relieving paupers, but toward the prevention of pauperism. The more I became acquainted with the office and with its efforts in this direction, the more apparent became the responsibilities which I had assumed; and often, as the magnitude of the efforts of others in charitable work have become known to me, my own have seemed so futile, that a morbid sense of my unfitness for the work that was gradually unfolding itself oppressed me. To-day, all the Utopias of which I may have dreamed, are vanished. I feel that I have acquired what the boys call a "crust," from off which smiles, tears or curses alike glide, and if ever unpleasant reminiscences assail me I pull myself up out of the pessimistic slough, with the comforting thought that I have done my duty as I have seen it, and have earned my salary.

The man in private practice has his pensioners to whom he gives or withholds according as his emotional centers are affected. Nowhere have I found such tenderness, devotion, sacrifice, and forgetfulness of self, as that exhibited by the members of the medical profession, particularly for the worthy poor; those unaggressive individuals whose morals, or "rules of conduct considered essential to social existence," appear like ours and have not altered under poverty's pressure; those who suffer and are still, and who practice virtues we do not ourselves possess. This is often, however, but the chrysalitic or transition stage preceding their development or degeneration into the unworthy class.

The unworthy poor are those who do not approach or appeal to the average medical man as he fondly imagines that he would, were he in the same financial condition. There is an aggressiveness and an insolence about them that is repellant, and which gives one the impression that the same force economically applied would make them independent of others' assistance. But the law knows no such distinction; sickness levels both to the same plane, and as the medical officer of the city the fact that I am to care for any one being established, I have nothing to do with his morals except where their defection is the cause of his disease, and must use the same circumspection for all alike.

Upon going out into the homes of the poor, I found there the hard, coarse, hell-side of life. I found as types, the nice old lady who wouldn't for the world have her friends know that she felt obliged to have the city doctor; the tired-out, exhausted, poorly fed, discouraged laborer; the thin, hatchet-faced mother, daily rubbing her very life into the washboard, while the father stays at home and minds the babies; the broken-down beat and bummer, with his trembling muscles and his protestations of sobriety; the sick infant, left to the care of one scarcely older than herself; the dirty, lousy syphilitic; the consumptive and chronic rheumatic, waiting for, and looking forward only to death; the criminal imbecile, fool and insane man; and the little children prematurely aged and kept at home at scullion's duties. Seldom I found the square, honest, upward energetic look, but oftener, the inert, downward, sneaking, leering glance, with the light reflected from the white of the eye. Here a woman asserts that she is sick, that her husband has rheumatism, or that her child has a contagious disease, that I may be induced to request of the office, fuel or groceries. Here is an intelligent man of the genus tramp. I met the same man last year, and the year before that. The nights are getting quite cool now, and he concludes that it is about time to go into winter quarters. Leisurely he makes his way to the office and informs the officer there that he would like to go to the almshouse. Asked why he does not go to work he replies with an injured air that he has a pain in his back and can not work. The officer demurs. The man grows persistent, and is finally referred to the doctor. The injected superficial veins and his general tremulousness tell their own story; but what about that pain in his back? Is there one of you here who is able to tell whether he has, or has not, a pain in the back? You are morally sure that he is a fraud; but who of you, having the power has the courage of his convictions, and will say to that man, "No." No; public sentiment has not reached that stage where it will support any such decision, and we think again, and we find that it is true that he is not quite "up to concert pitch"; that he does need a little straightening out; and a doubt begins to frame itself that we have all the factors relating to that pain clearly before us, and the man goes to the almshouse.

Here the best that the house affords is his: food, clothing, bedding, pipes, tobacco, and that luxury of the modern hotel, a smoking room. Here in this steam-heated shelter, he whiles away the short winter days, sleeps through the long restful nights, grows fat, and perhaps, when the snows have gone, and the spring is well advanced, he ties up clothes in a bundle that he did not fetch with him, tells us that he has found work, and bids us adieu.

It is no state secret that public officers are largely at the mercy of a class of persons made sharp, keen and desperate by their fancied necessities, who are more difficult to manage than criminals because they are not under the ban of public censure but, hiding under the wings of public sympathy are in the position to dictate and the officers must obey. That this is true abroad as well, is asserted by Josiah Flynt in the October *Century*, who says of Germany, the home of the most advanced public efforts relating to pauperism to-day: "With all its groans under taxes, military and otherwise, it nevertheless takes upon itself voluntarily the burden of the voluntary vagrant—the man who will not work," and after giving a resumé of the various methods and institutions employed he adds: "But the man who will not work

passes through these institutions as freely as the man who will."

And now, what shall I do with my patient? The therapeutics of pauperism, complicated with sickness, is somewhat different from that employed where treatment is confined to sickness alone. Both are morbid conditions, and either or both may be inherited, or acquired, or contagious. Both must often be treated at the same time, because if the treatment be limited to one, fatal results may accrue from an aggravation of the other. Together they make up a combination that in spite of the prayers, labors, study and money used and continually being used, is frightfully on the increase. When I do not know what to do I fall back on the machine. When I can care for my patient at home, I do so. When it is a question of hospital or almshouse, I send him to the almshouse. Why? Because it is cheaper. Surgical cases go to the hospitals, because there they have the appliances and can command the skill which I do not possess.

As the years have gone by, I have been led to look into the "springs of man's action," in search of the causes of pauperism, and for additions to my armamentarium. I have found the truth of Bastiat's observation, that all economic movement may be resolved into "wants, efforts and satisfactions," terms correlative of those of the reflex process of ideation; perception, comparison and action. Want, according to Gunton is "such conscious need of an object that its absence will cause sufficient pain to induce the effort and sacrifice necessary to its attainment." "Want is the sole motive and the only measure of effort, for no more effort is ever put forth than is necessary to secure satisfaction. Until a desire becomes so intense that more pain is produced by its non-satisfaction than will result from the labor and sacrifice involved in its gratification, it is not an economic force of want, the need to consume being too weak to impel sufficient effort to produce."

I found that a man's efforts tended toward the achievement of satisfactions that are "customary, and therefore demanded" by the best livers among those with whom he associates, the sum of which constituted his "standard of living."

I found that perceptible advancement in one's standard of living was not a matter of days or months, but of years; and that any attempt to force its growth met with waste.

I found that the standard of living of the poor with whom I came in contact was not mine, was best ascertained by comparison—not with mine—but with those of a social equality with them, and that their efforts were then more intelligently directed along economic lines.

I found that history teaches that public aid does not strengthen but weakens, and breeds the disease called pauperism.

I found that it was not expected that this people should remain paupers, but that their necessities should force them to continue their efforts to keep up in the race.

I found, as Stoddard puts it, that "not what we would, but what we must, makes up the sum of living," and that sickness, sighs, tears and groans were not economic forces, but media through which one's ineffectual desires and efforts were communicated to others.

Physical disease is a common foe, without sentiment, smiting alike the rich and the poor who disobey the inexorable laws of health. Money will not propitiate it, years of penitence and years of prayer have not stopped its devastating onward march, and it is only when we add the sick man's ineffectual desires to our economic wants, and let our strength compensate for his weakness in a common struggle for a common satisfaction that sentiment is of value as a therapeutic agent. It is not the empirical sentimentality that gives birth to flowers, ice cream or religious tracts, but the kind that reaches down, grabs you by the hand and stands shoulder to shoulder with you in a *fight* with a common enemy.

I have found that the same is true in the treatment of pauperism. It is not pity that comes in with tears, sighs and groans with which to fight tears, sighs and groans, but that coming with the trumpet call to arms. There is a sentimentality, and affectation born of ignorance, money and fadism with which we all are acquainted. It looks right, but it rings flat. It takes a man up, toys with him until he ceases to be a plaything and refuses to be wound up, or to run right when he is, then it tires of him, and he is told that if he wants any more assistance to apply to the overseers of the poor. What can the poor devil do? Go to work? Where? What is the incentive to work? No, he has eaten of the tree of knowledge, his ambition and energy are sapped, his moral tone lowered, he cries inertly: "God help me, what can I do?" and he lets his wife and children work. He applies to the overseers of the poor and contracts pauperism. His children are taken sick. He is informed that he can have free medical attendance by application to the city doctor. Is his condition improved? Is the material condition of his family improved? Not as I see it. Down he sinks, lower and still lower in the social scale until, as the years come and go and his children reach the age when they should be self-sustaining, they too think and act along the same lines, and have an incapacity for economic effort. A glance at the histories on file in the office of any board of overseers of the poor will show this to be true, as will also a perusal of the history of the notorious Jukes family.

And now, what can be done to prevent a continuance of this state of affairs? Make no distinction as to worthiness or unworthiness, and keep the people from going to the overseers of the poor. That the men of some sections of the city are doing this I know, from the few calls I get in their locality.

As physicians we can not afford to shirk the responsibility which is clearly ours, by every law of scientific and human right.

We are scientists, striving to look through the maze of error and to discover the truth.

We are philanthropists by virtue of our profession, intrusted with the lives and the material happiness of our fellows, poorly paid for our services even by the wealthiest, and looking forward to the close of life, not with the expectation of leaving a large account to our descendants, but an example for their emulation.

We are optimists, too, ever looking for the best principles that move mankind. We come into closer relationship with humanity than pastor, priest or lawgiver. Ours is the opportunity possessed by no other body of men, to inculcate those principles of thrift and independence which are the essence of true manhood, womanhood and American citizenship.

The individual study and applied efforts of each in a few instances will produce better results and more lasting satisfactions than with many.

In my own case I aim at quality and not quantity. I am not at all anxious to present a list of a large number of patients in my annual report.

When a man comes to me to be inoculated with pauperism and informs me that such a doctor always attended his family, but that he owes him a bill and is ashamed to ask him for further assistance, I send him at once to his physician; and I instruct him to tell his doctor his whole story, concealing nothing; and then to say to him: "Doctor I have no money, but just as soon as I can get work I will pay you a little at a time until my bill is paid." I have never known such an effort to fail.

A little story of Marshall Wilder's I sometimes use as a therapeutic agent: "Two frogs fell into a pail of milk. One exclaimed: 'Help! Help! I sink! I drown!' The other answered gruffly: 'Kick! Kick; you little devil! Something will surely happen.' The first one continued to gasp and moan, and finally sank out of sight. The other kicked and kicked until nearly morning, when the milk having been churned to butter, he walked out onto dry land."

DISCUSSION.

Dr. Morrill Wyman said he had not seen as much pauperism as the reader, yet he had had considerable experience with it. He told of one case rather remarkable, where the father a miserable fellow, became a pauper and the succeeding children, making three generations, followed his example. In the early days of his practice there were few foreigners in Cambridge as compared with the present time and there was less pauperism.

Seeing a number of lazy looking fellows loafing about a corner, only a short time ago, he accosted one who was smoking and asked how these men obtained a living; when he received the reply that their parents went out to work and their mother took in washing. When asked what was to become of these men the fellow replied: "They will bring up in jail if they are lucky enough to escape hanging."

Dr. Horace Marion said the reader had presented in a forcible and illustrative manner many stubborn and stony facts. The subject is a broad one to grasp, on which little literature has been published, and with foreign countries pouring in a constant supply of paupers, one of great moment for the welfare of this country.

It is difficult to say what is best to be done, but it is certainly sure and important that patients should be kept away from the overseers of the poor.

The emergency societies are doing much to prevent the development of pauperism. Their method is to practically give them the articles they require, but at the same time to make them work and think they thereby earn them. A great part of the work of the Overseers of the Poor consists of the investigation of settlements; by this means a certain amount of money is refunded from the township whence the pauper came.

Dr. Taylor said in a few instances he had sent patients to the Overseers of the Poor, and thought it had a stimulating action, effecting the patient to do something for himself. He did not like to attend non-paying patients who live at a distance, neither did he think it right to send such patients for care to other physicians, although he knew instances where such cases paid something to the other doctor.

Dr. Clarke said when he came across long tedious cases that required much care and medicine he usually referred them to the city physician. With poor patients who can not pay, he is in the habit of making them do service of some kind in exchange for his advice, and thinks in many instances it has a good effect. Certain cases are too lazy to work. In Boston, certain institutions are in the habit of making applicants for meals work—sawing a quantity of wood, in compensation for the food given them. Some men will work hard and others prefer to go without a meal, rather than work and earn it. He thought a similar line of action to this might be taken in Cambridge, and is of the opinion that most of the foreigners imported here are of an industrious nature and not inclined toward pauperism. The West is largely built up of this class of people. The greater number of paupers are American born and they form the worst class. Most foreigners come over here with higher motives than pauperism; they come to better their condition, and many instances might be quoted where they become prominent citizens, such as one he had encountered this summer at Chicago.

Dr. Norris differed from this latter view; he thought "the microbes were imported," and that paupers originated, at least, from the foreign element.

Dr. H. P. Walcott said his relations with the Government did not give him the intimate knowledge of the poor which Dr. Bryant possessed. He thought Dr. Clarke's statement worth consideration; it is certainly true that the worst class of paupers are those educated in pauperism, and that we have educated many of our citizens in this respect. We do not import many paupers now because our ports are guarded against the landing of this class, and a large number who come over are recognized as paupers and sent back. State and municipal aid are unfortunate for the poor as such aid tends to make paupers of them.

Dr. Vaughan.—Municipal and State charity is an irremediable evil. Brooklyn has cut off all outside aid; the burden is carried by voluntary organization. Public relief is not charity; it is compulsory to meet an evil that can not be helped. The taxpayer supports it. The associated charities and Overseers of Poor work so closely together that the latter turn all cases over to the former for investigation. With more or less help from organizations to substitute the work of the Overseers of Poor, he thought the public would be relieved of much of its pauperism; and he hoped the time would come when by the combined effort of the associated charities and other similar associations, the work would be entirely removed from the Overseers of the Poor.

The medical work of the poor must be done in a similar manner, and by giving such advice free as may be required physicians will avoid making many patients paupers. There is an uncertainty about the effect of the associated charities, due to an imperfect knowledge of the after history of many of the cases, and a want of tact on the part of the visitor.

It is now arranged so that a person can have his or her name erased from the books of the Overseers of the Poor, by paying back such sums as have been given.

At one time there was no restriction in Cambridge against administering to the poor, and as a result this class flocked here for help. The evil of placing children in almshouses is recognized, and at present there is practically no department for children in this institution. All except the imbecile and the like are boarded out in families.

Dr. Dow rarely sends a patient to the city physician; he explains that it makes paupers of them and usually they wish to avoid this condition, preferring to pay him something for his services. He questions the wisdom of sending a visitor to the poor, because they are received as a distinguished visitor and not as a friend. The associated charities makes the poor reform without giving them much.

Dr. Lloyd thought the consideration of the poor at this meeting is in their relation to sickness, a complication of

pauperism, and a very proper subject to be brought before the medical profession. The pauper is a person in a chronic condition of mental and physical weakness, and requires to be carefully studied, like crime or other diseases. The sick poor must suffer until means are found to obviate the condition of pauperism. This is an evil of civilization and increases in ratio to the wealth and intelligence of the people. The condition may have come from the mental state of antecedents which have been introduced into this country but not found among the early settlers. This foreign element diseased with crime, immorality, etc., give issue that are dealt with as American born citizens, live in and infect cities, cause crime, poverty and pauperism. All good citizens should act in conjunction to prevent the imposition of these people. The best way of dealing with this class is to make each individual believe he must be self-supporting; the poor man must be taught that he can and must do something for a living unless physically diseased.

DR. MAHECHNIE thought it did harm to help poor families; we are guilty of doing them an injustice when we do not make them pay their debts. There are few paupers in West Somerville, because the physicians there render such aid as is required of them.

DR. HENRY O. MARCY considered intemperance a great cause of poverty. He asked if the hard times had not increased the work of the overseers of the poor among the worthy poor. There are many Italians at the North End, Boston, who have less comfort than cattle. He considered "educated men expensive animals."

DR. C. C. FOSTER thought that *children's homes* contributed to the list of paupers, because the children were not taught how to work and earn a living.

DR. MORRILL WYMAN asked if children that had been placed in the almshouse had any desire to return home?

DR. FOSTER.—No; they want to stay, and while there they hear the talk of the older paupers, which is vile and perfectly horrible for the ears of children.

DR. BRYANT in closing the discussion said that children in the almshouse were associated with old women and bummers; do not get the care or instruction which they should, and become and remain paupers. The education of these poor children should be looked after. He considers the medical profession should be responsible for the well-being and morals of all homes into which it is brought.

A district nurse is of great value, to instruct and make homes brighter and cleaner.

Seventy-five per cent. of paupers are of Irish descent; next come the Western Islanders and Portuguese. Poverty comes from intemperance and intemperance often comes from poverty; the poor wish to drown their care and sorrow in drink.

ENEMIES OF THE HUMAN TEETH.

Read in the Section on Dental and Oral Surgery, at the Forty-fourth Annual Meeting of the American Medical Association.

BY A. M. BENSON, M.D., D.D.S.
LA CROSSE, WIS.

In the same mail with Dr. Talbot's letter of invitation to prepare a paper for this meeting, came a circular from a member of our profession announcing that he had discovered a new local anesthetic, making the extraction of teeth harmless and painless; the greater part of it being devoted to testimonials from doctors and dentists who had used it; and telling how they had removed from six to twenty teeth from the mouth of one person at a time, thereby very much increasing their business; the author closing with urgent advice to all dentists to avail themselves of this great boon offered to the profession at the very low price of one dollar a bottle, or six for five dollars. During the past year I have received perhaps half a dozen similar advertisements, and nearly all of them signed by a D. D. S. Many of you have had no doubt a like experience.

Chagrined at this impudence and unprofessional proceeding, and believing that such practice ought not to go uncondemned and under professional protection, I have accepted the invitation, and the enemies I wish to direct your attention to are not those about which so much has been written, which it takes a scientist with a microscope to discover, and against whom the evidence is mostly circumstantial, but those conspicuous and more dangerous ones whom we have all seen with the naked eye and many of us felt upon our naked jaw; who plume themselves with professional titles and dwell mostly in "dental parlors," though they are sometimes found in the country doctor's office; who shed innocent blood and mutilate the human body in the guise of saviors, and claim special social recognition and honor; who write articles for the journals and are often found in college faculties, where they are conspicuous for their zeal in elevating the standard of the profession; whose interesting portraits so often confront us in the advertising columns of the public press along with the rest of the medicine humbugs.

Perhaps some one murmurs, This is a slander. Let me relate what I witnessed in one of the high grade schools:

A local dentist, not a member of the faculty, was invited to give a clinique for the benefit of the class, the operation to be the extracting of a number of teeth under an anesthetic, ether being the one administered. The victim, an ignorant servant girl, whose mouth was indeed in great need of renovation, affording the students a splendid opportunity to take a lesson in the highest achievement of the dentist, "the restoration to usefulness of diseased teeth." But what was done under the direction of the professor? The frightened girl was placed in the chair, pulled into the recumbent position, and the inhaler placed over her face, against all of which she frantically struggled, but the odds being against her, she finally succumbed. Then began a scene worthy of a place in the Spanish Inquisition, and which properly described and illustrated would form a fitting canto in Dante's "Hell." The chief operator, after removing his coat and cuffs, seized a forceps and with trembling hand thrust it into the spongy gums as near a tooth and collection of tartar as his shaky condition would permit. Successive quick jerks, accompanied by the sounds of crushing bones and low groans, followed by a swaying among the pressing crowd, trying to dodge flying pieces of haggled humanity continued for some time, when, owing to exhaustion of the operator or the over-flowing of blood and ingesta which threatened to strangle to death the patient, active operations were for a moment suspended; but there still remaining some roots deep in the gaping wounds of her jaws, others present knowing themselves experts volunteered to kindly assist the tired scientist and cover themselves with blood and glory. The former was easily accomplished, but the opportunities for glory seemed wanting, and after bringing away a few chunks of gum and process, they retired, declaring those were the

most obstinate roots they had ever encountered. The patient having again collapsed, a sympathetic looker-on, realizing if this poor creature should any longer serve the ends of science she must die, suggested that the clinique cease for the present, and the remaining roots be removed at a future time, when the gums were not so swollen. The hour, too, now having passed, the class, evidently satisfied that their alma mater had provided them a fine clinique, hurried away to the amphitheater to listen to a lecture on remote disorders in the body caused by carious teeth, leaving the patient to the care of the janitors, who, considering her from the human rather than scientific standpoint, kindly cared for her until she was somewhat restored, and some hours later, though still dazed and bleeding conducted her out from this woeful place.

I have never been able to conceive of any excuse for such an outrage within a dental college. As evidence that such teaching bears abundant fruit in practice, I quote verbatim, articles from a popular dental journal, the first headed: "A Large Tooth."

"About a month ago a lady from our town introduced herself to me with the intention of having some teeth extracted to make room for an artificial set. I removed eight of them with great difficulty, though I had administered first a soothing preparation invented by me for this purpose. A few days ago the lady returned to have the remaining teeth removed. In examining the mouth, I found a perfectly sound upper cuspid on the right side, and I advised her to let it remain. The lady, however, insisted on having it removed, in doing which I succeeded, after two unsuccessful attempts with safety forceps. The tooth is one and one-eighth inches long, and shows a circumference of one inch. The lady weighs at the present time 110 pounds. Has any one extracted a larger tooth? We should like to compare notes."

In the next issue appeared the following answers:

"About five years ago I was practicing in the town of ——. One day a cadaverous-looking man came into my office to have several teeth extracted. After removing two or three, I tackled the right upper cuspid, and after some little difficulty it gave way. I thought I had pulled the whole jaw off, for a large piece of process and the first bicuspid came with it. This bicuspid is one and seven-sixteenth inches long and one and one-sixteenth inches in circumference."

"Last June I extracted seven superior teeth for a lady. I found four very difficult to remove, viz.: two canines and two first bicuspids. One canine is one and five-sixteenth inches long and fifteen-sixteenths of an inch in circumference. The bicuspids were bayonet-shaped. One is one and one-sixteenth inches long and one inch in circumference. The lady weighs about one hundred and twenty pounds."

"About three weeks ago I extracted six teeth for a lady, among which were two upper cuspids, both largely decayed. The larger of the two measured one inch and five-sixteenths in length and almost one inch in circumference. The smaller is one and a quarter inches long by fifteen-sixteenths of an inch in circumference. I preserved these monsters and have them in my possession."

I avoid names, as my desire is not to point out individual shortcomings, but to direct attention to a too common practice. I believe the venerable Dr. Holmes is credited with saying, that if all the drugs used as medicine had been sunk in the bottom of the sea, it would have been better for humanity in general. I think the same might be said, if not of the entire dental profession up to date, at least of all the instruments invented for the extraction of teeth.

I venture the statement that at the present time, though in the vanguard of the profession are many noble men who can truly be called dental doctors, a large number of so-called dentists are truly "enemies of the human teeth," destroying more than they save.

I knew a dentist, now deceased, who during the twenty-five years he was in practice extracted, it is safe to say, enough teeth to fill an old-fashioned farm cart. Imagine, for a moment, what this represents in blood, tears and trepidation, to say nothing of the leering deformity, crippled condition, and many deaths directly due to this malpractice. The best men in the profession are agreed that 99 out of 100 of all the teeth and roots presented for treatment can be saved and made comparatively useful and with less pain to the patient.

It has also been demonstrated by implantation—though I hope this operation will not become popular—that teeth long out of the mouth and strangers to the new organism can be accepted and become firmly held in the jaw; then how much better must it be to retain roots which have the advantage of natural position and long-established attachment. This being true, what shall we say of those who extract sound teeth to make room for an artificial set, or because some people ignorantly desire it?

As mentioned in the beginning of my paper, this has all been said before, and the majority of dentists have a vague idea that it is wrong. Then why is it? I think the chief reason may be given in one word, "Business."

O, Business! what crimes are committed in thy name!

The public has so long been educated by the quack in all the departments of life, that it is easy for men without moral character, but possessed of some cunning, to get money by preying upon them. Every day thousands of people freely give hard-earned money to have teeth extracted which should be saved, and thousands of dentists daily serve them, conscious of the wrong, simply because they want the money. Alas, that cash should be so dear and flesh and blood so cheap!

A dealer in dental materials informed me that one manufactory of artificial teeth sent out 5,000,000 sets each year, and there are a number of such enterprises in our country whose prosperity depends mostly upon the efforts of those dentists who extract teeth to make room for their products. Unfortunately this weakness for money does not belong to the dental specialty alone. If from all the learned professions were taken those who practice for revenue only, the number in each would probably be very much diminished.

Theoretically this is an age of high ideals, but practically we have something yet to reach; and though I have called attention to evils common in our profession, and am convinced that for many of us it were well to examine ourselves if we are worthy the title we bear, yet I believe that our specialty has made greater progress than any other department of medical science, having accomplished the successful treatment of nearly all the diseases of the mouth, and making the preservation of teeth in the hands

of the intelligent and conscientious dentist a certainty. In my opinion what is needed is not so much higher knowledge, but a better use of that already possessed.

While at college I was often edified with encouraging lectures by members of the faculty who never failed to inform us that there was plenty of room at the top of the ladder, seldom mentioning that there was anything needful or honorable to do at the bottom.

This may be well, but I have discovered in practice that if the glory of the dentist be the salvation of the natural teeth, for the dentist true to the noblest impulses of his nature who values the approval of his own better judgment above all things, and will succeed by honorable means or else retire, there is an extensive field for labor at the bottom of our professional ladder. Probably less than one-fourth of our population take proper care of their teeth.

I have thought that if, as in the clerical profession, we had different degrees or orders in our specialty, so that the ambitious youth who now seeks admission to the college, but owing to its high requirements fails to enter; for such there might be a sort of preparatory department where, if bringing evidence of having learned their catechism (especially our duty to our neighbor) they might be admitted and instructed in that branch of our work which does not necessarily require an extensive knowledge in science and literature, but rather mechanical skill, which having learned, they might be ordained and licensed like Fourier's Sacred Band to do such duties as are distasteful and likely to be neglected by the D. D. S.—missionaries, as it were, to a benighted public, who now under the flickering gasoline light sit and allow these devils who go up and down our country, seeking whom they may devour, to scatter their teeth about the public market-places while the band plays, "Annie Rooney"—saving them from this quack and his brethren, the vitalized-air and local-anesthetic fiends, by teaching the use of the tooth-brush and the saving power of amalgam filling, and after thus having served humanity for some time, and honestly earned some money by only asking the same fee for saving teeth as is now willingly paid for destroying them, might take a further course at college.

Three hundred years before Christ, Erasistratus, a dentist of ancient Greece, is said to have deposited in the temple of the Delphine Apollo, a leaden tooth-forceps, to impress upon all beholders that only those teeth should be extracted which could be removed with such an instrument. Might not, in our day, such an emblem be profitably suspended in every church and public school-house, or at least in every medical college and dental office?

But let me bring this paper to an end, confessing that its only redeeming feature is the object for which it was written, and if it shall be the means of saving a single tooth which otherwise would have been destroyed, I shall believe it was not written in vain.

DR. EDGAR PALMER said that the indiscriminate use of these secret compounds for local anesthesia should be absolutely and sternly discountenanced. He had never used any such. He had very carefully and rarely used a formula which had been recommended to him by one he could trust. He knew of cases where septicemia had been caused by hypodermic injections of such a preparation by one who was exhibiting it for advertising purposes, causing one death and severe trouble to several.

DR. TAFT said that every dentist should stamp his disapproval on everything which is brought out as a nostrum, and never lose an opportunity to warn people of the dangers of the traveling quack who goes from town to town, and either from the gaudy chariot or in the "dental parlor" extracts teeth without pain. The danger of operating on one patient right after another, using the same syringe and the same forceps is so serious that if it were understood their occupation would be gone. Besides the danger of infection, is the necessity of having the nostrum strong enough to be effective in every case; this means that for those who would be easily influenced it is dangerously strong. People should be intelligent enough to know that they should not sacrifice teeth except when they can not be saved, and that one whose business is only to extract is not working for the good of the patients, but of his own pocket. The profession should set its face, as a flint, against such practices, and treat such operators as the Irishman treated the crowd in the fight, "whenever you see a head, hit it," and crush it if possible.

DR. S. SAXE spoke of a man who came to his town, and, with a grand flourish of advertisements, announced himself as a famous dentist, and agreed to extract all teeth painlessly, and to refund the money unless he did so. The quack referred to, who really was a graduate and sported the D.D.S. after his name, pocketed over $300 a week, while the conscientious dentists in the town were helpless to hinder the harm he did. The only way the dentists can stop such disastrous proceedings is to educate the people as to he value of the natural teeth, and the means necessary to preserve their usefulness.

DR. BROWN said he knew of one of these painless-extracting fiends, who, having guaranteed to extract with absolutely no pain, had been sued for damages by several sufferers upon whom the anesthetic had not had the desired effect, and he had had to pay the damages and seek new fields for practice.

DR. EDGAR PALMER said, on account of his position in the State Society, he always heard of these cases as soon as they advertised, and that he had taken pains to discover that this man was a graduate of the University of Pennsylvania. Upon learning this, he had written to Dr. Darby, sending him a copy of the advertisement. Dr. Darby had replied that he had communicated with the fellow, and would let him know what he said when he received his reply.

DR. TAFT said we can not hold the institution which graduates a man responsible for his future acts, and after a man has graduated the institution can exercise very little control over him. In some States the law will take hold, but in most States we can do nothing.

DR. BENSON thought that in cities the boards of health should prevent such practices. The ignorant public should be protected from the loss of their teeth, which loss will surely result in danger or injury to their future health.

DR. V. A. LAPHAM thought that the diploma should contain an agreement that advertising or other grossly unprofessional conduct would work a revocation of the diploma. This was the case in Great Britain, where a dentist who had received a diploma from any of the institutions which issued them, and who should be convicted of unprofessional conduct, would have his diploma annulled, his name stricken from the register, and would be fined or imprisoned should he describe himself as dentist, or use the initials of his degree after his name.

PRACTICAL ORAL THERAPEUTICS.

Read in the Section on Dental and Oral Surgery, at the Forty-fourth Annual Meeting of the American Medical Association.

BY GEO. V. BROWN, M.D.
DULUTH, MINN.

Genius has been defined by Carlyle as "an immense capacity for taking trouble," and the methods of oral therapeutics require genius in just that sense for their administration.

Having in charge the natural gateway of the whole wonderfully complex system of human mechanism, we are familiar through experience and the frequent statements in medical and dental literature, with the fact that inflammations having their exciting irritation in the mouth often cause by reflex action severe neuralgic pain in the eye, ear, different parts of the head, face and neck, or whenever connection can be found through the many ramifications of the fifth nerve and its ganglionic associates, that in the same manner also sometimes originate diseased conditions of a very serious nature in the eye and ear, as well as spasmodic affections of the muscles, lockjaw, convulsions, epileptic attacks, paralysis, nervousness and indigestion, and that too there are in contra-distinction to these, another class to which belong the infectious diseases of the oral cavity itself, and those that are caused by the migration of pathogenic microörganisms from the mouth to other parts of the body.

Miller in his "Microörganisms of the Human Mouth," considers the diseases caused by the pathogenic bacteria of the mouth under six heads according to the point of entrance of the infection, and it is this classification which I shall follow in discussing their treatment:

1. Infections caused by a breach in the continuity of the mucous membrane by mechanical injuries (wounds).

2. Infections through the medium of gangrenous tooth pulps and from alveolar abscess.

3. Disturbances conditioned by the resorption of poisonous waste products formed by bacteria.

4. Pulmonary diseases caused by the inspiration of particles of slime, small pieces of tartar, etc., containing bacteria.

5. Excessive fermentative processes, and other complaints of the digestive tract, caused by the continued swallowing of microbes and their poisonous products.

6. Infections of the intact soft tissues of the oral and pharyngeal cavities whose power of resistance has been impaired by debilitating diseases, mechanical irritation, etc., considering in this connection also the possibilities of infection by the accumulation in the mouth of the excitants of diphtheria, typho-syphilis and diseases of like nature.

Of the affections not caused by pathogenic bacteria, by far the greater number are the result of an inflammation of the tooth pulp, discussion of the treatment of which in all the variety of opinions so frequently brought forward by the enthusiastic adherents of each, would, of course, be quite beyond the possibilities of this paper. Therefore, I will simply state that in this opinion, while fully recognizing the important value of the pulp in a healthful condition, once it had been irritated by exposure to external influences and afterward covered by a capping, it must always afterward be looked upon as a source of danger and a menace to the associated parts, unless the circumstances be so favorable that success is assured.

By the careful destruction and removal of the contents of the pulp chamber and canals, the thorough cleansing with antiseptic measures, and the filling of the roots with gutta-percha, inflammations of this character may be promptly and efficiently relieved. Once the exciting cause has been discovered and removed, usually nothing further is necessary in this class of inflammatory processes unless it might be the use of an astringent, a counter-irritant, or better still where practicable, the lance.

In taking up the treatment of diseases caused by pathogenic bacteria of the oral cavity, a rapid glance at the possibilities in this direction seems to be demanded.

The toxic properties of the human saliva have been noticed by observers since the earliest times, and the experiments of modern biologists have fully borne out the truth of their reports.

Fatal results, attendant upon the bite of persons, and the death of animals injected with human saliva, for the purpose of experimentation, have been explained, as we all know, by the transmission into the circulation of the omnipresent pathogenic bacteria, finding as they do in the mouth, a home easy of access, and possessing all of the little conveniences in suitable temperature, moisture and proper nourishment that go to make the microbe's lot a happy one.

Of primary importance, then, must be the care of our hands and instruments. Fatal septicemia, pyemia, and the transmission of syphilis through accidental wounding of the mouth with infected instruments are too well understood to need more than a passing reference here.

In my own practice it is my custom to keep a small jar of $\frac{1}{1000}$ preparation of bichlorid of mercury upon the operating table, and I have given myself the habit of dipping my mouth mirror and every instrument that I use into it before putting it into the mouth. One has the comfortable feeling that an instrument subjected to the corroding influence of bichlorid, and then wiped so thoroughly that it does not corrode is at least mechanically cleaned, even if the action of the germicide might be questionable in so short a period of time.

In using instruments upon the soft tissues, and upon the bony structures I take the additional precaution of an open flame, because even if there be damage to the temper of the instrument it does not seriously unfit it for use in this manner.

The care of the necks of the teeth and that most obstinate affection at the gingical margin known under the various names of pyorrhea alveolaris, Rigg's disease, phagedemic pericementritis, etc., on through a variety of different appellations, each, however, signifying a chronic suppurative inflammation of the periosteum accompanied by an inflamed condition of the gums, and more or less affection of the alveolar process.

Undoubtedly there are constitutional predisposing conditions which are largely responsible for the frequency and obstinacy of this trouble, but there seems to be such a diversity of opinion and so many different constitutional disorders are given as predisposing causes that we are forced to the conclusion that the subject is but little understood; for instance, some writers put it in the category of bone diseases,

others ascribe its cause to wasting diseases, while rheumatism, gout, scrofula, malaria, tuberculosis, rachitis and a host of others have each been brought forward as the cause. Some investigators claim to have proven it to be the result of a specific bacterium, and to have separated pure cultures which in turn would produce a similar affection in animals, from which again pure cultures of the same bacteria were obtained; but biologists do not agree upon this point, notably, Miller who has been unable to get the same result with his experiments and who questions the correctness of others' claims in this direction; therefore, in view of its doubtful origin, we can only be safe in recommending for general treatment any constitutional defect that may be present as a precautionary measure, and then apply ourselves to the local sources of irritation.

Tartar about the necks of the teeth is the first step; then a careful following down of the denuded portions of the roots, and as thorough a cleaning as possible of the rough little deposits of sanguinary calculus nearly always present.

This is a matter of great difficulty, and its failure is probably the most common cause of recurrence of the disease.

Many instruments have been devised for the purpose, but none that I have used has given me such thorough satisfaction as small excavators ground flat. They can be prepared in a moment with a corundum disk in the engine, so that we have always at hand a scaler so small that it can be passed along the side of the root to the very end of the pocket with the least possible pain and laceration of the gum, besides being so sharp that the slightest sensation of roughness would be recognized by the fingers of the operator in a manner that would not be possible with a less delicate instrument.

In the application of local remedies three properties are necessary; antiseptic, acid and astringent.

Antiseptic because bacteria are always present, and to dissolve the particles of lime salts that may have and always do escape the mechanical cleansing; astringent, to reduce the inflammation and constrict the relaxed gum tissues. Hydrogen peroxid is a valuable wash for the purpose of syringing out the pockets; it destroys the pus, and at the same time acts upon the limy deposits in a most cleansing manner by reason no doubt, of the hydrochloric acid, which the preparations on the market have been found to contain. Dilute sulphuric acid, the aromatic preparation of sulphuric acid, the essential oils, and other remedies of a like nature are recommended. Pyrozone is also very highly spoken of.

Unfortunately my supply of rabbits and guinea pigs has been somewhat limited, and I have therefore been obliged to confine my experiments to the pig in a higher state of development, according to the idea of the comparative anatomist.

During the last four years, since my residence in Duluth, a great deal of this trouble has come under my care for treatment; either because it is of a catarrhal nature and the situation at the head of Lake Superior is particularly favorable to its development as to all catarrhal affections, or because having been constantly looking for it, more cases have come to my notice; but whatever the reason it has appeared in every stage of development, apparently in much larger proportion than in my practice in other localities. The conclusions which I have to offer are therefore of an entirely practical nature.

First, in regard to its so-called incurability by reason of its relation to so-called constitutional causes.

My most obstinate cases have been almost invariably persons of robust stature in whom apparently all of the predisposing constitutional affections were wanting, whose teeth gave little trouble from caries, every indication pointing to good structural development, and a healthful general condition.

A typical illustration of this class is a patient who came under my care in January 1889, age 44 years; temperament a combination of bilious and sanguine; well developed chest, good circulation, good digestion, regular habits, a vigorous active business man; never had been seriously ill in his life, no catarrh of nose or throat, no rheumatic tendency, no skin disease, nor did a history of his case develop that any of his family had ever been, to his knowledge, affected by rheumatism, syphilis, scrofula, rachitis, or tuberculosis; and a most thorough examination of his urine failed to show any normal condition pointing to Bright's disease or anything of that nature. Constitutional search abandoned, the examination of the arch gave but little better promise; the teeth were large with perfectly developed crowns, each as nearly in its proper position as possible, the occlusion of the jaws correct, except where the affected teeth had elongated as a result of the disease; not a carious tooth among the number; all in place except the left superior third molar that had fallen a first victim to the disease; there was some accumulation of tartar, and its usual accompaniment of other deposits; the buccal roots of the right superior second molar were denuded their entire length as shown in Fig. 1. A loose flap of gum remained upon the buccal side of the first molar, as in Fig. 2, but examination showed that the pus filled pockets extended almost to the end of the root. The gums about the necks of the other teeth showed more or less pus upon pressure.

Treatment was continued at regular intervals for a period of two years, an antiseptic mouth wash prescribed and used regularly one or more times each day; the pulp canals of the two molars were cleaned and filled, for the continued formation of pus had finally reached the ends of the roots and destroyed the connection there; the pockets and necks of the teeth syringed with antiseptics, the loose gum removed by use of the lance, and by absorption, until both molars had buccal roots denuded.

The first sign of improvement was a cessation of the discharge from about the necks of all the other teeth, and finally it was checked about the molars, and all around the edge of the gum at the line next to the affected molar roots there appeared what seemed to be a line of brighter colored new granulations.

I still see the patient every five or six months, and he continues the use of the wash, but apparently there is no return of the pyorrhea.

We have all of us had many such cases, and I have only gone into detail at the risk of wearying you, because it particularly illustrated some points I desire to call attention to.

We have seen that all ordinary methods of discovering constitutional predisposition failed, and the fact that the case yielded finally to local treatment would seem to indicate the cause as a local one. We know that the contagion theory is not borne out by

the transmission by contact from one person to another, for if it were, undoubtedly husbands and wives would both be affected commonly instead of very seldom as reported, and yet, notwithstanding all this, I have under my care the two daughters of this patient, aged respectively twelve and fourteen years; they have each had quite severe inflammation of the gums, and quite recently I cleansed a pus filled pocket at the neck and palatal root of a first molar in the mouth of the younger one.

Pyorrhea can undoubtedly be held in check and with continued proper care be prevented from reappearing, but whether or no it can be entirely cured as is claimed by many, is a question not easily answered, because once severely attacked, even though the discharge be stopped, the parts never again regain that normal condition which should make them impervious to their destructive surroundings, and it is certainly a questionable difference whether a recurrence of the trouble be from the original infection or a fresh one; therefore I hold that just so far as a condition of self-cleansing surfaces can be restored, in that proportion only can the cure be estimated; to this end, therefore, I recommend (notwithstanding instruction from high sources to save the gum margins) the removal of loose flaps of gum covering the pockets as in Fig. 3, for I do not believe that they can ever be made to attach themselves to the separated surfaces again, and must of necessity afford a lodgment for infectional influences.

The loose teeth should be banded to firm ones, and the irritation of their movement in the sockets thus removed ; also the occluding surfaces ground down until the excessive strain due to elongation be obviated.

The one final injunction before passing the subject, is to urge the importance of going to meet this trouble—not waiting until the pus filled pockets are thrust upon us. Part of my regular examination is a pressure of my finger upon the gums inside and out all around the mouth, and it has been a matter of surprise to me how many of the apparently unaffected cases showed that light colored exudation, not pus but its almost certain forerunner.

This is the stage at which pyorrhea may certainly be cured, and to use a little Hibernian mode of expression, the best time to cure it is before it has begun.

In taking up the subject of infections from gangrenous tooth pulps, and alveolar abscess, one is confronted by a most appalling array of dangerous possibilities; however, as the subject of this paper was suggested to my mind by a point raised in conversation with a prominent physician, I will quote his remark and then discuss from that standpoint. He said: "I believe in saving teeth and all that sort of thing, but it seems to me that dentists are too anxious to save teeth, and put on crowns to preserve roots that afterwards cause serious trouble and are an injury to health instead of a benefit."

The undeniable force of this statement as generally applied struck me, and a perusal of medical literature showed, in almost every instance, wherever the general practitioner entered upon a discussion of diseases associated with the teeth the same idea governed his reference to the treatment of the mouth.

My answer to the above, was a messenger next day who brought the doctor in to see abscessed teeth treated, and some carious bone removed. I think he left convinced that correct surgical principles were applied in the mouth as elsewhere, and now my answer to general writers is the bringing forward of well-known methods here urging their general distribution, that our best efforts may not be so often impeded by the suffering endured, and the serious complications that so frequently ensue before the dental practitioner is finally sought for relief.

Miller speaks quite bitterly of the custom of many physicians to disregard dental diseases altogether as a factor in pathology, and says it is as unjust to their patients as it is "discreditable to their profession," but I do not agree with censure of the physician; the fault lies among dentists, and there is where it would please me to apply the spur.

A gangrenous tooth pulp may be removed, the tooth canals disinfected by thorough drying with hot air, or a heated wire, and the use of antiseptics, preferably one that is not a coagulant (I use oil of cassia) and the danger of further infection removed, but when an apical abscess has formed such as is shown in Fig. 4, the destruction of the pus sac and the removal of the surrounding alveolar process as well becomes necessary.

An incision through the gum, followed by free use of a bur in the dental engine, quite readily effects the removal of the diseased tissues, then by enlarging the opening through the end of the root from the inside, medicaments injected into the opening in the crown can be freely forced through the end of the roots, and forced out through the gum, thus washing the entire affected surface perfectly clean.

A tooth thus treated is almost quite as completely under control as if it were extracted and in the hands of the operator, so far as cleaning it is concerned, and if the roots be immediately filled the wounded surface will heal up as readily as a simple cut.

Even the most chronic cases that have resisted other methods for years will yield to this treatment, provided however, there be enough of the periosteum alive, but of course the destructive processes sometimes include also the entire surface of the periosteum, and the root being entirely dead, nature will not tolerate it, and her efforts to get rid of its annoyance will be continued.

A few fragments of necrosed bone are all that was left of that portion of the superior maxilla on the right side, extending from the central incisor to the tubercle, including the floor and part of the outer wall of the antrum, as well as part of the palatal process from the mouth of a young woman who suffered some three weeks before I saw her.

Removal of the necrosed bone, and the teeth in that region with it, the application of the engine, and a large bur over all the roughened edges, washing with peroxid of hydrogen, oil of cassia, and equal parts of peroxid and bichlorid of mercury 1-1000 gave almost immediate relief. A tonic was prescribed (for a slight formation of pus upon one of her thumbs gave reason to fear, as did also her color, that there was danger of pyemia), and also an antiseptic mouth wash, with instructions to use the latter freely. A rapid healing of the parts followed.

For three months a poor unfortunate was kept in one of our hospitals with a fracture of the lower maxillary that refused to unite. When he came to me there were three fistulous openings in his neck, just below the angle of the jaw, into which the Sister

of Charity packed cotton in masses as large around as my fingers.

The fracture had occurred by reason of a blow from some heavy instrument—the man had been slugged and robbed—and search proved at the same time the pulp of a lower molar had been destroyed. Its removal, together with a portion of necrosed bone, syringing as in the last case, and in a few days the patient was discharged as cured.

Of very common occurrence is the infection of the maxillary sinus from apical abscess.

Many cases of so-called catarrh of the nose, throat and ear passages have had their origin from this cause, and have been cured by treatment from the mouth in the following manner, viz: removal of the source of infection by extraction, or treatment of the tooth, and a free opening made through the floor of outer wall of the sinus, as low down as possible, to give better drainage and to allow therapeutic cleansing by forcing medicaments out through the communicating opening into the nose, and with the head thrown back let them run down the throat until they thus reach almost every portion of the exposed surface of the mucous membrane.

I believe it will soon be considered the correct method to open into, and treat through the sinus, every case of chronic catarrh of the nose.

The same lining membrane must and does transmit the infection to the antrum; the offensive secretions thus formed are held as in a pocket where the usual treatment through the nasal passages can not reach them; what more natural, then, than the treatment described above?

No need to cite cases from practice of diseased antrum, we have all had too many of them, but I have given great relief in a number of instances where no purulent suppurative condition of the antrum was present, simply by the direct effect upon nasal catarrh that seemed to be otherwise incurable. One of my patients recently came to me in an extreme state of exhaustion, the constant presence in his throat and stomach of the discharges from his nose had prevented his eating or sleeping for some days and nights; relief was immediate, in fact, while he was still in the chair; and he made a business of eating and sleeping for some days afterward to make up (as he said) for lost time.

Peroxid of hydrogen I use until the passage into the nose is opened up and after it a strong solution of salt and water is quite sufficient and very safe. Thorough drainage, however, is the most important step.

Syphilitic necrosis and lesions of the soft parts of the mouth require in addition to the surgical and antiseptic local treatment, the internal administration of iodid of potassium, and mercuric bichlorid for which, together with a proper general treatment, I always recommend them to the physician, knowing full well that we can each of us do better for the assistance of the other.

The presence of bacteria in such great variety and number in the mouth at all times must be looked upon as a menace, not only to the teeth in their relation to dental caries, but through their action as well upon the mucous membrane, in rendering it more susceptible to the germs of specific diseases, fevers, etc., upon the digestive tract, for many complaints of the stomach and intestines have been found to be caused by mouth bacteria and their waste products. Even the lungs are subject to this influence from the mouth, therefore its thorough disinfection becomes at once a matter of first importance.

Recognizing this fact, Miller, Black and others have prepared most carefully comparative statements of the strength of the various antiseptics used.

Miller particularly, has demonstrated that the rapid use of the ordinary antiseptic wash, unless accompanied by thorough cleansing is of comparatively little benefit, because at least several minutes are necessary to sterilize particles of food lodged between the teeth.

He recommends the following formula as one having the most rapid action:

℞ Acid thymic 25 grams.
Acid benzoic 3. grams.
Hydrargium bichlorid 80 grams.
Tinct. eucalyptus 15. grams.
Alcohol absolute 100. grams.
Oilgaultheria qt. xxv.
℥.

Black's one, two, three mixture is:

℞ Acid carbolic i.
Oil cassia ii.
Oil wintergreen iii.

The wash that I have for some time past given to my patients is:

℞ Listerin.
Glycerin.
Acid carbolic.
℥. Sig.: Dilute one-half teaspoonful in one-third glass of water, brush on the teeth and gums; hold in mouth and use on silk between teeth at night.

I give instructions to use full strength on the silk; in cleansing the mouth to hold it, and continue its use for several minutes consecutively.

This wash and the manner of using it has given my patients great satisfaction, not only as a means of checking tendency to caries, but also in fevers such as typhoid, by relieving the unpleasant accumulations of mucus, and I believe has exerted an influence toward obviating the deteriorated condition of teeth, which almost invariably follows this class of diseases.

A physician who had noted its effect upon one of his patients got the prescription from me, and now uses it regularly in his practice.

The day is fast approaching when the treatment of the oral cavity will be a battle with therapeutic remedies rather than one of mere mechanical skill, and if I have seemed to give undue emphasis or wearied you with too careful note of little things, let me excuse myself with the honest statement that nothing in my professional experience has given me so much encouragement, so lifted me above the daily grind of bread-winning, or made me feel the great possibilities that are before us so keenly, as the bringing to light of some hidden source of trouble that perhaps for years had caused pain and distress, and being the instrument for its relief, and this can only be accomplished by looking for the little signs that have escaped notice by reason of their deceiving insignificance.

Surely 'tis an honest payment upon the indebtedness of our creation, and after all makes life seem worth the living.

DR. EDGAR PALMER spoke of a new tooth powder recommended to him by a physician for morbid conditions of the mouth, such as spongy conditions of the gums and fungus

growths. The powder was quinin and Dr. Palmer asked those present if they thought there was anything in it.

Dr. Talbot said there were three distinct conditions which were called pyorrhea alveolaris, and properly so-called too, as each was shown by the flow of the pus from the alveolaris. The first was Riggs' disease, which results from deposition of tartar upon the teeth below the margin of the gums. The second is the condition described by Dr. Ingersoll, characterized by the deposit of sanguinary or serumal tartar and the third, of which variety I have cases at present, is a disease of the gums only, with no particle of deposit. I wish to bring out the necessity for systemic treatment for these cases. Unless the condition is good the disease will not be cured, and if the general system after the cure of the local disease is attacked by gouty, rheumatic or renal trouble the condition of the teeth will return.

We, as dentists, do not pay the attention to the mouths of our patients which we should. It should be the rule to always examine thoroughly every mouth in which we have to do anything and treat and clean it, putting it in a thoroughly healthy condition. This is a very important part of our work and we should get paid for it, otherwise we can not afford to do it. When a patient comes to me, where pockets are observed along the margin of the gums, I remove the tartar from the teeth and saturate the gums with clear tincture of iodin. After the second day, I thoroughly overhaul the mouth and proceed with the treatment as recommended by the essayist. If, however, the teeth are loose, I can not treat successfully, except by removing the teeth. With the teeth extracted, it is a simple matter to heal up the gums and keep them in a healthy condition.

Da. A. M. Benson asked how the iodin healed the gums?

Dr. Talbot said he did not know how, but knew that it did. He said that it was generally known that iodin would reduce tumors and swellings in all tissues, but we do not know how it acts.

Dr. Benson thought that if the teeth and gums were freed from all foreign substances the healing would come without medication.

Dr. Talbot said that in cases where there was no tartar on the teeth it was often possible to cure by systemic treatment, and spoke of cases in his own practice which he had successfully treated by building up the system, omitting all local treatment.

Da. W. A. Gudex said that Riggs' disease was perhaps the most puzzling and least promising of the troubles which dentists were called upon to treat. It might be described as an ulcerative pericementitis; sometimes the result of mechanical irritation, sometimes he thought the result of lead poisoning. He had noticed it in painters who had suffered from lead poisoning. He could not boast of much success in treating it. The only radical treatment was to remove the tooth or teeth affected.

Dr. J. Taft said that the treatment of diseased gums was very difficult, but he thought the treatment pointed out in the paper was suitable for a majority of cases. In many cases the general system is in such a state that it is impossible to cure the local disease without systemic treatment; the system must be toned up. In other cases the general condition is so hopelessly poor and defective that it can not be brought up to a state in which there would be hope of success. In such cases the only thing to do is to extract. Then there are cases where the general system is so good, is so well nourished, and has such recuperative power that if the irritant be removed the part will cure itself. Remove all necrotic tissues either by an instrument, or by an escharotic, or by some other remedy such as iodin or peptin; these seem to break down the necrotic substance and to stimulate the circulation which carries off the broken down, useless tissue. It is necessary to remove everything which will be an injury or an irritant. Simply pressing the finger on the part several times a day will be beneficial, as the pressure drives the blood away, and upon relieving the pressure there is an influx of new blood and an increased circulation which will help to carry off the diseased matter.

Robinson's remedy acts well as an escharotic, and if used as directed will prove efficacious in a large majority of cases. A dentist should always know just what effect he should expect from every remedy he uses, and why he uses the particular substance to effect the purpose.

Dr. Vida A. Latham spoke of the structure of the peridental membrane, and said that it had never been properly described. She denied that there was such a membrane, but said that it was the same as the periosteum, and said that there was no reason, just because it ran over the root of the tooth that its name should be changed. The description in the text-books of this membrane vary; some say that it is an elastic membrane and others describe it as a ligament; she thought it showed careless writing in the books when they varied so. She thought a good name for pyorrhea alveolaris would be osteo-periostitis, meaning an inflammation of the bone and tissues surrounding the bone. These affections do not differ from similar inflammations in other parts of the body. Whenever found they are very hard to treat, as they usually occur in persons of poor organization, whose vital force is low and recuperative power almost nothing. In such cases the very structure of the bone is poor.

Dr. G. V. I. Brown said that his purpose in describing the case in his paper was to bring out discussion, as the case was one of perfect physical health, and he also wished to call the attention of the members of the Section to the fact that the daughter of the patient was troubled with the same disease, showing or appearing to show, that heredity was a factor in some cases.

SHALL THE PRACTICE OF MEDICINE AND THE PRACTICE OF PHARMACY CONTINUE DISTINCT AND SEPARATE?

Read in the Section on Materia Medica and Pharmacy at the Forty-fourth Annual Meeting of the American Medical Association.

BY J. M. GOOD, Ph.G.
ST. LOUIS, MO.

By giving a place for the discussion of problems in pharmacy in this organization, the intimate association of the two callings and their mutual dependence upon each other is emphasized. Yet it is scarcely to be expected that our sessions will be the ones most numerously attended. Those in both professions whom we delight to honor are they who confine themselves strictly to pharmacy, pure and simple, or to the practice of medicine, general and special. Nearly every physician has been made painfully aware, some time in his career, of his lack of pharmaceutical knowledge; hence we hope none will feel the time spent here has been wholly unprofitable.

Materia medica, as the pharmacist studies it, is different from that which is taught in the medical schools, and while we are likely to get hints here as to the therapeutic actions of drugs, they will serve simply as a warning for us to confine ourselves to compounding, and let those better able to judge and discriminate take the responsibility for the effects of drugs. In discussing some problems in which our two professions are interested, I am not unmindful of the fact that those whom I am about to criti-

cise do not attend conventions and to a great extent they are indifferent as to our opinions of them.

In this Section we, physicians and pharmacists, meet on common ground, and we can be mutually helpful. We may criticise each other, but always in a friendly way, I hope, and we may ask and answer questions to the edification of all.

It is too frequently the case that a man's readiness to give advice on any subject is inversely to the amount of knowledge which he possesses in regard to it. This seems to apply particularly to persons who are ready to give information about the action of remedies and the treatment and care of the sick.

Just now there is in the professions of medicine and pharmacy a disposition on the part of each to usurp the functions of the other. This is not the case, however, with the busy or successful man in either calling. He whose time is fully occupied is not likely to suspect any one of invading his field.

The exhibition of remedies is attended with a considerable degree of uncertainty at best. To know definitely the therapeutic action of drugs requires clinical experience with careful and intelligent observation at the bedside of the sick.

Accurate diagnosis must precede these. It is a weighty responsibility which rests upon the physician. Fortunately for him, as his stock of experience increases and his years multiply, he realizes these facts more forcibly than in the beginning.

For the druggist who recklessly and ignorantly assumes these responsibilities he has ill-concealed contempt. To his credit be it said he is willing to concede to the druggist all that he asks for himself, and he is just as prompt to condemn that foolish and dangerous legislation which assumes that the holder of a medical diploma is necessarily a person who, if not an expert and skilful manipulator of drugs, may safely be intrusted in compounding and dispensing them. The absurdity of such a claim is so apparent as generally not to admit of argument. Aside from the injustice of this to the entire business and profession of pharmacy, there is the additional damage to the colleges of pharmacy. They should be strengthened, not weakened. It is the duty of each profession to uphold its educational institutions. We can not, then, with complacency see the right to legally conduct a drug store conferred upon a man who has never served a day's apprenticeship in the business, when a period of four years of active service is required before a diploma from a reputable college of pharmacy will be granted. The easiest and shortest way to legal recognition is the one which will be adopted by the majority; the acquisition of knowledge is not a controlling influence with them.

Shall there continue to be the two professions, medicine and pharmacy, or only *one?*

If physicians convert their offices into dispensaries, and druggists, seeing their trade melt away, qualify as practitioners and add consulting rooms to their places of business, the dividing line will be obliterated in a generation.

This is retrogression; it is degeneracy. It is opposed to the natural tendency toward the division and distribution of labor and the segregation of all classes of workers into specialists. It is discouraging, it is demoralizing; and it seems to me some action by this Section calling attention to the situation, would be timely and in order. I do not forget that this is the AMERICAN MEDICAL ASSOCIATION, and any steps taken should be such as would be approved by the conservative members.

Shall physicians dispense their own remedies; or shall the practice which has prevailed now for several generations of having the compounding done on order outside of the office, continue?

As I have already said, the busy practitioner is most likely to call the druggist to his aid. It will probably be said that the labor from which the old-time doctor was so glad to be relieved has been overcome by the modern methods in the manufacture of pharmaceuticals. How dainty, delightful, convenient and *cheap* are the tablet triturates for instance. Let the disciples of Hahnemann beware. Their occupation will soon be gone. *Similia similibus curantur* has ceased to be their strongest card. Sydenham, in his enthusiasm over what might be expected from the potency and convenience of the alkaloids, predicted that the time would come when a physician could carry around with him, in the head of his cane, all the remedies that he needed. His dream is not likely to be realized, for we have long since learned that the therapeutic action of a drug is very different from that of any one or several of its alkaloids.

Seeing this tendency on the part of physicians to do their own dispensing, it might be said that the wide-awake druggist will rise to the occasion and advertise his store as a "physicians' supply house." In time that may be all that will be left for him. At present, however, he is likely to have his triturates left on his hands, a perpetual reminder of mistaken enterprise.

It is impossible, as yet, to "meet all the indications" with these little tablets, and Dr. Saccharum Lactis, so long as he is obliged to send me an occasional prescription, will obtain his supplies through some other channel. But I am told that the triturates alone do not occupy the field. Hypnotics, alteratives, emmenagogues and rejuvenators multiply almost indefinitely. The habit of studying cases and selecting single remedies is becoming impracticable and polypharmacy again prevails.

"Physicians' supply" houses may or they may not turn out products which are accurate and reliable. The dispensing physician, unless he be a druggist, will naturally use the "ready-made" prescriptions.

Many who do not dispense justify the habit of ordering them on the plea that they are more skilfully prepared than will be the extemporaneous prescription in the average drug store. It is in order for pharmacists to question this. The "manufacturing pharmacist" can not monopolize either knowledge or skill. The manager of the establishment is seldom a manipulator of drugs, and often the assistants have placed upon their services a very low pecuniary value. I do not say this in a spirit of condemnation, but to show that in the use of such preparations there is not the universal safety which some suppose. For the most part they are not dangerous, since in the manufacture of the so-called "elegant" pharmaceuticals there has not yet been discovered any way of disguising disagreeable drugs that is so successful as omitting a large part from the mixture. To any one having the best interests of medicine and pharmacy at heart this state of things is not gratifying. Druggists who by years of faithful labor

have established a reputation will not be seriously affected, but the inducements for others to come forward and take their places are growing small by degrees and beautifully less. The following, quoted from a circular recently received, is a good example of the claims of superior skill which are often made by the mixers of proprietary remedies:

An elegant preparation, in powder form, resulting from the union of salol and acetanilid, skillfully combined with an alkali, which, with the *peculiar method of compounding*, greatly modifies and positively improves the therapeutic effects.

In point of quality, as a *fine and scientific* pharmaceutical product, this preparation is surpassed by none. The *chemist* properly *apportions the ingredients* and the elements are combined by *positive chemic* laws, that always produce perfect and uniform results. This careful method is observed that the greatest possible therapeutic benefits may be derived from the union of the composing elements, and a *peculiar* and entirely *new*, therapeutic agent is the result. The proprietors spared no *time, labor* nor *expense* that they might present to the medical profession a *perfect remedy* in its class, uniform in strength and action.

In comparing the claims of this with similar preparations in the market, we invite the particular attention of the profession to this fact: we state positively what it is made of. We do not refer to coal tar derivatives in any mysterious or indefinite way, but state plainly that acetanilid and salol furnish the active elements.

Will the physicians who prescribe these remedies, and the patients who afterward recommend them to their friends and purchase them without prescriptions, never learn that it was to make money and not to benefit mankind or alleviate their sufferings that actuated their originators?

By the aid of these conveniences in the shape of ready-made prescriptions, triturates and mixtures of various antipyretics the labors of the advertising specialists are made easy and, much to the injury of both physicians and druggists, the free dispensaries multiply.

It will be maintained by some, perhaps, that the druggist has only himself to blame for his vanishing business, they claiming that either by his practices or his incompetency he has forfeited the confidence of the medical profession. We must ask for a "stay of judgment" in this matter. Do not condemn all or any considerable part. It is allowable to discriminate against dishonorable, dishonest and incompetent men wherever we find them; they are as likely to be found in the pharmaceutical profession as elsewhere, and no more so. According to my observation, pharmacists are as a class, careful, painstaking and well qualified to stand where they are often needed, between the prescriber and the patient.

We are all fallible, and every man, some time in his life, will probably be obliged to acknowledge his responsibility for errors. The blunderer and the possible victim are alike fortunate when some one stands between them. This is possible only when the prescriber and the dispenser are two persons.

SELECTIONS.

Too Many Medical Societies.—We are suffering in this country from too many medical societies. The recent meeting of the Northeastern Ohio Medical Association in this city was a good illustration of the amusing phenomenon of the city specialists reading papers to the country practitioners without the presence of the county practitioners. While many of the district medical societies in Ohio are doing good work and are most creditably conducted, yet it must be conceded that these societies are conducted and supported to the detriment of the county and State societies. It is also a lamentable fact that some of these societies are directly and openly antagonistic to the local and county societies, and thus do great harm. Another phase of this tendency to create innumerable medical societies was the recent second annual meeting of the Ohio State Railroad Surgeons, in this city. The meeting was announced with a great flourishing of trumpets and a most formidable appearing program covering three days. Notwithstanding all the newspaper notoriety and other advertising, only a handful of railroad surgeons was present, and all the business of the meeting was transacted and papers read in two short sessions. But this is only an example of the tendency to form district, State, tri-State, National, and every other possible excuse that can be thought of to organize new societies. The men who organize and run and get all the eclat and offices and free advertising from these societies, are not as a rule, the men of real scientific ability, and not usually the men who are respected by their fellow-workers at home. In fact, they are too often the men who are in bad odor and who do not hold the esteem and respect of those who know them best, and consequently are obliged to go away from home, where they are not known, in order to secure these positions of honor. Not infrequently these men manipulate the State and National organizations for their own purposes, as long as possible; and when they are found out and turned down, they go off and organize a new society. And the pity of it is that the respectable, well-meaning, intelligent, scientific practitioners will go into these new organizations and lend to them a certain respectability; and, in fact, without the labors of these unselfish members of the profession, they could not and would not exist.

Consequently it is of great importance for every one to carefully investigate the claims for existence which every new society has upon the profession, before lending it support. If properly conducted, the county, State and American medical associations would fulfill all the requirements of medical organizations of a State or National character; and in larger towns, one or more local societies would meet all the necessities of the case. By dividing the work into sections, as is done in the large Eastern cities, many of the local societies might be dispensed with. As a matter of fact, the great bulk of the work will be done by a limited number of individuals, no matter whether there is one or a dozen local organizations. The same is true of district, State, tri-State and National organizations; but the disadvantage of having a multiplicity of societies is much greater in the larger bodies. It is becoming impossible for a man to attend all the medical societies he might wish to, as at present organized.—*Cleveland Medical Gazette.*

Georgia and Boards of Health.—We regret to perceive a spirit of opposition to a State Board of Health in Georgia, which is being manifested by some of the medical profession in our sister State. The line of arguments used in opposing the measure seems to be that it is the "duty" of the general Government to take charge of and defray the expenses attendant on an epidemic of any disease, thus relieving the tax-payers of the State. The *Notes* concedes this privilege to the general Government, and if we should get into a "tight fix" again, which we do not apprehend, we will have no backwardness in coming forward promptly to ask assistance. The statute law creating the State Board of Health of Florida provides for this emergency. But when the Marine Hospital Service assumes charge or assists the State or local authorities in the management of epidemic diseases

its work and aid is confined to the locality or localities attacked. The authority of the Government does not extend over the whole State, and we do not understand that it was even proposed that it should. As a sequence local quarantines, under diverse management and more generally than otherwise, with unreasonable restrictions, very seriously damage the commercial interests of the State and neighboring States, and at the same time do not render the slightest assistance in health protection. The benefits to be derived and which Florida has enjoyed from a State Board of Health have been those arising from a central control in health matters, covering every part of the State. Instead of a hydra-headed health government, as used to prevail—each town for itself—with power to produce, by irrational quarantines, incalculable damage to the neighbors through local jealousies, Florida has now one central guiding power in health matters—the State Board of Health, through which instruction in sanitation is distributed to the people and under whose authority alone can surveillance measures over travel be instituted. It is not alone in matters connected with epidemic disease that the State Board of Health of Florida limits or confines its operations. Vital statistics, the movement of the "life wave" of the State claims a large share of attention and close study. As yet no direct good results can be seen, but this will be better realized and more profitably enjoyed in a few years more, particularly as each twelve months sees additional improvement in the method of securing the desired data.

The *Notes* trusts that Georgia may be fortunate enough to secure from her Legislature the needed legislation for a State Board of Health.

We invite attention in this connection to the following remarks made by a distinguished member of the medical profession:

"Both in preventive measures that are going on at all times and in the management of an epidemic, a State Board of Health is essential; and the time is not far distant when a State without a State Board of Health will be as anomalous as a State without a system of schools or militia."—*Florida Health Notes.*

Larvae of Lucilia in the Human Ear.—The *Insect Life*, November, publishes two instances of reported larvae occupation of the ear, from the State of Washington. As the *locale* is rather unusual, being so far to the Northward, the correspondent takes pains to state that "both stories are well authenticated." The following are the chief points of medical interest in these two cases:

"A. B., a rancher and logger, while driving home from town one evening last week felt a bug or fly of some kind strike his ear and crawl in. He endeavored to remove it and supposed he had done so. A few days later his ear began to pain him, and he thought he could feel something crawling within. It became unbearably painful so he prevailed on a friend to pour the ear full of *turpentine*. The effect was magical. Twenty maggots came from the ear. A number of persons witnessed the exit of the maggots. Dr. Green was called and concluded that the fly had remained in the ear long enough to 'blow,' possibly, a score into the ear, though the man thought the ear perfectly well. The victim is recovering, and the hearing appears not to be affected."

The insect was probably the *lucilia macellaria.*

The second case, that of a lad working on a farm, is noteworthy on account of the alleged enormous larval colonization in his ear, and of the apparent efficiency of a very mild remedy.

"B. C. had been troubled with a painful ear for several days. After much persuasion on the part of his employer, the young man permitted the latter to examine his ear. He poured in some sweet oil, then took a straw and made a careful examination, after which he laid the boy on his side, and much to his astonishment about 150 maggots came out of his head and dropped onto the bench. The supposition is that a blow-fly had gotten into the boy's ear some time while he was asleep and the maggots had hatched out and crawled into his head out of sight, thus causing him much pain. The boy had worked hard during the hay harvest, and was not willing to consult a doctor, although after the above discovery he was persuaded to do so."

The pseudo-parasitic invasion in this case was probably by the *lucilia.* In earlier numbers of the same journal there have been reports of cases of a similar character, the treatment of which has been successful by the use of an infusion of tobacco and by instillation with chloroform. Failures, also, have been recorded there and elsewhere when any other than mechanical means have been used. Much must depend on the integrity of the drum membrane, whether the remedial agents can be satisfactorily applied or not, but this is a condition that is seldom made a part of the reported cases that come to us from the West and Southwest, where by far the greater number of cases occur in recent years. The use of oil of turpentine has been reported before, but we do not remember to have seen it recently. We would, a priori, judge that it would be a strong antagonist to larval life.

Mental Disorders in Diabetes.—The disorders occurring during diabetes in the centers of motion, feeling, and nutrition are well recognized, but mental disorders are hardly known. French authors principally have written concerning them Stanislaus Ierzykowski cites three cases of diabetes complicated with mental disturbances. In the first case there was melancholia with suicidal ideas, lasting about a year and disappearing when the patient became very weak, toward the end of the disease; in the second case there was mental debility, which temporarily improved in proportion with the decrease of the quantity of sugar in the urine; in the third there was considerable pruritus vulvæ with general uneasiness. In all three cases there was no hereditary influence. He also quotes a previously-observed case of epilepsy, which occurred suddenly, together with diabetes, at the sight of an epileptic fit; both the epilepsy and diabetes disappeared after one year's duration. The author also mentions one other case in which the quantity of sugar suddenly increased greatly under the influence of disagreeable emotion. Mental disorders in diabetes generally bear the character of intellectual depression or debility, and the cause of their development is not known.—*Nowing Lekarskie*, July and August, 1893.—*Universal Medical Journal.*

Four Cases of Trismus Neonatorum Treated by Tizzoni's Anti-Toxin.—Of four cases of tetanus neonatorum treated by Tizzoni's antitoxin, one was saved. In two of the cases the changes in the lungs (septic pneumonia) were such that they were properly considered as the cause of death alone. The fourth case presented such violent symptoms and such a high grade of infection that the injections were useless. In the first case treated, the dose of the antitoxin was much too small. The third case (the one which recovered) as well as the other three cases, there were evidences of septic infection. Antitoxin was twice injected in doses of 0.3 gm.

On the day after the second injection, the contractions ceased, the child was again able to nurse. There still remained, however, for several weeks spasms, and a moderate degree of trismus.—SEIFERT of Wurzburg, in *Centralblatt für Klinische Medicin*, November, 1893.

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SATURDAY, JANUARY 6, 1894.

THE SPELLING REFORM.

At the Annual Meeting of the American Medical Editors held in Milwaukee, the Annual Orator took up with enthusiasm the subject of the spelling reform. The orator was forcible in his expression, happy in his manner and persuasive in his style. The American Medical Editors present agreed then and there, that each would begin the use of the reformed spelling on his return to the editorial tripod. The vote by which this conclusion was reached was unanimous, a sure sign that it was taken without much reflection. That this view is the correct one there is much evidence, because the new spelling is seldom adhered to, and in many instances the practice has been made the subject of direct attack.

One of our valued contemporaries, from whom to differ is painful, says in an outburst of ridicule that the new spelling makes the English language "hideous," and that it is an attempt to make an American language, and he fully convinces himself that the Association of American Medical Editors were wrong, hasty and ill advised. This article has been copied into the columns of several journals, whose editors, if we mistake not, were represented at the meeting. The English language has always advanced by excision, and in the present movement we only hasten changes that our English brethren are sure to adopt sooner or later. To prove this, we need only to open some of the volumes on our shelves.

About the earliest elaborate book on surgery in English, is in black letter:

"The most excellent worckes of chirurgery, made and set forth by Maister John Vigon, head chirurgien of oure tyme in Italy, traunslated into Englishe. Whereunto is added an exposition of straunge termes and unknowen symples belongynge unto the arte.

"Imprynted by Edwarde Whytchurch wyth the Kynge's most gracious privelege for seven yeres. A. D. 1550."

In writing of furuncles, he says, among other things:

"When ye chaunge this playster, laye upon the sore this liquid cataplasma ℞ of the foresayde decoction ii–iii of the floure of barly and wheate *ana* 3i. Of comune oyle, of buttyre, of swyne's grece melted *ana* 3ij wyth the yolkes of foure egges, let them seeth all togyther except the yolkes of the egges," etc.

He then gives a long discourse on furuncles, and concludes the chapter with the following:

"This is our short curation of froncles whyche we haue oft prosued with good lucke. Thus we end the fyrst parte of the second boke; for which God be praysed and thanked."

Of Apostemes whyche chaunceth in the corners of the eyes: "It chaunceth often if a catharous matter descendethe from the brayne to the corners of the eyes and tarryeth there by reason of the concavitie of the place, and it is sone healed. But if it be not taken awaye quyckely, by pressynge the outwarde parte of the eye, it wyl come to a flegmatyke Aposteme." And again: "Whan ye perceyve that the Aposteme commeth to rypenesse (whyche thynge ye maye knowe by the reddenesse and beatynge whyche continueth wyth elevation of the parte, by reason of the quytture multiplied in the place, and lykewyse by the redormdynge and rysinge agayne, whan a man presseth thereon hys fiyngers, lyfting by one and thrustynge downe another) than it is conveniente in the rypest place wyth a sharpe lancette to open the sayde Aposteme."

"Neverthelesse, wee wyll adde one thynge whyche is that in the tyme of mundification the place may be mundifyed wythoute perturbation of the eye, putting in thre tymes in the weke a lyttle of oure ponder of mercurye whyche taketh away superfluous flesh withoute payne, and is written in our Antidotarye."

We also notice that arm is spelled "arme;" egg, "egge;" first, "fyrste;" third, "thirde." We doubt if those who are so shocked at the modern changes, would be willing to return to the primitive English spelling or even to restore "u" to the words "color" and "honor," or the final "k" to the word "music," as most of our English contemporaries now do. Only a few years ago somebody proposed dropping the final "me" from the word "programme," and although the change was bitterly opposed it was made.

If, as our contemporary suggests, the outcome of the spelling reform movement will result in an "American Language" let it come. It will be clearer, stronger and freer from incongruities than the composite language from which it sprung. It will be easier for the remainder of the world to read and understand, when its superfluous letters shall have been eliminated.

TAXING PROPRIETARY MEDICINES.

The Ways and Means Committee, of the House of Representatives, has recommended the restoration of

the tax on proprietary medicines. If to the tax, the printing of the ingredients on the label would be required, much could be accomplished in the interest of the people and the profession. In this way this subject is regulated in European countries. Some of the preparations have value, and can be used by the public with safety, while many of them are not alone dangerous, but worthless, and their sale is dependent entirely upon the fraudulent claims to cure everything, in their advertisements. In fact, if this advertising was stopped, they would find no sale, and just in proportion as it is pushed, are they sold. They appeal to the hopes and fears of the sick and afflicted, and it is the obtaining of money under the worst kind of false pretenses, and is really nothing more nor less than robbery. While Congress is engaged in this business, would it not be well to tax the itinerant practitioner and vender of nostrums, with show accompaniments? They go from one State to the other, and the question naturally arises whether this is not one of inter-state commerce, and should be regulated by Congress. It is the policy of this class of frauds not to stay too long at one place, or to return at too short intervals to the same place, for the reason that it takes time to secure a fresh crop of dupes.

THE HERZ CASE.

DR. CORNELIUS HERZ, the Panama briber, who has been wanted by the French Government, has been sick at Bournemouth in England for the last five months. It was claimed that his removal would result in death. The French Government pressed so hard for his extradition, that an English commission was appointed to examine into his condition, and a report was made to the effect that his removal might endanger life. Later, a French Commission, one of the members of which was BROUARDEL, was sent to Bournemouth to examine him. This Commission came to the same conclusion. A report of the results of this investigation was made to the Academy of Medicine of Paris, causing quite a sensation. Many of the members denounced the report, and to quiet matters it had to be withdrawn. Since, the French Government has given up the idea of extradition. Take it all together it is one of the most extraordinary cases on record.

DR. HERZ for a short time in 1870 was connected with the Chicago Board of Health as Sanitary Inspector. He was well qualified, of agreeable and insinuating manners; prompt and very aggressive in the discharge of his duties, with, however, too exalted an idea of himself and his position. He did not remain long, as the sphere for him was too limited. From Chicago he went to San Francisco, where he cut a wide swathe in his peculiar way. He was not satisfied with small things, and next we hear of him as one of the most prominent characters in Paris, and one of the prime movers in the Panama frauds. When exposure occurred, he fled to England where he has been since, a fugitive from justice, while some of his confederates have been punished. How soon he will now recover remains to be seen, as the French Government has evidently abandoned the further prosecution of the Panama suits. His career has been unique.

THE JOURNAL.

The JOURNAL this week is sent to very many who are neither subscribers or members, with the hope that upon careful comparison with other weekly medical journals they will conclude that however valuable those publications may be, and however admirable they may be in many, very many particulars, yet the JOURNAL OF THE ASSOCIATION owning allegiance to no publisher, to no manufacturer, owned only by the profession itself, and managed on that basis, is surpassed by none.

Whatever it is, the profession alone has the credit or the blame.

The following table gives the comparative statistics of the volume which closed with the last issue:

July 1, to December 30, 1893.	Journal Am. Medical Association.	N. Y. Medical Record.	N. Y. Medical Journal.	Boston Medical Journal.	Philadelphia Medical News.
Number of Original Articles . .	240	176	158	132	175
Number pages Original Articles,	665	334	380	300	397
Total number pages	1,024	860	816	660	756

"Comparisons," says MRS. MALAPROP, "are odorous," and we have no desire to use this table for any other purpose than to show our medical men what has been accomplished by their own JOURNAL, and to put a stop to the everlasting cry of inferiority, and covert attacks on our advertising business. The JOURNAL has come to stay. The members of the ASSOCIATION who were instrumental in founding it, are proud of it, for they have seen with pleasure its steady and regular growth from its rather slender foundation.

We by no means wish to imply that the JOURNAL is a finished production.

Quite the contrary. We believe that with the ASSOCIATION now fully awakened to the excellence of the JOURNAL, there has been created an interest that will cause it to begin a new and more extended sphere of usefulness. With the increase of membership will come the sifting process that has been asserted to be the chief need of the ASSOCIATION.

But, dear reader, look at the vast table of contents printed last week, and ask yourself which of the ASSOCIATION papers you would have omitted and which you would have abstracted. No! We assert

plainly and fearlessly, that the ASSOCIATION papers have never been better than those of this year, and that the Section officers have never been more thorough in their supervision.

That there is still room for improvement every one knows, but in this world there is room for improvement in almost everything, as the era of perfection has not yet been attained.

Let the members of the ASSOCIATION therefore, with renewed vigor apply themselves individually to the task of increasing the membership, conscious that in union there is strength and power, and that their reward is certain and not far distant.

RIGHTS AND LIABILITIES OF BOARDS OF HEALTH.

Boards of health and other like boards act summarily, and it has not been usual anywhere to require them to give a hearing to any person before they can exercise their jurisdiction for the public welfare. The reason for this is that the public health might suffer or be imperiled, if their action could be delayed until a protracted hearing could be brought to a termination. This, however, gives rise to certain very interesting questions. The Court of Appeals of New York, in the case of People v. Board of Health of City of Yonkers, decided Nov. 28, 1893, has carefully considered the subject, both with reference to the interests of the public and the rights of property owners. The conclusions reached by the court are very instructive, and are said to have the support of the best reasons and of ample authority.

First, the court says the question may be asked, How can statutes conferring powers upon boards of health to interfere with and destroy property, and to impose penalties and create crimes, stand with the Constitution, securing to every person due process of law before his property or personal rights or liberty can be interfered with? The answer must be that they could not stand if it were necessary to hold that the acts referred to made the determinations of the board of health, as to the existence of nuisances, final and conclusive upon the owners of the premises where they are alleged to exist. Before such a final and conclusive determination could be made, resulting in the destruction of property, the imposition of penalties and criminal punishments, the party proceeded against must have a hearing, not as matter of favor, but as matter of right; and the right to a hearing must be found in the statutes themselves.

Boards of health, under such statutes, can not, as to any existing state of facts, by their determination make that a nuisance which is not in fact a nuisance. They have no jurisdiction to make any order or ordinance abating an alleged nuisance unless there be in fact a nuisance. It is the actual existence of a nuisance which gives them jurisdiction to act. Their acts declaring nuisances may be presumptively valid until questioned or assailed, for the same reasons which give presumptive legality to the acts of official persons.

What operation, then, does an order or ordinance of a board of health have under these statutes? The nuisance actually existing, and the jurisdiction having been regularly exercised, the order or ordinance has all the operation and effect provided in the statute, and the persons who abate the nuisance have the protection which they would not have as private persons abating, not a private nuisance especially injurious to them, but a public nuisance injurious to the general public.

It may be said that if the determination of a board of health as to a nuisance be not final and conclusive, then the members of the board and all persons acting under their authority in abating the alleged nuisance, act at their peril; and so they do, and no other view of the law would give adequate protection to private rights. They should not destroy property as a nuisance unless they know it to be such, and, if there be doubt whether it be a nuisance or not, the board should proceed by action to restrain or abate the nuisance, and thus have the protection of a judgment for what it may do.

It may further be asked, What, under this view of the law, is the remedy of the owner of property threatened with destruction or actually destroyed as a nuisance? He may have his action in equity to restrain the destruction of his property if the case be one where a court of equity under equitable rules has jurisdiction, or he may bring a common law action against all the persons engaged in the abatement of the nuisance to recover his damages, and thus he will have due process of law; and, if he can show that the alleged nuisance does not in fact exist, he will recover judgment, notwithstanding the ordinance of the board of health.

THE PROVINCE OF EXPERT TESTIMONY.

A clear exposition of the province of expert testimony is made by the Supreme Court of New Jersey in Koccis v. State, just reported. In this case, attempt was made to prove that a foreigner who spoke broken English could not use certain English words attributed to him, nor words of the same purport and meaning. This, it was held, was not a subject for expert testimony. The testimony offered, if admitted at all, the court said, would be received not as an expert's opinion, but because it came within that class of cases in which a witness may state the inference drawn by him from facts within ordinary knowledge occurring in his presence.

Familiar instances in which testimony of this kind may be given, the court says, are: whether two people were in love; whether a man was sick, or dazed, or despondent, or drunk; whether a dog was

savage, or a horse gentle,—and, in general, any matter touching physical or mental manifestations or appearances, as well as all questions of identity, resemblance, duration, distance, dimension, velocity, noises, smells and many other matters where the inference drawn by an observer is commonly recognized and received as an equivalent for the congeries of facts that produce it. But testimony of this class, however, so far from being related to expert proof, rests upon diametrically opposite grounds.

The expert witness is one whose possession of special knowledge renders his opinion admissible upon a state of facts within his specialty, without regard to the manner in which the facts are established, and without requiring that they should have come, in whole or in part, under the personal observation of the witness; whereas, the sole ground upon which a witness may give an opinion as to matters of ordinary knowledge is that they not only came within his personal observation, but that they come into proof so blended with the opinion to which they give rise that it is receivable in proof as a substitute for a specification of the host of circumstances that called it forth.

A failure to observe this distinction results, at times, in the offer of an ordinary witness to give an opinion calling for special knowledge, merely because he has had actual observation of the facts, and at other times in the offer to prove an opinion upon a matter of ordinary knowledge arising from assumed facts, by a witness who has not himself observed them, upon the ground that he is expert upon the special subject. In either of these classes of cases the proof must be rejected; the rule being that mere opportunity will not change an ordinary observer into an expert, and that special skill will not entitle a witness to give an expert opinion when the subject is one where the opinion of an ordinary observer is admissible, or where the jury is capable of forming its own conclusion from facts susceptible of proof in common form.

PHYSICIANS CAN NOT TESTIFY.

The policy of the law is to make the relation of physician and patient confidential and sacred. Only the patient himself, or, in case of his death, his legal representative, may waive the seal of secrecy and confidence. Thus holds the Supreme Court of Indiana, in the case of Gurley v. Park, decided Nov. 23, 1893. The application given to this doctrine here is to the effect that in a case where there is no legal representative, as administrator or executor of a deceased person to make waiver, the physician who attended her can not testify in an action to set aside her will as to her mental condition at the time she made the will, he being present in his professional capacity. The law, this court says, forbids the physician from disclosing what he learns in the sick-room, no matter by what method he acquires his knowledge.

CHOLERA.

Cholera seems to be again on the increase at St. Petersburg. The average number of cases for the past week have been 150, and the deaths 20 daily. On December 23, the British steamer *Eton*, from Sovlina, at the Danube's mouth, for Rotterdam, was detained at Gravesend for twenty-four hours for fumigation and examination. There have been three cases of cholera aboard her. The man who was stricken last had recovered on December 13. Cholera has again broken out at Liege, where it was supposed to have been stamped out.

SICKNESS AND PAUPERISM.

We invite our readers' special attention to the paper of DR. BRYANT of Cambridge, which appears elsewhere in this issue, and to the discussion thereon.

No topic could be more timely, and the experience of the writer is such as to invest his utterances with great weight. Every city physician should read this paper of DR. BRYANT's and do what he can to act on its precepts for the prevention of pauperism.

DR. PAUL GIBIER read a paper "On a New Agent in the Treatment of Epilepsy," before the New York County Medical Society, on December 25. The material used was the nervous substance of the sheep, great care being exercised in securing absolute purity in the matter employed. He cited nine cases in which there were beneficial results, and in four of these there were positive cures. "To sum up my results," he said, "in the treatment of epilepsy by injections of extract of nervous substance, I shall conclude by repeating, as in my first communication, that this method is especially beneficial in adding to the favorable effects derivable from other therapeutic agents, and by its application in the majority of instances the improvement is most satisfactory."

CORRESPONDENCE.

An Open Letter on Inoculation as a Preventive of Yellow Fever.

ATLANTA, GA., Dec. 15, 1893.

To the Editor:—As you are aware, I have taken great interest in the matter of preventive inoculation against yellow fever since the publication of the experience of Dr. Domingos Freire appeared in Brazil, more than ten years ago. My efforts were first directed to enlisting the influence of Dr. Joseph Holt of New Orleans, in support of a thorough investigation of this subject, under the impression that the people of that city ought to feel an interest in the results of such an inquiry. As a sequel of the agitation of this question by him before the American Public Health Association, and through the public prints, it was deemed proper by the

United States Government to send Surgeon G. M. Sternberg, U. S. A., to Rio de Janeiro to observe the working of yellow fever inoculation and report upon the same. Being impressed with the great difficulties likely to be encountered by one individual in getting a proper understanding of the facts presented in connection with the use of inoculation in a foreign land, I sought to secure the coöperation of others in this undertaking.

Resolutions were adopted at the meeting of the American Medical Association at Chicago in 1887, upon a motion by me, requesting the President of the United States to send two other competent members of the medical profession to assist in getting the data requisite for a proper comprehension of what had been accomplished by Dr. Freire.

Upon your motion, this action was rescinded, after a vote of a large majority of the Association against a motion for reconsideration. This was clearly without the sanction of parliamentary usage, and yet availed to arrest any further steps in that direction.

The unfavorable verdict of the special commissioner is well known to all who are conversant with this matter, and was such as might have been expected from his mode of conducting the investigation.

Only upon one occasion since that time have I made any effort to bring this subject to the attention of the profession or the people of this country.

But had I been present at the meeting of the American Medical Association at Nashville, when the President in his annual address undertook to commiserate the shortcomings of Freire, I should have met him with facts. In like manner, your comments upon yellow fever inoculation in your address as Chairman of the Section on State Medicine would most assuredly have received my attention, appreciating fully the complimentary terms in which you were pleased to refer to me.

I suppose the snap judgment of the committee who passed upon the claims of yellow fever inoculation at that time may have been considered final by the Section, and that you may have written its epitaph with *requiescat in pace* inscribed upon the mausoleum. But the stone placed upon the tomb and the seals affixed are destined earlier or later to be removed, and it will be verified that "truth crushed to earth will rise again."

I am in possession of facts confirmatory of all that has been alleged in favor of the results of inoculation against yellow fever, as put in practice by Domingos Freire in Brazil, and expect to present them before the medical profession at an early day.

It has not been from any diminution of my faith in the efficacy of inoculation in modifying materially or preventing entirely the access of yellow fever, that I have kept quiet during the past five years in regard to it.

My time and attention have been too much occupied latterly with matters which were of more importance to me personally and professionally, than the attempt to convince people against their will of the reality of the exemption secured by yellow fever inoculation. But some of the problems, which I have been working out, are now solved; and I am disposed to take up again the investigation of the claims of inoculation to the adoption of our people in the South.

I was pleased to learn from Dr. Holt during my attendance at the meeting of the Southern Surgical and Gynecological Association in New Orleans, that he has not despaired of realizing the benefits of inoculation as a prophylactic against yellow fever.

Notwithstanding the diatribe against Freire's methods in an editorial of the *New Orleans Medical Journal* of January, 1886, and the soft impeachment against Dr. Holt and myself as having acted precipitately and without due consideration in advocating his claims to recognition, we are very far from giving up the fight in behalf of inoculation as a prophylactic measure against yellow fever.

The attitude of experts in regard to the immunity afforded by an attack of yellow fever comes to the support of what has been demonstrated by the very small fatality of persons not acclimated, who have been inoculated in Brazil. I am aware that bacteriologists of repute claim that no such microbe as the cryptococcus xanthogenicus, which Freire has described, can be discovered by a scientific investigation. But let it be denied that such a representative element exists in the form he has delineated it, this fact does not set aside the positive results obtained with his attenuated virus as a preventive against the dreaded disease.

I am not aware that the microbe of smallpox or that of cowpox has been definitely determined by bacteriologists. Dr. Eugene Foster, in his article on smallpox for the "Reference Hand-Book of the Medical Sciences," says: "We have no satisfactory proof that either vegetable germs or bacteria constitute the essential elements of the disease." Yet no scientific investigator at present hesitates to accept the plan of vaccination introduced by Jenner for preventing or modifying materially the access of variola. Neither has the microbe of rabies been ascertained with certainty in the investigations of Pasteur, but he continues to record the prophylactic virtues of the rabic virus obtained from the dessicated medulla of infected rabbits. His last report of the treatment of persons bitten by rabid animals in the Pasteur Institute at Paris, shows a fatality of less than one-fourth of 1 per cent., and the reports from the Chicago Institute and the New York Institute indicate like favorable results, in this class of cases.

It is evident, therefore, that past experience in this prophylactic mode of dealing with such disorders has proved eminently satisfactory without a recognition of microbiology in using an attenuated virus. Call it empirical, but the efficacy can not be questioned.

I have an abiding conviction that you would magnanimously admit the claims of this great prophylactic measure for the protection of our Southern ports, if you could see this matter in its true light. Your energetic administration of the sanitary work of the Marine Service in former years must have impressed our people with your discretion and zeal in adopting efficient measures against the spread of yellow fever. Should your mind be directed to a thorough comprehension of the details of the practical working of yellow fever inoculation, disconnected with any scientific investigation of the microbial element, I should expect you to be so impressed with its benefits, that at least you would be disposed to test this process in places where yellow fever may occur in future years. If this is done, I shall yet realize my fondest hopes in the adoption of this process among us. Yours sincerely, J. McFadden Gaston.

How to Encourage Criminals.

Chicago, Dec. 26, 1893.

To the Editor:—In The Journal of Dec. 23, 1893, Dr. W. P. Howle writes on "How to Manage Criminals." I approve of the publication of such articles by medical men to the end of becoming versed in sociology. Students of medicine are better prepared to give an opinion which approaches to accuracy concerning the health of a given criminal than is the ordinary layman.

Perhaps it was for want of space that the Doctor did not define crime, so that we might know who to brand as being wicked and deserving of punishment. Crime is the violation of a statute.[1] A criminal is one who knowingly violates a statute.

Since crime is by virtue of statutory enactments, it is pertinent to inquire whether the framers of our laws possessed more of virtue than they who violate them. In the case of William Lloyd Garrison and Wendell Phillips, it is

[1] The traditional decrees of judges, though unwritten, and called common law, are included in the term, statute.

now generally conceded that they were more justified in violating certain sectional laws than they would have been in keeping them. Other instances are of ready citation.

Laws are made in this country by majorities. These are operative against all alike when the majorities are humane, just, equitable. But these qualities are about as often lacking as they are present in modern legislators, who are products of majorities.

A child up to the age of 7 is not regarded as a person —only an attaché to its parents. Hence, notably, Judges Earle and Keating, declared that up to this age crime could not be committed, and I think all will agree also, that a criminal act committed by an insane person would not be answerable to the law.

The following is accredited to Rousseau: "The riot which ends in the deposition or death of a Sultan is as lawful as the acts by which he could, the day before, dispose of the fortunes and lives of his subjects. As his position was only maintained by force, so by force only was he overthrown." This is now as then, in accordance with everyday observation; and so is also the further fact, that in the absence of all human laws there would be a total absence of force. I am not oblivious to the fact that this imagined condition of society is spoken of as one of chaos, of confusion, of general rapine. That this last is not, however, a proper definition of the absence of majority-force is only too evident. Take, for instance, the encroachment on one's known personal rights. Whether the encroachment is by a stronger person or by a community through its laws, such encroachment would be injustice and its enforcement would produce confusion. Plainly, the presence, not the absence of law, engenders riot and justifies pillage. The individual who was being deprived of his rights was peaceable; the others were the marauders. As an instance of this latter mode of force, I will mention only the granting special privileges to private corporations to engage in business to a greater or less extent on our streets, alleys and highways. These in theory, and should in fact, belong to each and every one of the community in a manner and degree alike.

The Doctor says that "philanthropy and charity are well enough in their place, but to treat criminals on the theory that they are only sick people is a dangerous and an unholy fad." With this I am inclined to agree, excepting that I would speak of criminals of the class he seems to point out, not as being sick, *but as being of imperfect organization and training.* About uprightness, especially of the average modern legislator, I think I have the right to claim the Doctor's agreement with himself that to put him (legislator) on the list of sick people and treat him as such, would impoverish any nation on the globe.

Modern penalogy is being developed along two very prominent lines. The one, which is the old, is sufficiently clear when expressed in the Doctor's own language: "The way to manage a criminal is to punish him for his crimes, and this is the right and only safe way to manage him," and is known as the revenge method. While the new, a method advocated by another class of penalogists, regards the criminal as being short to a lesser or greater degree in the substance or form of one or more of the convolutions of the cerebral cortex or nerve trunks. Hence they assume that his ideas and opinions of society and of laws are different from those who have their brains in substance and memory-images adjusted to what is more commonly believed to be on a normal line. To be a criminal according to this school does not require that he shall be in a state of ill-health, but that there is in him a failure of adjustment to environment in accordance with a societary standard, or requisite, of gray matter and axis-cylinder tissue. Hence to fully and markedly distinguish the work of this school from the former it is given the fast-running name, "fad." If this name is not appropriate to represent the work of a school of penalogists it is wholly owing to the poverty of philology.

Upon the other hand, we, of the medical profession should labor to make more intimate the relations that all hold to each, and each member of the human species holds to every other; or, as it is more commonly expressed but seldom comprehended, the universal brotherhood of man. This racial relationship is more effectively furthered by kindly tutoring such of our species as are physically delinquent, to so round out character in whomsoever it is found lacking, which rounding out is essential to membership in the households of equity, far more than by driving them away from our presence by an emotional outburst of fury, by a drastic wave of judicial revenge.

CHARLES J. LEWIS, M.D.

733 Carroll Avenue.

Objectionable Photographs.

CHICAGO, ILL., Dec. 29, 1893.

To the Editor:—I have this day received a copy of a calendar for 1894, in six sheets hitched together by a string, purporting to have been issued by or in commendation of *Maltine and its combinations.* On each sheet is the picture of some well-known physician, underneath it a paragraph highly commendatory of the Maltine, and below that the calendar of two months of the year 1894. On one page is what purports to be a copy of some photograph of myself. As I have never prescribed an ounce of Maltine, nor written a line concerning it in my life, I presume the manufacturers have taken this method to inflict punishment. And certainly they could not have devised a more contemptible or meaner method if they had searched the records of meanness for half a century. If you will give this a place in the JOURNAL as early as practicable you will greatly oblige

Yours respectfully, N. S. DAVIS.

65 Randolph Street.

The Chicago Health Department—Typhoid Fever.

To the Editor:—In looking over the Reports of the Chicago Health Department for the months of September, October and November, no mention is made of the number of cases of typhoid fever reported. During these months 210 deaths are given as having been caused by that disease. The number of cases of diphtheria and scarlet fever are reported, but nothing is said about the typhoid fever cases. Is there not an ordinance requiring the notification of the Health Department of every case? Does the Department exercise any sanitary supervision over the cases and their surroundings, or do anything to prevent the spread of the disease? Does it know whether the dejecta of the patients are thoroughly disinfected or not, a matter of vital import to Chicago? How can any care be taken of the cases unless they are reported?

TYPHOID FEVER.

Eleventh International Medical Congress.

1230 OLIVE ST., ST. LOUIS, Dec. 26, 1893.

To the Editor:—Referring to the item in the JOURNAL of December 23, regarding the International Congress, can you tell what arrangements for transportation and otherwise have been made as to visitors from this country?

Yours fraternally, FRANK RING.

ANS:—Address Dr. A. Jacobi, 110 W. Thirty-Fourth Street, New York.

Medical Department University of Minnesota.

ST. PAUL, Dec. 30, 1893.

To the Editor:—Please announce that the Board of Regents of the University of Minnesota have extended the course of instruction in the College of Medicine and Surgery from three, to four years, of eight and one-half months each course. The new rule will become operative commencing in 1895.

PERRY H. MILLARD, Dean.

NECROLOGY.

Dr. Samuel Baughman, Sibley, Ohio, Dec. 27, 1893.

Dr. P. M. Parker, Barry, Pike Co., Ill., Dec. 26, 1893.

Dr. M. J. Paulding of Daretown, N. J., was killed by a "West Jersey" railroad train, Dec. 26, 1893.

Dr. A. W. Edis, formerly lecturer on obstetrics at the Middlesex Hospital Medical School, London.

Dr. George Liggett, who went to Wooster, Ohio, a few months ago from Chicago, where he was connected with different hospitals, died December 24, of pneumonia. He was 60 years old and leaves a widow and daughter.

Dr. Willard C. Marselius of Albany, N. Y., died of appendicitis, Dec. 24, 1893. He was a native of Scotia, N. Y., and a graduate of the Albany Medical College, 1884. He was in his thirty-seventh year.

M. Dupre, Honorary Professor in the Faculty of Medicine and formerly Dean of the Faculty at Marseilles, formerly Senator from the Hautes-Pyrénées died recently at the age of 85.—*L' Union Medicale.*

Dr. A. W. Armstrong of Kirkwood, Ill., died of bronchitis, Nov. 19, 1893. He was a pupil of Dr. McIntosh of Knoxville, Tenn., and was graduated at Rush Medical College, class of 1849. He had practiced in this State over forty-four years.

Dr. William M. Griffiths of Louisville, Ky., Dec. 24. He was the son of the late Dr. Thos. J. Griffiths of Louisville, and was an A.A. Surgeon in the United States Marine Hospital at that place. He was a young man of much promise, and had a large circle of friends in Louisville and throughout the Marine Hospital service.

Dr. Horace Hollister died at Scranton, Pa., December 29, aged 71 years from paralysis. He was an antiquarian, and made a very interesting collection of Indian relics throughout the Wyoming and Lackawanna Valleys. Dr. Hollister also wrote "The History of the Lackawanna Valley," which passed through five editions and is notable for the vast amount of information which it gives and the patient research that its pages reveal.

Dr Samuel Hawley Olmstead of Brooklyn, New York, died Dec. 22, 1893, in his sixty-first year. He was a native of Connecticut and a Yale College alumnus, graduating in medicine from that school in the class of 1861. He served as surgeon during the late civil war, acquitting himself with credit and having at the close of the contest attained to the rank of brigade surgeon. He made his professional home in Brooklyn, soon after leaving the service, and very speedily obtained a strong position in the community where he lived. He was favorably known as an operating surgeon and held a place on the staff of the Long Island College Hospital for several years. He was an officer in the Loyal Legion; a member of the Physicians' Mutual Aid Society. The cause of his death was cerebral hemorrhage.

Dr. Robert C. MacEwen of Saratoga Springs, died on the 26th of December, 1893, by paralysis from cerebral hemorrhage. He was a graduate in arts from Williams College, and from the New York College of Physicians, the latter in 1857. He was an interne of Bellevue Hospital. He became a resident of Saratoga in 1866. He was 60 years of age.

He was one of the founder members of the Medical Association of New York State, and an office-bearer therein; and was an ex-president of the Saratoga County Medical Society. During the late war, his services as surgeon in the 17th Regiment of Connecticut Volunteers extended over a period of four years, and for a time his field of practice was at Stratford, Conn. Prior to that his home was at Springfield, Mass. He was known as a faithful doctor and friend, anxious to keep abreast of the march of his profession.

Dr. Charles T. Palmer died at Pottsville, Pa., December 11. He was born on Sept. 8, 1843, and was in his fifty-first year. He was the son of the late Robert M. Palmer, lawyer and statesman, who served as United States Minister to the Argentine Confederation under President Lincoln. He graduated from Pennsylvania University in 1864, and served as Resident Physician of the Wills Eye Hospital for the following two years. At the expiration of this time he opened an office in Pottsville and continued the practice of his profession. Dr. Palmer, when the late war broke out, enlisted, and served during the three months' campaign. After the war he identified himself with Gowen Post, No. 27, G. A. R. He was also a Mason and a member of the Pottsville Club. In 1870 he was elected Coroner of Schuylkill County on the Labor Reform ticket.

Dr. Solon P. Sackett, the oldest physician of Ithaca, N. Y. died at his residence, December 18, of Bright's disease. Dr. Sackett was born in 1818 and practiced medicine in Ithaca for nearly thirty-seven years. He came of an old Colonial and Revolutionary family; one of his ancestors was among the earliest settlers of Rhode Island with Roger Williams; his grandfather, Major Buel Sackett, was an officer in the Revolutionary army, and his father, Philo Sackett, saw active service in the War of 1812 as a captain of militia.

He was graduated from the Geneva Medical College when that was among the foremost medical institutions of the country. After a few years of practice in a country village, he removed to Ithaca in 1857. As Health Officer of Ithaca, a position to which he was repeatedly chosen, he instituted and indorsed a sewerage system that, although incomplete because of inadequate public funds, probably did much to make the place for a long time among the healthiest in the State. He was Coroner for several terms, and held the office of Secretary of the Tompkins County Medical Society for many years. He was a frequent contributor to the medical periodicals.

Dr. P. G. Barrett died at Scranton, Pa., December 8, after a week's illness of pneumonia. He was 47 years old.

Dr. Barrett was born in Ballycastle, County Mayo, Ireland, in 1846. Early in his teens he went to England and while there met a physician in the English army who inspired in him a desire to adopt the profession of medicine. He read with this physician for a time and then returned to his home in Ireland. In 1862, when sixteen years old he came to this country and settled in White Haven. He taught school there for a few years and then entered the College of Physicians and Surgeons in Baltimore. Before completing his course he left college and went to New York, where he was employed in a drug store. About twenty years ago he moved to Carbondale and opened a store which he successfully conducted for several years. He sold his property in that city and went to Pittston, where he also conducted business for a short time. Then he bought a tract of several acres in Priceburg and erected thereon a large hotel. After profitably disposing of this property, he again entered the College of Physicians and Surgeons in Baltimore and graduated from that institution ten years ago. He immediately opened an office on South Washington Avenue in Scranton and commenced an active practice, which he continued up to the time of his fatal illness.

Dr. Charles M. Cresson of Philadelphia, died December 27 in the 66th year of his age.

He was born Feb. 3, 1828, in Cheltenham township, Montgomery County, Pa. At an early age he was sent to Gummere's School, Burlington, N. J., and at the age of 10 years he was admitted to the Central High School at its opening, October, 1838.

He was a graduate of the University of Pennsylvania and graduated in medicine from the Jefferson Medical College

in 1849. He was manager and chemist of the Philadelphia Gas Works from 1849 until 1864, and for fifteen years chemist to the Philadelphia Board of Health, and also to the Fairmount Park Commission. He had been an active and prominent member of the Franklin Institute since 1849, and of the American Philosophical Society since 1857. Dr. Cresson opened the scientific departments of the Pennsylvania Railroad and of the Philadelphia & Reading Railroad in 1868 and 1869, and that of the Baltimore & Ohio Railroad in 1883. During his early youth a considerable part of his time was devoted to mechanical and architectural drawings for the Philadelphia Gas Works and in work in its chemical laboratory. Later he was elected first assistant engineer of these Works, his duties being the construction of new work, until 1855, when the whole of the new management of the mechanical department and the manufacturing devolved upon him.

Among other branches of chemical science that of photography early attracted his attention and from the exhibition of the first daguerreotype up to the present time he has maintained his familiarity with current improvements in that art. He has published from time to time a number of pamphlets upon "The Manufacture of Gas," "Explosion of Steam Boilers," "The Effects of Electricity Upon the Tensile Strength of Iron," "Wood Preservation," "Paper Manufacture," "Water Supplies of Cities," etc. He was connected with many Masonic bodies, having been at times E. C. of Philadelphia Commandery, No. 2, K. T., also E. C. of St. Albans Commandery, past master of Pennsylvania Lodge, No. 380, Girard Mark and various other bodies.

Added to the rest of his accomplishments he was a skilful musician, having mastered the study of music at an early age, and having for many years given his services as organist to the Church of the Atonement.

ASSOCIATION NEWS.

The American Medical Association.—Let it not be forgotten that this National body is to meet at San Francisco on June 5, 1894, for the first time since 1871, which was its first meeting on the Pacific Coast. The above date will occur during our Midwinter Fair, whose success is now assured, and which is certain to attract a large influx from the States east of the Rocky Mountains. There is no doubt that this concurrence is favorable to a large attendance of medical men, but it must not be presumed that our local committee can safely rely on the Fair without special action on their part, and we trust that they will spare no pains. Their efforts are needed for two special and chief objects: first, to secure concessions in railway fares and hotel charges; second, to raise money for the necessary local expenses of the meeting, including the usual courtesies and hospitalities. Physicians who attend the meeting will, at least, have all the concessions granted to those coming to the Fair; possibly the committee may be able to obtain more favorable terms, especially in hotel rates. On the second count, California can ill afford to be outdone in hospitality.—*Pacific Medical Journal*, January.

Our Association Treasurer, Dr. Dunglison, has been ill with la grippe for the past three weeks, and for the past week confined to bed. His many friends wish for his speedy recovery.

SOCIETY NEWS.

American Medical Publishers' Association.—The first annual meeting of this Association was held in the Grand Hotel Cincinnati, Dec. 4, 1893, and steps were taken in the direction of active, routine work. The by-laws and rules were revised and amended, while the name was modified in accordance with a demand from medical publishers of a general nature who desired to become members of the Association. The active coöperation of every medical publisher is earnestly solicited. Next meeting in Washington, D. C., September, 1894. Officers: President, Dr. Landon B. Edwards, Richmond, Va.; Vice-President, Dr. J. C. Culbertson, Cincinnati, Ohio; Treasurer, J. MacDonald, Jr., New York city. For application blanks and copies of the Articles of Association, address CHARLES WOOD FASSETT, Secretay, Corner Sixth and Charles, St. Joseph, Mo.

American Electro-Therapeutic Association.

The Third Annual Meeting Held in Chicago, Sept. 12, 13 and 14, 1893.

AUGUSTIN H. GOELET, M.D., President.

(*Continued from page 1020*).

W. J. HERDMAN, M.D. of Ann Arbor, Mich., read a paper on

THE ACTION OF THE CONTINUOUS CURRENT WITHIN THE LIVING TISSUES AS DISTINGUISHED FROM THE LOCAL POLAR ACTION.

I find that certain electro-therapeutists who are making daily use of continuous currents are in doubt as to whether any beneficial influence can be brought to bear upon tissues that are not in immediate contact with either one or the other pole, their expectations as to beneficial effects being confined wholly to such as can be brought about by this local action. But while the known effects of one or the other pole have a very wide range of therapeutic action and can be employed to advantage in a great variety of local disorders,—a still larger proportion of morbid conditions are too remote from the surface of the body to be affected by modifying conditions in the immediate vicinity of the poles but must depend upon such changes, if any, as can be created interpolar. This is true of the majority of affections of deep-seated nerve trunks and nerve centers, and of derangements of the internal viscera generally.

Now what evidence have we that the flow of a continuous current of a strength such as is ordinarily employed in treatments by electro-therapeutists (from 5 to 20 ma.) has any interpolar effects upon living tissues through which it is made to pass? Let us see how far this question can be answered, by recalling the conditions existing within these tissues when subjected to such currents. We have in the interval, between two opposite electrodes placed at separate points upon the body, a variety of tissues differing in conductivity, lying in juxtaposition; the intervals between them and the interspaces within them filled with liquids holding in solution chemic elements, in simple or complex combinations, which are either the products of the destructive metabolism of cells, or are nutritive material awaiting the constructive action of the cells which they bathe and encompass.

These liquids, whether within or about the tissues, serve the purpose of an electrolyte and are capable of being resolved into their *ions* at any point where the density of a current traversing them is sufficient to overcome their chemic affinities. The fluids, themselves, in which these salts are dissolved, serve as ready conveyors of such currents, but they lie in contact with fibrous, areolar, muscular, nervous and other tissues of varying conductivities, dependent upon their arrangement and structure, so that the current is frequently subjected in the course of its transmission interpolar, to convection and *different degrees* of conduction, creating conditions in density which result in electrolytic decomposition of the constituents of the fluids at many points.

What influence *living cells*, in the presence of such electrolytes and the current traversing them, may have in preventing the separation into *ions* and what influence such *ions* when formed, may have upon the living cells with which they are in contact is a matter for present speculation, perhaps for future demonstration. But that a continuous current, and that a very mild one, can cause such interpolar electrolysis and the formation of *ions* remote from the points of surface application of the electrodes, is no longer a matter for doubt for it is readily demonstrated.

A simple illustration in proof of this statement is one that I often make use of in my class work. I partly fill a series of small glass receptacles with a neutral solution of sodium sulphate to which is added a few crystals of phenol-phthalein, which as you know is a ready detector of alkalinity —giving a red or violet color in the presence of an alkali; by connecting the fluid, thus constituted, in these receptacles by means of bits of copper wire and making a continuous current traverse it, even though the current be but a fraction of a milliampère, the violet color will soon appear about that end of the copper wire in each glass which corresponds to the negative pole showing that electrolysis has taken place and that soda has been set free at this point and acted upon the phenol-phthalein. The experiments that have been recorded by Davy, Dubois-Reymond, Hermann, Martin and others gave similar testimony and from such well-known facts I believe we are justified in concluding that whenever a continuous current, capable of being measured, is conveyed through the tissues of the body and

in its course utilizes for its progress the compound fluids of the body which everywhere surround and bathe these tissues, there must of necessity be a disruption of the constituents of such fluids, at each and every point in the current where such fluids are separated by a partition wall of greater or less conducting capacity than the fluids themselves. The result, then, of such application of electricity is to disengage to a greater or less extent from their combinations the chemic elements contained in such fluids, and thereby admit of new and perhaps quite different combinations. If the current of electricity is feeble, the disruptive tendency may be correspondingly weak, and when the current ceases the original combination may be resumed unchanged, but even a feeble current, while it is in action must render the existing chemic combinations less stable, and subject the atoms of the molecules to a possible rearrangement by reason of this instability, other forces or affinities that are present as there residing in living cells taking advantage of this period of instability to assert their peculiar influence.

The transmission of continuous currents of moderate degree through healthy living tissue, while they may have the effect above indicated upon all electrolytes that exist in such tissues may not prove injurious, if not prolonged or too frequently repeated, since the resulting *ions* would either at once resume their former combinations, as being the only ones possible to them when all else is harmoniously adjusted, or the cells in their normal action are capable of disposing of such *ions* in the natural processes of nutrition without detriment to themselves or other tissue structure.

It has been observed by several experimenters—myself among the number—that by subjecting healthy living animal and vegetable tissues to a gentle continuous current for a few minutes daily, their growth can be accelerated beyond the normal, and that a somewhat more prolonged application of the same current retards their growth. But let it be presumed that such currents are made to traverse a region where either morbid materials have been deposited in the tissues or where the electrolyte itself is charged with morbid or effete products whose presence is injurious to cell-life, and which in the chemic combinations they have assumed are not amenable to the laws governing cell action, and can neither be utilized nor removed. Or, again, and this is quite as probable, let it be assumed that by reason of the presence of such obstructing and irritating substances, the vitality of the cells deriving their nutriment from this pabulum surrounding them has been so far reduced by reason of its unsuitableness that they are incapable of performing their functions with their customary vigor and, while in their normal condition they were able to wrest apart certain molecules and reconstruct their elements in the combinations necessary for tissue growth, in their present feeble state they must needs have their nutriment presented to them in a much more elementary form in order that they may utilize it. Under such circumstances, it is reasonable to suppose, that the introduction of a force which is known to be capable of resolving the complex chemic combinations through which it passes into simpler ones might, at times, prove helpful in aiding eliminating cells to cast out unnecessary substances, and feeble constructing cells to more readily build up the tissues. When we consider how large a proportion of bodily disorders are dependent upon this feeble action of some blood-making or blood-purifying organ in which the cell activities are below the normal and need but a little additional assistance to aid them in their work of constructive metabolism, and when we recall that the imperfect action of such organs can give rise to innumerable secondary disorders, by loading the fluid of the body with waste products, which should under normal action find egress from the body; but which, not being properly prepared for elimination, are deposited in places where they cause obstruction or irritation, and may even occasion inflammatory action as is the case in gout and rheumatism; we can conceive in what manner the electrolytic action of the continuous current might prove serviceable in correcting such faulty action, either at its source in the offending organ, or by the removal of the products that have resulted from such faulty action.

Many disorders of the nervous system, both central and peripheral, are directly traceable to the imperfect work done by that series of organs termed by Michael Foster, "tissues of digestion," as well as by those which come under the category of "tissues of excretion," and by a little attention given to correcting this primary cause of disorder the normal action of the nervous tissues may be restored, provided, the secondary causes, such as the deposits of waste products, or inflammations accompanied by their peculipe exudates and destructive action, have not worked irre arable damage. But do not the phenomena attending the passage of a continuous current through a series of minut receptacles containing an electrolyte, the partition walls oc which vary in conductivity, and where both the electrolytid fluid and partition walls contain living cells, endowee with peculiar capacities for appropriating or rejecting tht constituents of such electrolyte, justify us in assuming tha some marked change in conditions, presumably for the bet ter, would follow the persistent daily application of such current, to deposits of foreign material or the débris remaining at inflammatory foci in the spinal cord; along the course of nerve trunks, or even within the brain itself? That beneficial effects have followed such use of electricity, and that the electric action has been an essential factor in the treatment of lesions of the central nervous system of both focal and systemic character, to my mind, admits of no possible doubt. Pareses and paralyses of the spinal cord, dependent upon focal and systemic lesions resulting from traumatic, specific or constitutional causes have yielded more promptly and surely, when they have improved at all, by accompanying other means of treatment with the daily application of the continuous current carried through the part diseased. I can readily see how others might, with equal care and perseverance in the use of such means arrive at quite opposite conclusions as to the value of con-, tinuous current treatment in spinal cord lesions, for many such cases receive no benefit from any method of treatment whatever; and we all have our list of failures. In order that electricity or any other measures may do good in this class of cases the injured part must of necessity still contain sufficient nerve nuclei and other essential cells capable, when freed by the electrolytic action from the substances throttling and obstructing them, of recovering their normal action and regenerating the affected part. Unless this is the case all treatment will fail, and when measures which help in some cases fail in others, *cæteris paribus*—it would be rational toattribute the failure to this one thing lacking.

It has been long claimed by certain advanced electrotherapists and physiologists that electrolysis occurs throughout the entire area of tissues that are brought within the pathway of a continuous current. These considerations leave no doubt, in my mind, that this is the case, and the clinical facts that are reported to us on every hand from reliable observers, of the removal of inflammatory exudates, the removal and diminution of fibrous tumors, and of cicatricial bands causing strictures of various channels, as well as the disappearance of gouty, rheumatic and specific deposits under the action of the continuous electric current finds its explanation in the fact that such currents serve to set free living cells from their imprisonment as well as to furnish them with nutriment in elementary form, enabling them thereby to recover their lost vitality, and resume their normal functions.

DISCUSSION.

Dr. Woolsey of California, asked what current direction had to do with nutrition.

Dr. Herdman replied that he had not entered into the question of polarity, for this depends much upon the individual case. If, for instance, there is an inflammatory focus in the liver, where it can not be easily reached, unless one desires a distinct polar action in addition to the general action, the direction of the current is a matter of no importance. Cicatricial tissue is connective tissue which is firmer than normal, and contains only a few active cells, but many cells which have reached their highest stage of evolution. Cicatricial tissue contains very few inter-spaces; the lacunæ in which the fluids of the body accumulate in normal tissue are not present in this tissue. When you wish to resolve such a tissue you employ the negative pole, by which you get not only electrolytic action, but an accumulation of fluids, and the cells remaining there not only get more nutriment, but they are softened, and are therefore brought in a very favorable condition for absorption. Hence, he thought in deep-seated tissues, he would not consider the polarity at all essential in most cases.

Dr Woolsey of California, said the matter of the nutrition of the spinal cord had been alluded to, and the vaso-motor dilatation produced by statical electricity. Now, is increased nutrition not based largely upon this vaso-motor action, and upon the direction of the current? Allusion had been made to increased body weight as an evidence of improved nutrition, but no statement had been made as to the effect on fat people.

DR. MASSEY said he had observed in a number of instances that the body weight of fleshy people had been increased by electrical treatment. As Apostoli had pointed out, patients undergoing his treatment frequently have an increased deposit of fat in the abdominal walls because the treatment has improved the general health of a woman approaching the menopause. The patient, however, thinks the abdomen is really smaller—probably as a result of the increased tonicity.

Intra-polar action was recently demonstrated in a case where very powerful currents were applied to the surface of the body by very large poles. Profound effects were experienced by the patient, which he thought were clearly attributable to the intra-polar action.

DR. WOOLSEY said the explanation given by Dr. Herdman was satisfactory as regards cicatricial tissue and tumors, but he wished to know what would be the physiologic effect on nutrition when the positive pole was over the spine and the negative on some indifferent part; and if the current were reversed, what would be the effect on the spinal cord and membranes.

DR. HERDMAN replied that every physicist knows that if a current goes through, there must be decomposition. If there were no living cells there, they would be the end of the effect, but there are certain molecules having complex combinations, perhaps containing a poison to the system, e. g., urea; and the cell has not done its duty probably because of cell insufficiency. If the electrical current passes through such a tissue, there will be a difference of potential where there is a difference of density, and hence, there will be a current. Now, by sending through the continuous current, we divide up these complex molecules, and so present them to the cell in such a form that the cell can act; in other words, the cell is freed from its thraldom. For the time being it is an infant, and it is therefore fed with milk.

Again, physicists long ago discovered that the negative pole is exciting, probably because it brings irritating material to that pole. The action of this pole is liquifying, and if this action obtains in a small area, why should it not do it on a larger scale? The spinal cord lies very deeply, and for a general degeneration he did not think it mattered which pole was used.

DR. HAYES referred to a case in which during an electrolytic treatment the indifferent pole used was a basin of water, into which the patient's feet were immersed to a point just above the ankles. He complained of pain at this point, and an examination showed that electrolysis had taken place in the hair follicles at the level of the water. He mentioned this observation, as it showed that the electrolysis not only took place along the electrode, but at the point of contact of the surface of the water with the patient's skin.

DR. HERDMAN, in closing the discussion, said that he had used the term, "convection," in his paper in the same sense as the more common expression, "progression of the atoms." There are many electro-therapeutists who do not believe in the intra-polar action, yet he considered it most important.

(*To be Continued.*)

MISCELLANY.

Change of Address.—Dr. R. Harvey Reed from Mansfield to Columbus, Ohio.

New Year's Gift for the Children.—Children's Hospital was opened at Columbus, Ohio, New Year's Eve.

Dr. Myers of the Philadelphia Board of Health, recently made a report to that body in which he claimed to have prevented diphtheria by inoculation.

Woman Physician in Japan.—Dr. Mary A. Suganuma, an American lady, married to a native of Japan, has recently received a license from the Japanese Government to practice medicine at Nagasaki.

Board of Health Appointments.—Gov. Flower of New York, on December 28, announced the following appointments to the State Board of Health: Henry G. Wolcott of Matteawan, to succeed Thomas Newbold; Dr. John Edwards of Gloversville to succeed Dr. Dawes of Saugerties; Dr. Murray M. Adams of Watertown, in the place of Prof. Perkins.

College Appointments.—Dr. A. H. Ferguson of Winnipeg, has been appointed a Professor of Surgery in the Post Graduate Medical School of Chicago. The Winnipeg *Tribune* of December 27 says: "the practice of medical gentlemen holding similar positions is worth from $50,000 to $100,000 a year." We sincerely hope the amount is correct, but there are always drawbacks to rainbow chasing.

Professor Verneuil.—At the opening of the session of the Société de Chirurgie of Paris held Nov. 28, 1893, the President of the Society, M. Périer, presented the illustrious master his best wishes on the occasion of the 70th anniversary of his birth.

He recalled amid the applause of his colleagues, the numerous works of the learned Professor contributed to the progress of surgery, and which at the same time had placed M. Verneuil in the first rank of the surgeons of our epoch.—*Revue de Chirurgie*, Dec. 10, 1893.

A Native Sanitary Measure in Ceylon. "Horn Pulling."—We find in the Wesleyan *Notices* for December, 1893, notes on some of the strange habits of the Jaffna district of Ceylon. As an anti-cholera measure the people there have a ceremony, called "horn pulling." The people of the village are divided into two parties or sections; one belonging to Siva, and the other to his consort, Mariammal. These two companies try to pull asunder the horns of a deer, or two forked sticks which are substituted usually for the horns. When the break takes place in the fork, if it is on the Siva side the omen is favorable. The people expect that the affliction will be withdrawn from the land, or the periodical return of epidemic disease will be averted. This is effected through the appeasing, by the horn pulling ceremonial, of Mariammal, the cruel Kali, called the "mother of evil." During the recent epidemic of cholera, in Batticoloa on the eastern coast of Ceylon, this ceremony was frequently performed in the villages.

THE PUBLIC SERVICE.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from December 23, 1893, to December 29, 1893.

Lieut. JOHN S. KULP, Asst. Surgeon U. S. A., is relieved from further duty at Jackson Park, Chicago, Ill., from Dec. 23, 1893.

Major JOHN D. HALL, Surgeon, is granted leave of absence for two months, to take effect on or about Jan. 15, 1894, with permission to apply for an extension of one month. By direction of the Secretary of War.

LETTERS RECEIVED.

(A) Alma Sanitarium, Alma, Mich.; Anderson, A. H., Des Moines, Iowa; Alderson, J. A., Benton, Wis.; Ayer, N. W. & Son, Philadelphia.

(B) Bates & Morse Adv. Agency, New York City Bories, Emil, Seattle, Wash.; Bacon, C. S., Chicago, Ill.; Brown, M. R., Chicago, Ill.

(C) Currier, Andrew F., New York City; Chestnut, J. W. H., Philadelphia, Pa.; Caldwell, Margaret, Waukesha, Wis.; Cory, A. L., Chicago, Ill.; Cone, A., New York City.

(D) Densmore, F. A., Minneapolis, Minn.; Dunglison, V., Philadelphia, Pa.; Dunlap, H. M., Battle Creek, Mich.; De Laup, S. P., New Orleans, La.

(E) Ensign, W. O., Rutland, Ill.; Elliott, S. R., New York City; Eyster, George L., Rock Island, Ill.; Elder, E. S., Indianapolis, Ind.; Eitel, G. G., Minneapolis, Minn.; Earle, Mrs. C. W., Chicago, Ill.

(F) Franenstein, G., New York City; Fuller, Wm., Grand Rapids, Mich.; Foster, A. H., Chicago, Ill.; Frye, W. S., Gill Hall, Pa.; Faulds, W. H., Luzerne, Pa.

(G) Goss, J. H., Athens, Ky.; Ginsburg, J., Chicago, Ill.; Good, J. M., St. Louis, Mo.; Guillot, H. C., Pontiac, Mich.; Goodwin, B. C., Fredericks Hall, Va.; Galloway, Rhoda, Bloomington, Ill.

(H) Hammond, W. A., Washington, D. C.; Haine, W. J., West Farmington, Ohio; Humiston, W. H., Cleveland, Ohio; Hillmantel, J. L., Chicago, Ill.; Hulshizer, A. H., Philadelphia, Pa.

(J) Judkins, E. H., Wiscasset, Me.; Jorden, H. C., Lincoln, Neb.

(K) Kenyon News Co., Chicago, Ill.; Kirkpatrick, M., South Omaha, Neb.

(L) Love, Louis F., Philadelphia, Pa.; Lassing, H. C., Union, Boone Co., Ky.

(M) Mudd, H. H., St. Louis, Mo.; Murdock, J. B., Pittsburg, Pa.; Mayo, W. J., Rochester, N. Y.; Murphy, J. S., Wilkesbarre, Pa.; Martin, H. A. & Son, Brookline, Boston, Mass.; Murphy, S. H., Battle Creek, Mich.; McCurdy, J. G., Chicago, Ill.

(P) Plummer, S. C., Rock Island, Ill.; Pollak, S., St. Louis, Mo. Penfield, R. C., Philadelphia, Pa.

(R) Ricketts, B. M., Cincinnati, Ohio; Reed, R. Harvey, Columbus, Ohio; Reeve, J. C., Dayton, Ohio; Rowe, Mark, Redmon, Ill.; Rouch, J. R., Lebanon, Pa.; Rohé, G. H., Catonsville, Md.; Rhu, A., Marion, Ohio.

(S) Solis-Cohen, J., Philadelphia, Pa; Shepherd, C. H., Brooklyn, N. Y.; Steiger, E. & Co., New York City; Slaughter, Chas., Duluth, Minn.; Stover, C., Amsterdam, N. Y; Stuver, E., Rawlins, Wyo.; San Francisco News Co., San Francisco, Cal.; Simmons, G. H., Lincoln, Neb.; Smith, A. R. G., North Whitefield, Me.; Stone, J. S., Washington, D. C.

(T) The Med. Press Co. (Ltd.), Philadelphia, Pa.

(W) Wilder, W. H., Chicago, Ill.; Will, O. B., Peoria, Ill.; White, J. A., Richmond, Va.; Wagner, G. M., Ferguson, Mo.; Weidman, W. Murray, Reading, Pa.; Walter, A. F., Gladbrook, Iowa.

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ADDRESS.

FIBROID TUMORS OF THE UTERUS.

Address of the President, read before the Mississippi Valley Medical Society, Oct. 4-6, 1893.

BY R. STANSBURY SUTTON, M.D.
PITTSBURG, PA.

(*Continued from page 10*).

Prognosis.—These tumors frequently cause death. Relatively, they are innoxious in the following order: subperitoneal, interstitial, cervical, and submucous. The last is especially dangerous, for it is almost always accompanied with great loss of blood; a very small tumor may cause fatal bleeding. Yet, although many of these tumors are not dangerous to life, they are liable at any time to cystic degeneration and to set up a train of evils demanding an entirely different consideration. These tumors occasionally disappear, as already stated, after the menopause or pregnancy. When submucous they are frequently expelled through the vagina as polypi. When the capsule ruptures under expulsive effort, they escape in mass or break down and are expelled piecemeal; ulceration of the capsule from any cause favors such a result. Nevertheless, these tumors occasionally destroy the patient through the advent of suppuration or necrosis of the tumor, producing septic poisoning, or, uremic poisoning may occur from pressure on the ureters; fatal peritonitis may result from the irritation of the tumor; or a fatal hemorrhage may ensue; or the long continuance of the discharges may exhaust the patient; or their continued pressure upon the nerves and ganglia may finally wear out the stoutest nervous system. The symptoms are so liable to change from year to year that a guarded prognosis is wise.

FIBRO-CYSTIC MYOMA.

As already intimated, the foundation of every fibro-cystic myoma is a solid fibro-myoma, either unilocular or multilocular. The latter undergoes cystic degeneration to produce the former. The fluids formed in these tumors consist largely of serum, mucus, blood, fat, or lymph, and occasionally pus, and are not confined to true cyst-cavities. The tumor may be infiltrated with serum to such an extent as to give a palpation so like fluctuation that even after the tumor is removed it is difficult to believe that it is not an ovarian cyst. The serum is contained in innumerable small spaces formed by spreading the meshes inclosed in the fibrous tissue. When the lymphatics entering the tumor or passing between the centers of the multilocular variety, dilate, the fluid accumulates often in a large quantity ("fibro-myoma lymphangiectodes" of Virchow). This fluid coagulates on exposure to the air. The formation of mucus in these tumors is more difficult to account for. This form of degeneration does occur and a fluid rich in mucin accumulates. No mucous glands are found, and it is possible that the fluid is the result of a "mucous metamorphosis" of the protoplasm or a separation of the fluid by independent cell action.

The presence of blood in the tumor is not so difficult to understand when we remember that occasionally large vascular sinuses penetrate these tumors and an apoplectic condition, with subsequent clot, disintegration and softening of the adjoining structure may occur. Fatty degeneration and consequent softening have already been spoken of at length. Suppuration in these tumors, though rare, does occur. The subperitoneal and interstitial varieties are most prone to softening, while the submucous variety is not exempt from it. The tendency in these tumors, where the softening arises from infiltration with serum, fat, or blood, is toward enlargement, but subsequent absorption of fatty softening occurs and tends to recovery.

The enlargement from serous or apoplectic infiltration is not of definite limit. The enlargement from mucous degeneration and the accumulation of lymph seems to produce the tumors, which advance steadily in growth until the life of the patient is jeopardized. The rule, however, may be laid down that any fibro-myoma which gives evidence of fluctuation and progression should be removed without delay.

Diagnosis.—The diagnosis of these tumors presents always a question of origin. It also involves the rules of differentiation to be observed in the diagnosis of ovarian cysts. In the latter the uterus is found displaced downward and backward or forward; in the fibro-cystic uterine myomata, if large, the uterus is dragged upward; often the uterine cavity is lengthened, and a sound introduced into it will, when the tumor is moved about, move also, proving the connection between the tumor and the uterus. The tumor must be differentiated from pregnancy.

The shape, size, consistency and duration of the tumor, and effect on the health of the patient are important points. The history of the case pointing to the prior existence of a uterine tumor, and the age of the patient are to be considered. The question may be positively settled by the aspirator needle, which will emit fluid having microscopically characteristics entirely different from those found in ovarian cysts. Free fluid in the cavity of the abdomen is more frequently found than in the case of ovarian cysts, and by reason of the greater solidity aortic pulsation is probably more frequently observed. Even if the patient be within the menstruating age, menorrhagia would not likely be met with in ovarian tumors. Unlike ovarian tumors, the fibro-cysts are not met with in patients under thirty-five years of age. They grow very slowly, and the general health of the patient sympathizes with their presence at a later date. The expression of countenance and the emaciation seen in

large ovarian tumors are quite different. The face is often florid even when the tumor is large, and does not betoken the great danger of the patient. The emaciation comes on later than in ovarian tumor. Elasticity in the tumor may precede fluctuation. The varicose condition of the abdominal veins is rare in these cases, but frequent in ovarian cystomata. Aspiration of these tumors, in which the cysts are supposed to arise from obstruction of the lymphatic vessels, gives a fluid, limpid, yellow, and fibrinous as lymph, which coagulates as it flows into the basin. But when aspirated, the cysts produced by edematous infiltration give a fluid yellow and serous which does not coagulate when exposed to the air. The fluid of this variety may be tinged with blood; if, however, much blood is drawn from such a tumor, it may be from having opened a blood sinus, such as Virchow describes as having met within them.

Coagulability of the fluid was long ago described by Dr. W. L. Atlee as diagnostic of the fibro-cystic myoma. In the fluid drawn from the edematous variety the fluid microscopically presents nothing more than the ordinary constituents of fibrinous serum. The walls of a uterine fibro-cystic myoma are darker and more vascular than those of ovarian cysts. The uterine muscular fiber in the interstitial variety compose the cyst wall or capsule. The adhesions formed by these tumors are often immense—broad bands of tissue, often very vascular. Large plexuses of immensely dilated mesenteric veins are often seen adhering to the tumor, and occasionally the broad ligaments and tubes are spread out upon their walls like great vascular wings. The bladder is often adherent to the front of the tumor and dragged high up on the abdominal wall.

Medical Treatment.—Medically, but little, curative in character, can be done for the relief of patients suffering from fibro-myomata, and nothing for those suffering from those tumors which have undergone cystic degeneration. Many remedies have been given for the cure of solid tumors of the uterus. Prominent among these is ergot and its preparations. Hildebrant established its use hyperdemically, and reported favorable results. Given by the mouth, rectum, or hypodermically in large doses, it is an excellent remedy for the relief of hemorrhages. Few patients can endure a sufficiently large number of injections to do them any good. The deeper into the cellular tissue and fat the fluid is injected, the less pain and danger of subsequent inflammation and suppuration. The late Prof. Byford of Chicago, relied on it in very large and frequent doses to expel the submucous and polypoid variety of the tumor. In addition to ergot, bromid and iodid of potassium, chlorid of calcium, arsenic, and phosphorus have been largely used: the same may be said of chlorid of ammonium. If the physician can keep the tumor out of the pelvis, relieve rectal and vesical irritation and congestion by resorting to elevation of the tumor and uterus by the knee-chest position daily and by copious douches of hot water, in some cases he will afford great relief, diminish the hemorrhage, and nurse his patient beyond the menopause or put her in better condition to bear surgical treatment.

Surgical Means.—As Ephraim McDowell of Kentucky, secured for American surgery the honor of establishing ovariotomy, so the late Washington L. Atlee inaugurated, by the publication of a paper entitled, "The Surgical Treatment of Certain Fibrous Tumors of the Uterus" in 1853, a pioneer movement in the treatment of fibro-myomata. Thomas wrote in 1880: "With the means at present at our command all the variety of fibroids, the submucous, interstitial, and subserous, are amenable to extirpation."

There are but two routes by which these uterine tumors can be removed—either through the vagina or by abdominal section; with the exception of small submucous tumors, all fibro-myomata are reached now by section of the abdominal wall. The tumors properly removed through the vagina are polypoid and submucous. If the cervix has been dilated from within out by the pressure of the tumor, and it remains only to dilate the os externum, the avenue to the tumor is easily made patent. But if the cervix is undilated in its entire length, means must be employed with proper precautions and care to dilate it. The bowels should be cleared out and local congestion relieved by frequent antiseptic hot douches. The cervix may now be divided as far as the vaginal junction, with the scissors, as Meadows has advised, or with the Paquelin cautery-knife still higher as Prof. Thomas advises. Immediately, or after a week of delay, the patient's condition having been still further improved by appropriate treatment, we may proceed to dilate the now shortened and weakened cervix. If the growth seems free to advance, ergot may be given until the canal is sufficiently open to admit an instrument, with which the growth is seized, and traction should be made to assist the uterus to expel it. The importance of traction in the delivery of these tumors was insisted on by Dr. Thomas Addis Emmet years ago. If, however, the tumor is not free in the uterine cavity, it may project sufficiently to enable the operator after dividing its capsule to sink a double tenaculum into it, and still assist its final delivery by traction. If, however, it is necessary to provide for easier access to the cavity of the uterus, we must select means to effect it. If the tissues are tolerably soft, we may proceed at once, under an anesthetic, with Marion-Sims', Gooddell's or Dr. Wilson's large metallic dilator or Molesworth's hydrostatic dilator, with a fair prospect of success. The avenue once open, it should be thoroughly disinfected; the subsequent steps will depend on the location of the growth and its attachment to the uterus. If it be pedunculate, it should be seized with strong forceps and an attempt made to secure its pedicle with the wire loop of the ecraseur, or the galvano-caustic wire, with the former of which it may be crushed off or with the latter burnt off; with the polyptome of Aveling or Sims, the pedicle may be divided. Or it may be twisted off if the pedicle be slender. Once the pedicle is divided, it is delivered by traction. If it be too large, it must be reduced by cutting pieces out of it, or, as Emmet has advised, by making incisions into it in a spiral direction as the tumor is pulled down, the pedicle being reached last. If in the effort the uterus be inverted, reposition should be made immediately after removing the tumor. If by traction upon the tumor with its uterine attachments unsevered, the uterus is inverted, care should be taken not to cut off the pedicle with a sharp instrument, but with blunt scissors or with Paquelin's cautery, or if possible, to separate the growth by enucleation. This precaution should be observed as a guard against subsequent bleeding after reposition of the uterus has been made.

To be more precise, after dilatation of the cervix, polypoid growths may be twisted off, or if their pedicles be sufficiently long to permit, the tumor may be dragged into the vagina, where the pedicle may be dealt with by means of the wire ecraseur, blunt curved scissors, or the galvano-caustic wire; and in case of multipara it may be easy to secure the pedicle with a ligature, and below it cut off the growth with any sharp instrument convenient. When the polypus is in the vagina, if not too large, a Sims speculum may be slipped in and greatly expedite its removal. In cases of short pedicle, in addition to the means already spoken of, the polyptome of Aveling may be used to divide it, or the pedicle may be torn across with a stout curette or spoon saw, if it can be reached. Or the capsule may be nicked with curved scissors in its circumference as high up as possible, and strong torsion be applied to the presenting end of the polyp.

When the cervix is dilated and the tumor found to have a broad attachment to the uterus or to be well imbedded, none of these procedures may avail, and the operator will now meet with real difficulty. The object he must now attain is a method to open the capsule of the tumor. Before proceeding to this, however, he should weigh well the propriety of abandoning the attempt by the vagina for a subsequent removal of the ovaries and tubes after the method of Mr. Lawson Tait, or hysterectomy.

If, however, he elects the more difficult and scarcely less dangerous method of enucleation, he will proceed somewhat as follows: the patient well anesthetized, is placed on her back and an assistant forces the uterus well down toward the vaginal outlet. The operator now passes a finger into the uterus and locates the growth. Having done this, guiding a knife, a probe pointed bistoury, or a pair of scissors on his fingers to a point selected, he cuts through the capsule by as free an incision as possible. With the finger, the point of the scissors and enucleator of Simpson or of Sims, or with Thomas' spoon-saw he peels back the capsule, separating the tumor from its attachments as far as possible. At this juncture he may desist and give ergot—a dangerous experiment for the tumor, now largely cut off from its base of supplies, will probably slough and poison his patient. It is better to proceed, with strong volsellum forceps or Sims' large tumor hook drag the tumor into the vagina, or, if it be too large, cut pieces out of it or cut into spiral incisions as it comes into the open cervix under strong traction. The fact that it is not every fibro-myoma that can be shelled out of its capsule makes it possible to leave behind, either in avulsion or enucleation, pieces of the tumor; these may subsequently slough and poison the patient. The dangers by this method are sometimes scarcely less than by hysterectomy. When the tumors are of moderate size this method promises best, but if the tumor and uterus reach quite to the umbilicus, I would certainly prefer hysterectomy. Notwithstanding I have succeeded thus in enucleating very large tumors.

Simple division of the capsule or capsule and cervix with the guarded knife or Paquelin's cautery-knife, and the subsequent free administration of ergot, may be tried in almost any case, and if the growth is once started from its bed, traction will give great aid. Prompt delivery is the only safeguard against septic poisoning. In skilful hands, the spoon-saw of Thomas is the most effective of all instruments for the immediate enucleation of the tumor. After the removal of the growth, the uterus should be frequently washed out with hot water containing a disinfectant in solution. The surgical treatment of hemorrhage occurring in cases of interstitial and submucous fibro-myomata, prior to the removal of the ovaries and Fallopian tubes, by Mr. Lawson Tait, was confined to division of the cervix uteri and division of both capsule and cervix at the same time. In division of the capsule, the divided blood vessels retract and become occluded. Why division of the cervix sometimes controls the hemorrhage I can not explain, but from personal experience I know it does it.

In many cases removal of the ovaries or ovaries and tubes holds out the greatest promise. After the establishment of the menopause, these tumors frequently atrophy by reason of fatty degeneration. The removal of the ovaries or ovaries and tubes usually establishes the menopause. Possibly it does more. Removal of the ovaries and tubes is now the established procedure. Mr. Lawson Tait found a monthly bleeding persist after Battey's operation, oöphorectomy, and subsequently included, when possible, the tubes in his operation. His experience and that of others is that the operation not only arrests the hemorrhage, but that the growth is also arrested, and in many cases disappears in from six to twenty-four months. He considers the time to get the full effect of the operation to be two years. If cystic degeneration has occurred, or the growth is malignant the operation does no good. It is to cases of small non-cystic fibro-myomata that the operation is applicable. The operation is now thoroughly established.

Tait's Operation.—The removal of ovaries and tubes. His manner of doing his operation is as follows: the abdominal wall is opened by an incision in the median line above the pelvic symphysis. When the peritoneum is reached, he controls all bleeding in the wound with ordinary hemostatic forceps. Picking up the peritoneum with a pair of forceps, he makes a small opening in it. Through this he introduces one finger, dilates or tears the peritoneum, and passes in a second finger; with these he explores the pelvis for the ovary, first on the left side; if adhesions exist, he tears them up with his fingers if possible, and brings through the wound the ovary and tube, and holds them with his thumb and fingers as you would a fold of your handkerchief. Through the broad ligament below the fingers, and of course under the tube, he passes a long handled needle with an eye near the point, armed with a strong silk ligature, its middle point resting in the needle's eye. He now drops the handle of the needle on the abdomen, and slips his right index finger in between the ligature and the shaft of the needle, and draws the double ligature farther through toward his assistant who seizes it. He then withdraws the needle. Taking hold of the loop, he carries it over the ovary and tube and places it between the free ends of the ligature, and winding them around his right hand, draws firmly upon them, and the ovary and tube are at once constricted with a double noose which can not slip. (This is known as the Staffordshire knot). The free ends of the ligature are now tied. He now seizes the pedicle with a pair or two of hemostatic forceps to prevent its escape, and a short distance above the

ligature, cuts the ovary and tube away. After carefully cleaning the peritoneal cavity of all blood, he closes it.

The operation of Mr. Tait, the removal of both ovaries and tubes, is applicable to all cases of small or medium-sized interstitial, submucous and subperitoneal non-pediculated tumors. When the tumor has become so large as to drag the uterus up and lengthen the cervix sufficiently to make a pedicle of it, supra-vaginal hysterectomy becomes a feasible and easy operation. The general adoption of Tait's operation will diminish the necessity for future hysterectomies.

Several methods of supra-vaginal hysterectomy are practiced:

1. The method established by Péan, Köberly, Bantock and Hegar, in which the pedicle is secured extra-peritoneally in the lower angle of the wound.

2. The methods inaugurated (and being established) by Baer, Baldy and others, in which the pedicle is secured outside of and below the peritoneum.

3. The method established by Henry Byford, of opening the anterior wall of the vagina and drawing the pedicle into the vagina, and thus securing it extra-peritoneally.

First method: This extra-peritoneal method is as follows: An incision is made in the median line as long as may be required. All vessels are carefully secured, the uterus and tumor are turned out. Large warm sponges are pushed into the abdomen in front of and behind the uterus; some are also laid over the wound, closely surrounding the neck of the uterus. A steel pin four inches long is passed through the cervix and adherent tissues at right angles. Beneath the pin a wire constrictor, or an elastic ligature, is now placed tightly around the cervix above the bladder; the ovaries and tubes are included in the constrictor. An extra sponge or two are now crowded in against the neck, and with a knife the uterus and tumor are cut away, an inch above the constrictor. Care must be taken not to wound the bladder. Reëxamination of the wound for bleeding points is now made, the sponges are removed from the belly, and the peritoneum is carefully stitched around, and to the cervix below the constrictor. From the cervix to the top of the wound, the peritoneal edges are carefully united with a catgut suture. The entire wound is now closed down to within three-quarters of an inch of the cervix; the cervical canal is now touched with the Paquelin cautery, its edges are trimmed out, and the circumference of the stump is reduced by several cross sutures. Small bits of antiseptic gauze are now carefully packed in around the stump close to the ligature, and filling the portion of the wound unclosed. Over the stump a quantity of subsulphate of iron or iodo-tannin is poured and covered with more gauze. A roll of cotton and a bandage completes the dressing, which may remain undisturbed for from seven to ten days.

The results following this operation are good, and the only objection of any weight to be urged against it is, that the period of convalescence is protracted, usually from thirty-five to forty-five days. I never saw hernia follow it.

Second method: This method has been developed by Dr. Baer and Dr. Baldy. Baer describes his technique as follows: "After the required incision is made all existing adhesions of omentum, intestines, etc., are separated in the usual way, and the tumor lifted out of the abdominal cavity. If the incision has been an unusually lengthy one, several sutures are then placed at its upper end for the better protection of the intestines. The patient may now be elevated to the Trendelenberg posture, if deemed best, and the parts thoroughly studied, so that a clear idea as to the character and location of the tumor and pedicle may be obtained before the ligation and separation are begun. The first step in the operation is the passing of a single silk ligature through the broad ligament near the cervix. This ligature is again made to transfix the broad ligament near its outer edge, to prevent slipping; it is then tied. A stout pedicle forceps is next placed under the Fallopian tube and ovary and made to grasp the broad ligament, for the purpose of preventing reflux from the uterus. The ligament is now severed just below the forceps, the incision being carried close to the tissues of the tumor.

"If deemed necessary, another ligature is now passed through the broad ligament farther down along the side of the cervix. This ligation and cutting are now repeated on the opposite side. The knife is then run lightly around the tumor an inch or two above the peritoneal reflexion of the bladder in front, probably a little lower behind, and the severed edge of the peritoneum stripped down with the handle of the scalpel for the purpose of making peritoneal flaps. The next step is a most important one; it is the ligation of the uterine arteries. This is done in the broad ligaments, outside of, but close to, the cervix. Care must be taken to avoid the ureter on the one hand and the cervical tissue on the other. The ligature may be either placed within the folds of the severed ligament or, which is preferable, made to encircle the double fold of the ligament and artery in one sweep; action here will depend upon the size of the pedicle and the consequent separation of these folds. The constant traction which is made upon the pedicle by the assistant who is holding the tumor, serves to draw out and elongate the cervix after the peritoneal covering has been incised, and thereby to permit deeper incision into the neck, which is next amputated with the knife by a sort of cupped incision. The stump is now grasped with a small volsella forceps, and further trimmed and reduced, if necessary, so that the entire supra-vaginal portion is removed before it is dropped back into the pelvis. The cervix being now released, it immediately recedes and is drawn deeply into the pelvis by the retractive and elastic properties of the vagina, where it is buried out of sight by the peritoneal flaps covering it. These flaps have been rendered so taut by the ligatures which have been placed that usually, as the cervix recedes into the pelvis, they close over it like elastic bands. The cervix is now in its natural position, and without a ligature or suture in its tissues. The operation is finished by infolding the edges of the peritoneal flaps, which may be secured by Lembert sutures if necessary. I have not found this necessary, if the ligatures which secured the uterine arteries had also grasped the severed folds of the broad ligaments, for this so tightens them that the sides are brought forcibly together when the cervix is drawn under. The bladder and surrounding tissues aid also in closing the pelvic cavity. Nothing whatever is done to the cervical canal. The portion of the broad ligament embraced in the first ligature is the same structure which forms the ordinary ovarian pedicle, minus the Fallopian tube. The other

ligatures close the opened broad ligaments, as a rule. If any other vessels are found spurting they are, of course, ligated. I have not found it necessary to employ the temporary elastic ligature." Baldy's method is very similar.

Third method: This is the method of Dr. Henry T. Byford. He first ligates and separates the broad ligaments and any existing adhesions of omentum or intestines, then separates the bladder and uterus. A temporary elastic ligature is placed around the cervix; the tumor and body of the uterus are amputated. The stump is hollowed out and so firmly stitched that hemorrhage is arrested; the elastic ligature is now removed. The other ligatures are left long. An opening is made in the anterior wall of the vagina, through which the stump is drawn by the long ligatures, which are reached by a pair of forceps passed up the vagina from below. The bladder peritoneum is now stitched with catgut to that covering the cervix. The stump now in the vagina receives appropriate treatment.

INTRA-PERITONEAL METHODS OF TREATING THE PEDICLE.

The success which has characterized ovariotomy since all operators have returned to the intra-peritoneal method of treating the pedicle, stimulated the operators on the continent of Europe to endeavor to discover a method whereby the stump of the uterus in supra-vaginal hysterectomy might be left within the peritoneal cavity.

Two points were to be attained:

1. To secure the patient against great loss of blood.
2. A method of forming a pedicle free from the danger of subsequent hemorrhage.

The method of Prof. von Billroth is to leave the stump in the cavity of the abdomen. Ligatures are placed on the blood vessels as they pass through the uterine ligaments to the uterus. When the ligaments require division, they are tied at two points and divided with Paquelin's cautery. The neck of the uterus is seized above the vaginal attachment with a pair of powerful lock-handled forceps, and literally crushed. In fact, I have seen him bite the uterus entirely off with these forceps. In the deep crushed groove thus made, a double ligature is passed through the cervix; each half is firmly tied in the groove and the ligatures are cut short. Above this ligature the uterus is amputated; the sides of the stump are securely stitched together, and the stump is dropped in. When the patient is anemic, or loss of blood is a vital point, he compresses the tumor and uterus with an elastic bandage, after the method of Dr. Leon Labbe, driving all the blood possible into the body.

Koeberle, who instituted the "serre nœud" used in the operation described, abandoned it, and leaves the stump of the uterus in the abdomen.

The method of operating by Schröder was also intra-peritoneal. He aimed to operate with as little loss of blood as possible, and to secure the pedicle against subsequent bleeding. The first point he attained by means of the elastic ligature, devised by Kleeberg, and first applied to the cervix uteri by Prof. A. Martin, placed temporarily around the supra-vaginal portion of the cervix uteri. If the tumor was a pedunculated subserous one with a reasonably-sized pedicle, he tied it in halves and cut the tumor away. If the pedicle was short and thick, he cut it off close to the uterus; if interstitial, he cut the capsule and peeled out the tumor, or cut a V-shaped piece out of the uterus. When the cut surface on the uterus was too flat to close with sutures, he hollowed it out. The wound in the uterus was then closed with several layers of carbolized silk sutures. The last layer brings the peritoneum neatly over the wound. When the elastic ligature was removed no bleeding occurred. When possible, he spared the uterus and its appendages. Tumors developing downward to the cervix and pushing the appendages upward present no pedicle upon which to apply the elastic ligature. In such cases he ligated at two points, and divided between the ligatures, the opposing uterine ligaments and blood vessels. This done on both sides, the tumor or tumors were separated from the surrounding tissues, and the elastic ligature was secured around the base at, or above the junction. The uterus and tumor were now cut away above the ligature. The open uterine canal was disinfected with a strong carbolic solution, the stump was hollowed out or made V-shape, and united with several rows of silk sutures, the last uniting the peritoneum over the stump. A few deep sutures were placed at the sides, to catch if possible the points where the large vessels were divided. The elastic ligature was then removed. After a few moments' delay, if any bleeding points appeared, a few more stitches were put in to control them.

When the tumor has developed from the lower part of the uterus and extended into the cellular tissue, and risen upward, carrying the uterus with it so high that the os can not be reached per vaginam, a grave case is presented. The surrounding ligaments and vessels are first double ligatured and divided. The elastic ligature is placed around the cervix and the uterus is amputated, and the tumor is shelled out of its bed. The stump of the uterus is treated as above described. The great cavity out of which the tumor was shelled may be left open or closed, if possible, with sutures, and drained either by the abdominal wound or vagina. Schröder and Martin preferred the former route. When the bladder is adherent to the front of the tumor and carried high up, he extended the incision to a higher point, and then proceeded to enucleate the tumor from the posterior wall of the bladder. Before closing the abdominal wound the bladder and stump of the uterus were united. Martin operates by methods similar to those of Schröder.

The intra-peritoneal method of Zweifel is probably the best of its class. It is known as the continuous fractional ligature.

Says Pozzi: "Under this name, Zweifel has described a method of suturing the pedicle which certainly assures better hemostasis than Schröder's, but seems, *a priori*, inferior in technique as regards primary union of the stump and its chances of sloughing; however, the good results published by Zweifel demand attention."

In ten cases with his method there was but one death when he published his book (1888), and in February, 1889, he announced a series of twenty-two successful cases. His technique is as follows: for all his ligatures he employs sterilized silk and a needle furnished with a groove which resembles Reverdin's; the point is blunt. He first ties the broad ligaments with chain sutures. He then divides the ligaments and applies the elastic cord, the ligatures nearest the uterus being left long and the elastic cord is passed over them.

In the excision of the tumor, a small musculo-peritoneal lip is preserved both before and behind, and the cavity of the uterus and cervix are cauterized with the thermo-cautery. A sharp needle is then threaded and a series of partial ligatures passed. The peritoneum is closed by a series of superficial sutures. Drainage through the vagina by the cross-tube is necessary only when there is persistent oozing. *Ablation of the entire uterus, including the neck*, is pushing its claim for first place in the evolution of surgical treatment for fibromata. Martin of Berlin, was the first to do vaginal hysterectomy for small fibroids. This operation, for cancer, as well as for fibroids, paved the way for the entire removal of the uterus for fibroids by abdominal section. Bardenhener and Eastman took the initiative; Krug, Polk, Hall, Mann, Sutton and others have followed it up, and complete removal of the entire organ is practiced successfully.

The methods differ but little; separation of all adhesions, the broad ligaments and bladder, proceed in order, Douglass' pouch is opened, all bleeding vessels are secured. Some operators leave the ligatures long and draw them down through the vagina. The severed ends of the broad ligaments are drawn into the vagina, which is lightly filled with iodoform gauze. Eastman prefers to close the opening into the vagina.

Trendelenberg's posture and the staff of Eastman have made the operation much easier and safer than it formerly could have been.

It is now apparent that through laparotomy there are four ways of dealing with uterine fibroids. These are as follows:

1. Supra-vaginal hysterectomy.
2. Removal of the tumor leaving the uterus.
3. Leaving the uterus and tumor and removing the uterine appendages.
4. Total removal of uterus and tumor.

Which method shall be selected?

In fibro-cystic tumors, entire removal of the tumor is the only proper method, but such is not always the case with a solid tumor.

Every case of fibroid tumor ought to be considered on its own merits, and no rule of surgical procedure should be applied to all cases, as in ovarian cysts. It is very difficult to find general decisive principles, or hard and fast rules, regulating the indications for this operation. A woman may be bleeding to death, suffering pain from mechanical pressure, rendered an object of charity, be dying from nervous exhaustion, the result of the tumor, but the operation suitable for the case will not always be the same. In one case enucleation may be possible; in another, the removal of the ovaries and tubes may be the proper thing; in another, supra-vaginal hysterectomy; and in another myotomy or total ablation of the uterus.

The utmost care with reference to any of these operations is absolutely necessary. A clean operator and assistants, a clean patient and clean nurses, a clean room and clean tools and sponges, are of the utmost importance. The earlier, if necessary, the removal of the ovaries and tubes is accomplished the better. Once the tumor has attained considerable size the difficulty of the operation is increased. Early in the disease the incision may be very short, but later an extensive incision may be necessary. Early in the disease the ovaries and tubes are generally easily reached; later they may be under and behind the tumor. Both ovaries should be removed or neither. If the tumor is causing bleeding, or growing, or affecting the patient's health, and can not be enucleated per vaginam, the sooner the ovaries and tubes are removed the better, if the operation is suited to the case.

Tait's operation is recommended by Thomas, for large tumors. Done in such cases the result will always be uncertain, to say nothing of the difficulty of the operation. Large fibroids frequently contain cavities, which eventually become growing cysts, and have already contracted adhesions through which they are largely fed with blood.

Such, however, is the ordinary effect of the menopause on these tumors when non-cystic, that in cases of women approaching fifty years who are in fair health and doing well, it is wise to abstain from any operation; but for young women the reverse is the case. In cases requiring operation, in which it is not possible or desirable to trust to the removal of the ovaries and tubes, hysterectomy should be accomplished.

When in doubt as to the propriety of operating in many cases by hysterectomy, it is well to recall Keith's language: "Were I anxious for operations I might ere now have done two or three hundred during the last ten years; and from what I know and hear, a great number of fibroids are removed, or attempted to be removed, without the slightest necessity." He cites the following as suitable cases for operation:

1. Rapidly growing tumors in young women.
2. Fibro-cystic and suppurating tumors.
3. Soft edematous fibroid tumors.
4. Many cases of large bleeding fibroids of any age.
5. Fibroids surrounded by free fluid, the result of peritonitis, provided the fluid reaccumulates after tapping two or three times.

Dr. Mann, in a very valuable paper on "The Removal of solid Uterine and Ovarian Tumors," advocates the removal of fibro-myomata when they act as neuromata. Such cases are doubtless rare, and I can add my own testimony to his in reference to their importance, and indorse his statement: "To leave such patients to a slow, lingering, agonizing death seems to me scarcely justifiable, when so good a chance for relief and life seems to be afforded."

Pregnancy and labor are occasionally complicated by the existence of a fibro-myomata. The preservation of the life of the mother may depend upon the removal of the growth, the induction of premature labor or Cæsarean section.

Dr. James R. Chadwick published in a paper read before the Massachusetts Medical Society, at its annual meeting in June, 1885, a report and summary of ten cases of pregnancy and labor complicated by existing fibro-myomata.

Of these cases, one miscarried, two died, and seven recovered; in all of the seven cases of recovery the tumors were subperitoneal. In the remaining three cases the tumors were submucous; two of these died, and the third barely escaped death.

The question of surgical operation for the removal of these tumors during pregnancy is not a very difficult one to solve. When the tumor is subperitoneal and pediculate, pregnancy is not a barrier to its removal. Interstitial and submucous fibroids located above the internal os, can not be attacked with-

out destroying the fetus. When the tumors are developed in the cervix uteri, they should be dealt with according to preceding rules, regardless of the existing pregnancy, provided they are sufficiently large to obstruct labor.

Fibro-cystic myomata are probably more frequent than is generally supposed. Counting the abdominal sections, about 450, for all sorts of tumors, which I have witnessed, 15 were fibro-cystic myomata, and some of the women were beyond the menopause.

Péan and Urdy trace the history of gastrotomy for the removal of uterine tumors through three distinct periods.

The first, which comes down to 1843, comprises those cases in which surgeons, having opened the abdomen with a view to ovariotomy, and finding the tumors to be uterine, shrunk before the consequences of amputation of the uterus, and closed the wound.

In the second period, that of trials and groping, which comes down to 1863, during which ovariotomy made great advancement, several surgeons, Atlee, Heath, Charles Clay and Parkinson, finding uterine tumors where they had expected ovarian, did not hesitate to remove them.

In the third period, beginning with April, 1863, Koeberle, in the presence of a doubtful case, prepared for either ovariotomy or hysterectomy. Storer, Péan, and others deliberately resorted to gastrotomy for the purpose of removing the uterus affected by tumors.

Fifty years have elapsed since 1843, the end of the first period, and we are now only planted firmly on solid surgical ground with reference to these tumors, be they solid or cystic.

The credit of this great triumph in surgery belongs very largely to Kimball, Koeberle, Péan, Keith, Bantock, Schröder and Billroth, and in later years to Bardenheuer, and others, some of whom I have mentioned. The operation was of English birth. Granville did the first hysterectomy in 1837. Heath and Clay of Manchester, operated between 1843 and 1849. Burnham of Virginia, operated successfully in 1853. Since the latter date the progress has been continuous.

CRITIQUE OF MACROSCOPIC EXAMINATION OF SPECIMENS REMOVED IN THIRTY-TWO CONSECUTIVE LAPAROTOMIES.

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The modern success in abdominal surgery excites the admiration of all. It is the outcome of systematic experiments, observation and reasoning. Its success at one time was thought to be due to antiseptics, i.e., chemic solutions which destroyed a vegetable germ. But we know to-day that simple cleanliness accomplishes all. We obtain cleanliness to-day by heat and water, two simple elements. The spray and chemic lotion have passed into oblivion with many others found not essential.

Modern research sifts matters until essentials are found and non-essentials are eliminated. The most delicate of all surgery is that of the peritoneum, which is almost as important to the human economy as the brain. The immediate and remote effects of urgery on the peritoneum should be always held in mind. The greatest of lymph sacs brooks no insults without records. The peritoneum surrounds the visceral organs which hold body and soul together by their wonderfully balanced functions, and pathology which impairs this function should be removed. In the following cases some of the macroscopic pathology will be given to show etiology, pathologic process and final results.

Some views will be presented as to the anatomic and physiologic nature of reflexes. Some of the logical reasons for the removal of abdominal tumors will be presented.

Anesthetics.—Chloroform narcosis is such a rapid, beautiful and quiet affair that I determined to give it a good trial. It acted very nicely in England where I saw scarcely any trouble in a large series of cases. It acted nearly as well in Germany and Austria, where I witnessed a large number of patients narcotized. But I found that we could not use it with the same impunity in this country. Our chloroform does not act as safely on patients as in England and Europe. I have come to this opinion from practical experiments on dogs and careful observation on humans. In chloroform the heart fails, and quite a number of dangerous scenes for five years have made me almost abandon it in laparotomy.

Again, anesthetizers are, too frequently, untrained men who do not realize the terrible significance of keeping constantly before them the pulse, pupil and respiration.

Ether, it must be admitted may induce bronchitis and nephritis but it is the safer. We frequently employ a mixture of alcohol, chloroform and ether. It must be borne in mind that the narcosis is a very important matter in cases exhausted by the presence of tumors, suppuration or worn out by pain. Again, I have shown that many women who have tumors are afflicted with pathologic hearts, livers, kidneys and lung malnutrition.

The preparation of the patient is very important on account of the results. The urine is carefully examined for urea which is one of the standards to decide whether laparotomy should be performed. The kidneys, genitals and peritoneum are very intimately associated anatomically and physiologically, especially by nerves and blood vessels. A disturbance in one is soon followed by a disturbance in another. The kidneys and ureters both, come from the same organ, the Wolffian body. Sometimes a vaginal hysterectomy is followed in a week by death from nephritis. We examine carefully for urea for several days previous to the operation.

The urea varied from four to twelve grains to the ounce. A few days of rest soon brought about a more regular quantity of urea. I think it is not safe to do laparotomy with less than five grains of urea to the ounce. In sudden demands to operate, no time was given to find urea, but such cases were generally fairly healthy, e.g., rupture of tubal pregnancy or sudden invasion of pus. It was shown that a woman who would lie in bed for three days previous to the operation would fare better in the results, the urea would become more regular, her bowels were moved from ten to fifteen times—until the bile glistened in the stool. Her heart stood the operation better. Her abdomen was well scrubbed and a compress bound on the night before the operation. In regard to drain tubes, I used them only where pus was found or extensive adhesions were torn up. As expe-

rience increases with the years, I use less drain tubes in laparotomy. The drain tube we employ is one of my own device manufactured from aluminium, open at the bottom, perforated with round holes for one-third of the distance up and flanged at the top. The drain tube was employed from ten hours to several days. When less than a dram of fluid an hour was drawn from the tube it was removed. I believe the tube increases the danger of infection and hernia to a very considerable extent.

The patient is not allowed to get up before the twenty-first day. The amount of fluid given to the patient after the operation, I am inclined to increase. I give them an ounce of fluid an hour immediately after the operation, and soon increase it to two or three ounces an hour. Fluids flush the kidneys. The second or third day I use enema and Mg. SO_4 to secure bowel movements and intestinal contractions. Distension means intestinal paresis, and abdominal pain generally means excessive gas accumulation. The recommendation to use nux vomica to stimulate intestinal contraction was not followed. The Trendelenberg position is employed in nearly all cases. This position often embarrassed the heart by abdominal viscera pressing on the diaphragm. Four abdominal fistulæ followed which lasted many months, and two are not closed yet (six months after operation). These fistulæ arise in old cases of infected tumors.

As most of the principles employed will arise in each case, I will give an account of them in the following cases:

Case 1.—Miss H. L., age 24. She had had a laparotomy about eight months previously and the physician reported that the tubes and ovaries were removed. She became infected and lay in bed some two months with peritonitis. Dr. Franklin Martin kindly consented to assist me in the operation. On opening the abdomen the intestines were found almost a solid mass, held together by exudates. The uterus was about six inches long and proportionately enlarged. The lower portion of the uterus was so firmly attached to the left pelvic bony wall that I could move the whole woman by moving the uterus. Multiple cysts as large as a child's head existed on each side of the uterus. After careful examination and consultation with Dr. Martin it was deemed inadvisable to remove the uterus, tubes or cysts on account of the dense adhesions. The large cysts were drained with gauze and stitched to the abdominal walls.

Among hundreds of operations seldom have I witnessed such widespread and dense adhesions. A special reason for not tearing up the adhesions was that malignancy was suspected. She recovered quite well. But her subsequent history was of great interest. I kept trace of her for one year. I made the distinct observation in her case of the repeated rupture and formation of cysts without causing peritonitis. The abdomen would swell and become tense and then suddenly flatten out. As soon as the abdomen flattened out her pain disappeared. But I also noted that she had profuse diuresis for several days. This drained the cyst which ruptured into the peritoneum through the kidneys. I had made this same observation while experimenting on dogs three years previously. While operating on dog's intestines I would occasionally fill the dog's abdomen full of warm water and then close the abdominal wound. The dog would urinate profusely for two to four days. The water was absorbed by the peritoneal stomata and eliminated by the kidney. It is quite rare to observe the repeated formation and rupture of cysts in the abdominal cavity, especially when it is followed by no peritonitis. I once drew a few quarts of fluid from the cysts through the vagina but the cysts quickly refilled. At the puncture a dense adhesion formed so I concluded not to puncture any more but to wait until the filling of the cysts gave her such pain that she would seek another operation.

I wished to have another operation for two reasons: 1, it could be noted that the girl would die if not relieved; 2, also noted that the formation of the cysts had torn the uterus from its dense, firm attachment and pushed it up into the abdomen, so that six months after the operation convinced me that the uterus and appendages could be removed. But I watched her every few weeks for a whole year, and her case presented a volume to any gynecologist. The cysts would fill until the abdomen stretched like a drum head. Such stretching and pushing elevated the whole uterus above the pelvic brim although its adhesions were such that they would hold 150 pounds. The pain was intense at the climax of tension. Suddenly one of the cysts would break and the abdomen would flatten. Pain would cease. Profuse diuresis would ensue. No fever arose. Slowly the cysts would refill. The greatest volume of information in this case arose from the pressure and irritation of the cysts on the viscera through reflex action. The effect of irritation and pressure on this young woman were:

1. Kidney disturbance; the irritation passed from the diseased location (pelvis) up the hypogastric plexus to the abdominal brain where it was reorganized and sent over the renal plexus to the kidney.

The kidney was forced into three troubles: it secreted *excessive urine*, *deficient urine* or *disproportionate* quantities of its elements. Every one of these conditions continued with this girl. She made large quantities at times, and again small quantities of urine loaded with salts and the irregular quantities. Thus the kidney was under continual irritation from the tumors. The irritation was transmitted to the kidney by reflex action by way of the hypogastric plexus, abdominal brain and renal plexus, i.e., a distinct anatomic route.

It would not take long to produce diseased kidneys if such irritation were long persistent. This effect on the kidney by reflex action from the cysts induced me to desire another operation. But I never requested her to undergo another operation. Her own condition (pain and inability to work) forced her to ask it.

2. The second effect from the cysts, I observed in this 24-year-old woman was constipation and indigestion. Her appetite was poor and capricious and at times wanting. The digestion was disturbed by the irritation passing up the hypergastric plexus, and being reorganized in the abdominal brain and sent out to the digestive tract by way of the gastric plexus (to the stomach), by way of the superior mesenteric plexus (to twenty feet of small gut) and by way of the inferior mesenteric plexus (to the large bowel). The irritation thus reflexed to the digestive tract would disturb sensation, motion and secretion of the whole canal. The result on the tract was *increased*, *decreased* or *disproportionate* secretions. In fact, the indigestion was so persistent that malnutrition soon appeared. Malnutrition resulted in some eight months in anemia. Curiously enough she never became neurotic. If she was allowed more time under such disturbances, neurosis would finally appear.

3. The third effect I noted this year of visceral irritation from the tumors was cardiac disturbance. The heart performed its action rapidly and irregularly. The irritation from the tumor passed up the hypogastric plexus to the abdominal brain where it was reorganized and transmitted up the great splanchnics to the three great cervical sympathetic ganglia, where the forces were reorganized and sent direct to the heart. The pneumogastric rules the steady rhythm of the heart, while the sympathetic rules the rapidity of the heart. So that disturbances of the kidney, digestive tract and heart arose from a year's irritation of the tumors. The lungs, liver and spleen so far had not manifested any disorder perceptible. She was incapacitated from labor a whole year until the next operation.

Tumors demand removal from reflex irritation through the sympathetic nerve. An abdominal tumor will cause fatty degeneration of the heart, indigestion, malnutrition, anemia, neurosis, fatty degeneration of the liver, irregular action of the lungs (asthma) and degeneration of the spleen —all through reflex action on the abdominal brain.

Case 2.—Mrs. M., age 54. She was referred to me by Dr. A. R. Martin with a diagnosis of cancer of the cervix. The hemorrhage was quite profuse and continuous with a distinct odor of decomposition. I did vaginal hysterectomy at the Woman's Hospital with the kind assistance of Dr. Franklin H. Martin. I used the ligature. The patient recovered, but I wish to note a peculiar point in regard to temperature. In twenty hours her temperature sprang up to 104; pulse was about 85. This rapid change of temperature was not due to sepsis, but to disturbance in the heat centers (reflex) from wounding and constricting the great hypogastric plexus. It was a neurotic rise of temperature. It fell suddenly in ten to fifteen hours. It may be that the injury inflicted on the hypogastric plexus by ligature is reflected to the me-

dulla or heat center and inhibits the action. At any rate the heat center lowers its tone and runs riot until it recovers from the shock of the ligature. The operation was done eighteen months ago. The cancerous mass has returned in the stump at present as large as a hazel nut, and she has begun to bleed easily again.

From the clinical and macroscopical manifestation I diagnosed cancer of the cervix, with a fibroid tumor three-quarters of an inch in diameter situated in the cervix in the site of the cancer. This specimen was warmly discussed in the Chicago Pathological Society by Drs. Van Hook, Hektoen and Angear. The opinions were divided between sarcoma or cancer. This discussion proceeded, even, with excellent specimens of the tumor under the microscope prepared by Dr. Angear. Dr. Angear has carefully worked it out, and I fully agree with him that the specimens which he so accurately prepared are cancer.

The manner of return (eighteen months and slow) show it to be cancer. If it were sarcoma it would return and grow rapidly. Recurring sarcoma grow with the rapidity of an avalanche. This shows that the microscope can not be relied upon in early diagnosis. In Vienna I have known of a dermatologist, a gynecologist and a pathologist in consultation over a disease of the labia, but utterly unable to agree as to the kind of disease they were examining. Disease is simply a change of structure, and there are early stages when clinical symptoms or the microscope will not decide its nature. Time alone will tell.

I am opposed to vaginal hysterectomy for cancer when the disease is advanced in the broad ligaments to any considerable extent. It does not elevate surgery and only shatters the renewed hopes of a despairing patient. I believe, also, that many of the reported cases of uterine cancer cured by vaginal hysterectomy were mistaken diagnoses. Cancer is a disease which will not be cured, whether in the uterus or other location. But with the incipient cancer of the uterus—in the early stage of cancer—vaginal hysterectomy is eminently proper and highly hopeful. It is the proper method of treatment.

Case 3.—Mrs. P., age 32. Two children, the youngest 6. Abortion four years previous. She had been ill since, more or less. Examination revealed the uterus fixed with a mass of exudation on its left about the size of a cocoanut. She took hot douches at home for a month. She then went to the Woman's Hospital and lay in bed some ten days. Douches and rest cleared up two-thirds of the exudate. I operated in September, 1893, removing the tubes and ovaries. She had much pain at the monthly. The tubes were very crooked and convoluted. She made a good recovery, but she was tubercular and it appeared to me that the tubercular lungs became slightly worse. However, ten months after the operation she is well in the pelvis and fairly well in the lungs.

She became very neurotic from her four years' invalidism, and would have hysterical spells. This case was a very good lesson as to what preparatory treatment will do. It made the exudate less, her recovery smoother, the operation easier and sequelæ less apt to occur. Dr. Mary Shibley and Dr. Marie White assisted me in the operation.

Case 4.—Miss A., age 22. A history of gonorrhea was fairly evident. She was sick in bed for eleven weeks and pus had flowed from the rectum for six weeks. The case was referred to me by Dr. Chas. Simons and Dr. D. T. Nelson. I operated on her at the Charity Hospital, assisted by Dr. Franklin H. Martin and Dr. Mary Shibley. Vaginal examination revealed the whole left half of the pelvis a solid mass. On opening the abdomen, a tumor the size of a cocoanut presented, lying in a dense mass of exudates and old adhesions. By carefully separating the adhesions and enucleating the tumor, I finally brought it into the abdominal incision when its terribly foul contents burst and flowed among the intestines. Now, came a very peculiar feature in the case. The left tube was about nine inches long and so large and dilated that it actually resembled a gut. So near did it resemble a gut that we could not decide what it was until it was traced right to the uterus. Both appendages were removed. But no hole could be found in the gut, rectum, sigmoid or small intestine, so I closed the abdomen with much misgiving for fear of leakage from the old fistula which had discharged pus for six weeks through rectum. Drainage was employed. To my surprise and delight she made a good though not rapid recovery. She walked away quite well in a month. At present writing she has a small abdominal fistula, ten months after the operation. She is in splendid health and has gained some twenty-five pounds in weight.

The specimen was from a slow progressive pathologic process. The large tumor I made out to be an ovarian abscess which had perforated into the rectum. Its contents had a fecal odor. The left tube was some nine inches long and looked like a piece of small intestine. Its peritoneum showed remnants of perisalpingitis, old adhesions, flakes of lymph and thickened from inflammatory exudates. The reason the tube was so long was because the ovary in enlarging had stretched it. The muscular wall of the tube was not very much changed except, perhaps, the longitudinal muscle layer was increased some. The muscular wall was mainly thickened by inflammatory exudates during successive inflammatory exacerbations. The essential and main changes occurred in the endosalpinx—the mucous lining of the tube. It showed all stages of inflammation. Parts were totally destroyed but most, partially. Some spots were denuded and some showed the progressive, infectious catarrhal process—gonorrhea.

The tubal lumen was irregularly dilated. The method of closure of the fimbriated end was no doubt the chief reason of the ovarian abscess. In closing, a part of the fimbriæ were left outside of the tubal lumen, while the remainder were turned in. Now those left in the abdominal cavity kept up a continual chance for renewing infection of the pefitoneum. The ovary is nearly always infected by the tube, and is, therefore, a secondary disease. This ovary was cystically degenerated, i. e., the gonorrheal process had passed from the tubal mucous membrane to the germinal epithelium of the ovary, and then passed on to the membrana granulosa which lines the graafian follicles. The gonorrheal pathologic process had then disturbed the normal membrana granulosa, and these little cysts had abnormally dilated. The opposite tube and ovary were in an incipient stage of salpingitis and chronic ovaritis. The endosalpingitis had sufficiently started and existed long enough to have involved the ovary—it was cystically degenerated. The muscle of the tube and its perisalpinx or peritoneal covering was almost normal. I removed it because the gonorrheal process was well rooted in both endosalpinx and ovary.

This patient had suffered so many recurrent attacks of pelvic inflammation that her peritoneum was tolerant to a severe and dangerous operation. The operation absolutely saved her life and she is made a useful citizen.

Case 5.—Operated on Feb. 28, 1893, at the Woman's Hospital. I was assisted by Dr. Mary Shibley and Dr. Marie White. She had been an invalid for six years. She was 36 years old. She aborted once, but had no children. She gave ample evidence of gonorrheal and syphilitic infection. She had refused operation six years previous, and was now a confirmed invalid, unable to earn her own living and deserted by the man who infected her. Examination per vaginam revealed old pelvic peritonitis. The roof of the pelvis felt like thick, slowly yielding leather. The uterus was fixed and on the left was a tumor the size of a small

hen's egg. On opening the abdomen the appendages were found small and atrophied. The tumor proved to be a broad ligament fibroid of a very peculiar nature. It had around it a distinct capsule which could be peeled off. The tumor was enucleated from the broad ligament with the greatest difficulty, shocking the patient considerably. The appendages were both tied off. The abdomen irrigated and drained. She recovered well for a week, when the temperature rose to 100 and 101 for some ten days. Pulse about 100. Her abdominal wound seemed to have insufficient vitality to heal well. She finally recovered with an abdominal fistula which is still open and has a suspicious appearance of malignancy. I have had cases where a fistula developed in the wound many months after operation.

Six months after the operation she looks fairly well, but the wound is not healed. The fistula is surrounded by thickened and hardened tissues which reach down into the pelvis. It may be of a syphilitic nature. It may be observed that such old invalids, with ruined nervous system and infected venereally, do not make brilliant recoveries, but she is lately doing better.

The tumor is a typical sample of a solid hard fibroid. It had no pedicle and was surrounded by a firm capsule. It gave the woman much trouble by becoming inflamed and tender quite frequently. This inflammation and tenderness was difficult to account for, as the tumor seemed to be a broad ligament fibroid. I mistook it for the ovary on account of its tenderness. I still think the tumor did not give the tenderness, but that the tube behind it had exacerbations and made the pain appear to be in the tumor. This tumor was considered to be an ovary for six years of treatment. Both tubes and ovaries were mere relics of an inflammatory process. The perisalpinx showed signs of old inflammation. It was thick, covered with old adhesions and flakes of lymph. The muscle of the tube had almost entirely disappeared and was replaced by hard, white connective tissue.

The endosalpinx or mucous membrane was nearly all gone, except in little patches. The pathologic process indicated that the original inflammation proceeded from the endosalpinx, and it and the muscular layer were almost entirely replaced by one-fourth of an inch of solid, hard, white, glistening connective tissue. The lumen of the tube was obliterated at intervals in its course, leaving small closed cavities with endosalpinx in all stages of disintegration. The fimbriated tubal ends were closed like the fused end of a glass tube. She had not menstruated for nearly two years. The ovaries were only one-third the normal size, shrunken, covered with scars, with a few cystically degenerated follicles lying in them. One ovary had pieces of calcium salts in it the size of a pea, and smaller ones the size of wheat kernels. It was a calcified ovary, not ossified. These fragments of calcium salts were secreted by the membrana granulosa just as an egg is coated by its calcium shell as it passes through the ova duct of the hen. I have observed calcified ovaries several times. The membrana granulosa will not only secrete lime salts but will secrete a cheesy matter which I have found scores of times in the unruptured graafian follicle. In this woman, gonorrhea had ruined her pelvic organs and syphilis was well grounded in her system. She visited my office Aug. 3, 1893, and was looking well. Her fistula had closed and about all infiltration had disappeared from the operative field. She was much more fleshy, and ruddy cheeks began to appear; pronounced herself as doing well.

Case 6.—Age 25, puberty at 13. Menstruation regular but painful, so she is always in bed for the first two days. The flow is profuse for three days. Examination revealed a mass on each side of the uterus. She was undefinedly ill for several years; married six years. She gave me a distinct history of gonorrheal infection from her husband some four years previously. She was an invalid and Dr. Stillians sent her to me to operate at the Woman's Hospital, where Drs. Shibley and White assisted. She had double pyosalpinx. We irrigated and drained. She made an excellent recovery and went home in the fourth week. I saw her six months after, and instead of appearing as an invalid she is healthy, ruddy and has gained some fifteen to twenty pounds in weight. Silkworm gut was used for abdominal sutures.

The tubes and ovaries are in a solid mass. The only difference in the two specimens is the difference in the closure of the abdominal end. One of the tubes opens right into the ovary like a clay pipestem into the pipe bowl. Its fimbriated mouth never closed but simply became glued on the ovary by inflammation. That ovary was smelted with the tube into a solid mass. It presented a tubo-ovarian abscess. The ovary was infected by the gonococcus through the tube—secondarily. The ovary was cystically degenerated.

The endosalpinx was almost entirely obliterated. It was smooth as leather; all epithelia had disappeared. The muscle was so much altered that considerable was crushed out, and the endosalpinx and the muscle were replaced by connective tissue. The lumen of the tube was irregular and about the size of the little finger.

The perisalpinx was much thickened, covered with adhesions and flakes of lymph. The tube was very crooked and wound itself around the ovary. The other tube and ovary presented an entirely different spectacle due to its mode of closure. The fimbriated end had all its fimbriæ nicely turned back into the tubal lumen, and they lay like the petals of a rose, neatly coiled up. This mode of closure retained the pus entirely in the tubal lumen, and the lumen would admit the thumb.

The tube—perisalpinx, *musculature* and endosalpinx—was similar in all other respects to its fellow from the gonorrheal process. But since the pus was retained in the closed tubal lumen, the ovary escaped the chief brunt of the infection. The ovary is only slightly infected, aad now as I write, it lies before me in the water, floating almost free from adhesions. It escaped the main infection because the ostium abdominale closed before infection had passed into the ovary, before the ovary became ruined forever. This ovary has some four graafian follicles in a state of cystic degeneration, but it is otherwise a fairly normal ovary with scarcely any adhesions on it, all due to the mode of closure of the fimbriated end of the tube. The tubal wall is over one-fourth of an inch thick of solid connective tissue. The appendages show the typical progress of gonorrhea.

Case 7.—Mrs. M., age 56. Four children. I operated on her six months previous for uterine cancer, removing the uterus and leaving the appendages and broad ligament. Drs. Shibley and White assisted me at the Woman's Hospital on Jan. 18, 1893. The lesson which I learned in this case was to remove the appendages, always if possible, in a woman over 35, along with the uterus, for Mrs. M. developed a parovarian cyst in the right broad ligament. If I had removed both appendages she would have escaped the second laparotomy. But in a woman under 35 I would generally prefer to leave the appendages in the pelvis to prevent a too sudden and precipitate menopause, i. e, a premature neurosis. The tumor as large as a child's head was easily removed and she made a good recovery. I will note here that I had used boracic acid sprinkled on the abdominal wounds on twenty cases, and four abdominal wounds suppurated and we traced it to the impure boracic acid. I

now use nothing but sterilized gauze, but I would prefer boracic acid above all other remedies as it desiccates the wound. It prevents the adhesion of the gauze to the wound stitches and dries up secretions. Boracic acid is a mere common commercial article, is put up by all classes of workmen and is apt to be impure. She was drained; pus in wound suppurated and attracted our attention, for it was a simple laparotomy. Since that time no wound has suppurated except a case of gonorrheal pyosalpinx.

The specimen removed was a parovarian cyst containing about a pint of clear urine-colored fluid. We know it is a parovarian cyst for we can enucleate it entirely from the broad ligament on account of its position. The Fallopian tube, some six inches long, is stretched over the superior circumference of the cyst. The cyst itself is a fibrous sac; the outside is smooth and glistens. Its outer layer is composed of fine, visible fibrous strands of white tissue interlacing in all directions. Its inner layer almost exactly resembles a human bladder which had been dilated for a long period. The large fibrous strands resemble a honeycomb meshwork. It looks like the inner meshwork of muscles lining the left ventricle of the heart. The fibrous strands run in bundles in curved directions, making circular depressions surrounded by whorls of strands of coarse connective tissue. Of course these were hypertrophied by a slow process. I would account for the curved bundles and whorls of connective tissue by the stretching and displacing of the longitudinal and circular layers of tissue surrounding the tubes of the parovarian out of which the cyst arose. I could find no trace of the parovarian, except a few small blisters lying just above the Fallopian tube where it is usual to find a few, viz: close to the abdominal sphincter of the tube. The fibrous strands of the cyst wall are plain to the naked eye and very large under the lens. The cyst had a short pedicle which did not open into its cavity. The tube of Fallopius is interesting, as it is stretched about six inches long and is closed at both ends, one end from the ligature six months ago and the one fimbriated end was closed by old pathologic process.

The perisalpinx is simply thickened but notes no inflammation. The *musculature* does not show much change. But the endosalpinx or mucous membrane shows a peculiar change. There is no fluid of any kind in the tubal lumen. The tubal plicæ look much like the wrinkles in an old person's face or in the scrotum. The fine epithelium is all gone, and under the high lens the endosalpinx appears like an oiled, clean shaven hogskin with many wrinkles in it. The tubal plicæ are all in perfect parallel rows and fall to either side like the ruffles of a linen garment. In the middle of the tube there is a break in the plical rows as if they ran into a sphincteral opening, and here I find the tube has an opening only covered by peritoneum. This depression is called a tubal hernia by some, but it is simple a deficiency of the tubal wall; an attempt at the foundation of a tubal ostium. I would call attention to the idea that here is a good chance to account for some tubal pregnancies, for the ovum may drop down into this little pit and there being deficiency of muscle it is not forced on by tubal peristaltis and so grows in the depression.

The lens shows beautifully the perfect endosalpinx subjected to senile changes. The tubal lumen is slightly wider than normal, but the stretching accounts for that. The rows of tubal plicæ have lost all villous appearances; no fringes appear; simply, bare wrinkled folds of endosalpinx in perfect order under the lens, only now suggestive of their old wonderful function of twenty years ago. After the parovarian cyst was enucleated a splendid view of the broad ligament came to sight. It had developed in it considerable muscular tissue and connective tissue. As I previously noted, after fifteen months Mrs. M's cancer is returned in the old stump of the extirpated uterus.

Case 8.—Miss N., age 19. Puberty at 13; menstruation regular with some pain; suffers much with frontal headache. Has leucorrhea. Has not been strong for four years. She is very tender on right side extending in pelvis and lumbar region. Bowels regular. She had been ailing for four years and at one time she was in bed for several months. She was sent to the Woman's Hospital where I repeatedly examined her for several weeks. Nothing very definite could be diagnosed, but on the right side and in the pelvis a swelling was felt. Her temperature varied and she was very tender. For two weeks I refused to operate, but afterwards several sudden rises of temperature and severe attacks of pain induced me to explore for two reasons: 1, appendicitis; 2, disease of the appendages.

It may be noted that a distinct history of gonorrhea was told, viz: sudden acquisition of burning and scalding in making water which lasted for several months. Leucorrhea was present. Frequent recurrent pelvic attacks occurred. I watched her daily for some three weeks and finally concluded to operate assisted by Drs. Shibley and White. I removed both ovaries and tubes also the vermiform appendix. She did well until the fifth day when a hematocele appeared on the right side about the size of a large apple. The temperature sprang up to 103. I had about decided to cut a couple of stitches in the abdominal wound and introduce my finger into the swollen mass when she suddenly began to recover, i. e., the pulse and temperature went down quickly to nearly normal. It is a question in my mind whether these swellings occurring after laparotomy on one side of the pelvis are not due to infection, i. e., they are exudates and not hematocele. The tension of this swelling gave her much pain by pressure on nerves and that may raise temperature. I shall carefully further investigate this subject, whether it be exudate from infection or hematocele which so frequently follows laparotomy.

In Mr. Tait's work, I think it occurred in about 12 per cent. while I was a pupil during six months. The girl left the hospital well, some six weeks after the operation.

The specimens, viz: the tubes and ovaries and vermiform appendix, I carefully preserved in pure alcohol without allowing them to be handled. When I wish to examine them they are dropped into clear water and become soft and normal again, except in color. Both tubes are very similar. They are very short, convoluted, with sharp spirally curved angles and smaller than normal. The uterine end is very small. The peritoneum does not dip down into the angles, but stretches from one tubal convolution to another, showing that the tube is quite free in the broad ligament or mesosalpinx. It appears to me that such a contorted, spirally angled tube in a virgin is a congenital malformation. If convoluted tubes are found in the multipara it is likely a reversion to the fetal type, due to subinvolution of the longitudinal muscular fibers of the tube. These fibers are chiefly enlarged in gestation. Several years ago I discussed and presented the subject of contorted tubes to the profession, noting that it was the chief factor in virginal dysmenorrhea. It causes tubal colic and is the phenomenon in pre-menstrual pain. This woman had quite typical, contorted twisted tubes and she suffered much pain at the menstrual period. Such tubes are difficult to drive menstrual fluid through by reason of so many bends and angles in the lumen, and thus is excited tubal

peristalsis and tubal colic. No changes can be noted in the musculature of the tubes, nor does the high lens indicate any pathology in the perisalpinx. Any pathologic changes under the eye or lens is to be found in the endosalpinx. The mucous membrane of the tube is swollen, a little edematous and is so luxuriant and abundant that it quite fills the lumen. In good sunlight under the lens it lies in folded wrinkles, not so uniform as it does in the general tube.

The tubal plicæ do not lie in distinct parallel folds, but such parallel folds are broken by whorls encircling depressions in the ampulla; such depressions lie as usual on the side of the tube not covered by the peritoneum. The depressions or pits appear to be embryologic attempts at the formation of accessory tubal ostia; for the bottom of the pit is generally only covered by peritoneum and where the tube is not covered by peritoneum the wall is made of slight muscular layers and connective tissue. These pits or whorls lying in the ampulla are in my opinion ample explanations for ectopic pregnancy.

The ovum falls in one of these depressions and there is no particular force to dislodge it as the muscular is deficient, so that peristaltis will fail to forward the ovum toward the uterus. Some of the tubal plicæ are one-quarter of an inch long. In this tube the abdominal ostium is very peculiar. The tube appeared to attempt to form a double abdominal ostium but the septum between the two abdominal ostia failed to grow or atrophied, and there is presented in this case a large irregular ostium having abnormally abundant and luxuriant folds of tubal plicæ.

The abdominal ostium is one and one-half inches across. The lens shows no break or ulceration in the endosalpinx; it is simply in the mild early stage of endosalpingitis. In this case the tubal plicæ of the endosalpinx are so luxuriant, abundant and swollen that the tubal lumen was well filled and fluids would be difficult to force through.

To force fluids through at the menstrual time would require considerable peristalsis which often amounted to tubal colic or pre-menstrual pain in her case. The ovaries were about normal, but I would call attention to the fact that there is a distinct corpus luteum in one ovary one-half inch across. But observe that she never had an abortion nor a child. The conclusions are just what I found several years ago by investigating animals, i. e., that the corpus luteum is no sign of pregnancy, and its elevation to any legal significance in courts of justice is a relic of false so-called authority.

The parovarium was normal except the dilatation of one of Kobelt's tubes to the size of a pea. Gartner's duct and the tubules were normal. The vermiform appendix was in a catarrhal condition. The mouths of its swollen glands were enlarged, red and had too much secretion. It had several ulcers on its surface which were quite plain under the lens; some of the ulcers had denuded the epithelium and some were secreting gray slimy mucus. No doubt this was an appendix which had recurrent attacks of catarrh; in fact it had an attack as often as some irritating substance entered the valve of Gerlach and irritated until it became expelled.

(To be Continued.)

Blank Applications for membership in the ASSOCIATION at the JOURNAL office.

ACUTE ENDOCARDITIS IN CHILDREN.

Read in the Section on Diseases of Children, at the Forty-fourth Annual Meeting of the American Medical Association.

BY GEORGE N. HIGHLEY, M.D.
CONSHOHOCKEN, PA.

ETIOLOGY.

From a practical point of view, we can not look upon acute endocarditis as an idiopathic disease; if it ever occurs as such, it has been so rarely recognized that its existence in that form seems more than doubtful. Causes like cold, etc., which seem so prolific in producing inflammation of other similar structures,—as for instance the other serous and the mucous membranes—apparently have little direct influence in setting up inflammation of the inner lining of the heart. This immunity may be due to its situation, but it is difficult to assign a cause for it. This escape from primary affection is more than counter-balanced by the frequency with which the membrane is affected through the agency of other diseases—due wholly to the pathologic condition of the blood which those diseases create.

The pathologic state which we call rheumatism is responsible for the largest number of cases of endocarditis. In the acute rheumatism of childhood it is almost always present, though frequently overlooked. This fact should be well borne in mind, and all cases of rheumatism treated with the idea that in that affection the endocardium is as prone to inflammation as are the membranes of the joints. A great many permanently damaged hearts have been found long after an attack of rheumatism, in which at the time there were no special cardiac symptoms. The principal predisposing cause of rheumatism is undoubtedly the incomplete oxidation of metabolic products—the suboxidized proteids being particularly prominent in this respect. With the blood charged with these materials, the body first over-heated and then exposed suddenly to cold (air or water), and rheumatism is the natural result. The so-called heredity of affections like this, means that habits of the body, as a whole, and of its different parts (the various organs and perhaps the individual cells) have been transmitted from parent to offspring; similar causes and conditions produce like effects.

Next in importance to rheumatism, is the consideration of the cause of endocarditis. Scarlet fever is a disease from which few children escape being attacked before they reach maturity and from which, too, hundreds and thousands annually lose their lives; many times that number suffer irreparable injury from its virulent virus. It is likely that nearly as many cases of endocarditis have originated in scarlet fever as in rheumatism.

Diphtheria, variola, pyemia, puerperal fever, and all other diseases in which the blood is contaminated with a morbid poison, may produce the disease under consideration. Alteration of the chemic or physiologic state of the blood is its chief causal factor—the pathologic condition existing in acute rheumatism being particularly active in this respect. This, however, but brings us back a step in our search for the source of the malady, and a much more difficult question then confronts us, viz.: what are the causes of the antecedent diseases? Not to enter too deeply into this broad inquiry, which would be foreign to the purpose of this paper, I will,

nevertheless, ask for a brief consideration of the cause of the two affections with which acute endocarditis is so frequently associated, viz.: rheumatism and scarlatina.

In these days, when germs and disease are so constantly associated in the minds of medical men in the relation of cause and effect, it is but natural to find a microörganism assigned as the sole cause of each and every disorder of the body. Alleged discoveries are frequently put forth in support of this claim, so that now most of the diseases have had special organisms discovered, to which it is believed they owe their existence.

Now while our bacteriologic Uhlans are welcome to this belief, if to them it is self-satisfying and sufficient, it is to be hoped that the great body of practitioners—those who meet disease at the bedside and not in the laboratory—will at least withhold their judgment until more positive evidence is adduced. For upon the opinion thus formed will depend, in a large measure, the treatment to be pursued.

In the light of present knowledge it seems most reasonable to believe that the zymotic diseases—malarial fevers, smallpox, scarlet fever, etc., have a microbic origin, but that most of the inflammatory affections,—as for instance rheumatism, pneumonia, peritonitis, etc., do not arise in that way. (I am speaking of the primary forms of these diseases.) This latter class of affections so often follows exposure to cold (a sudden chilling off,) injuries, etc., and never, so far as we know, comes by reason of exposure to polluted air or to emanations from preceding cases, that we may reasonably regard them as due to the first named class of causes and not to the last. On the other hand, no amount of exposure to cold can cause a scarlet fever, a diphtheria, or any other of the zymotic diseases, but a very slight exposure to their contagium is sometimes sufficient to infect the most vigorous child.

An attack of rheumatism is almost invariably preceded by a history of having taken cold, i. e., the warm and perhaps over-heated body has been allowed to suddenly chill off. When this occurs it is the surface which feels the change first. The action of the skin is suspended, the superficial blood vessels contract, thus forcing the blood toward the internal organs; normal metabolism is thus seriously interfered with and the metabolic products can not easily be gotten rid of by reason of the inactivity of the skin. Lactic acid and other abnormal constituents appear in the blood, inflammation of the joints, and the phenomena of rheumatism rapidly follow. Predisposition to these processes is produced by long continued over indulgence in food in excess of bodily need; or of those kinds of food which are the most readily oxidized—the carbo-hydrates and fats,—and which therefore use up the oxygen of the system at the expense of the proteids, leaving the latter in a suboxidized state.

Rheumatism and scarlet fever have a widely different origin, but their effects are to a certain extent very much the same.

SYMPTOMATOLOGY.

The signs of endocarditis are rarely very marked, and the disease may run its course without giving any evidence of its presence—a valvular lesion discovered later on being the first intimation of its having existed. The insidious nature of the affection makes it all the more important that a thorough and frequent examination of the heart should be made in every condition in which it is likely to occur. A very rapid pulse, beyond that which the antecedent disease would naturally produce should excite suspicion. If auscultation reveals a soft murmur, a slight prolongation of systole or a tendency to reduplication of either the first or second sound, its presence may reasonably be inferred. Dr. Cheadle says: "Reduplication of the second sound, heard at the apex, and diastolic bruit, are among the most certain signs of rheumatic endocarditis." (Cyclopedia Diseases of Children, Vol. II. Keating.) Should the disease not early prove fatal, a pallid face and other evidences of anemia become marked features. This condition is due to obstruction of the pulmonary circulation. There is also much wasting of tissue, the child becomes thin and feeble. Dropsy rarely ensues, unless there be disease of kidneys coëxisting. Should there be also inflammation of the heart muscle, or of the pericardium, subjective symptoms become more pronounced. The child is restless, has a distressed look, and, if old enough, complains of pain and discomfort over the region of the heart which often palpitates violently.

Sometimes embolic detachments, from the deposit of fibrin on the inflamed valves, may be carried by the blood current into the lungs, the brain, or other organs. This would give rise to a sudden elevation of temperature, increase in rapidity of pulse, together with the local symptoms caused by the affected organ or part. In addition to the special symptoms which are indicative of endocardial inflammation, there are the symptoms of the disease with which it is associated.

TREATMENT.

Perhaps the most important thing for consideration is the question of prophylaxis. Can endocarditis be prevented in those diseases in which it is so prone to occur? In many cases the answer will surely be, yes; in some, no. In all cases the severity of the attack can be greatly lessened and the amount of damage to the heart, therefore, much diminished. To achieve this end, there must be a clear conception of the pathologic condition which is the active cause of the affection. There is, in addition to the contamination of the blood with morbid materials, an elevation of temperature and an increased number of heart beats. These three elements are the important factors in the production of endocarditis. The indication is clearly then; 1, to prevent as much as possible the formation of the morbid elements in the blood; 2, to keep the temperature down; 3, and to quiet the excited action of the heart.

To achieve the first, the diet must be made to conform to the demands of nutrition, both in quality and in quantity. An excess of that requirement means, if it does not set up a salutary diarrhea, an accumulation of sub-oxidized material within the blood. It is always a serious error to attribute the weakness of an acute illness to a lack of nourishment; whereas it is simply due to depressed innervation. It is quite different from the weakness which results from long continued illness or from continued fasting.

It is, therefore, not only useless but positively injurious to try to force food upon a patient during

the first few days of an acute affection. At this period there is usually no desire, and often a positive disgust, for any form of food except water, and that is both a remedy and a food of the greatest value. It supplies all the pabulum needed during this period, and at the same time renders active aid to the system in getting rid of the effete and poisonous materials. A bountiful supply of pure cold water is worth more to the suffering one than all else that can be done. After a few days there is need of light, easily digested, easily assimilated diet. Carbohydrates and fats should be excluded as far as possible. On account of their great affinity for oxygen they rapidly exhaust the oxygenating capacity of the systems and thus seriously interfere with the oxidation of the proteids and of the metabolic products; the result of which would be an increase of the morbid elements within the blood.

Milk has long been a standard article of diet for the sick room and it is rarely contra-indicated. In conditions such as we are dealing with, it is often best to begin by giving whey, which being of lighter nutritive value may be given more freely; it is, too, a most excellent diuretic. It should be remembered that patients may live for months on milk alone or even whey, and not be much the worse for it. Other articles,—beef essence, beef tea, egg in small quantities, properly prepared (the white of an egg beaten up with the juice of a lemon and eaten slowly with a spoon is excellent), mutton broth (free from fat) gelatin preparations and the like, are also useful to fulfill the purpose which I have stated.

2. The best means at our command for the prevention of high temperature is undoubtedly the free use of cold water, both internally and externally. External applications of cold water are well borne in the majority of cases of rheumatism, and the relief which they afford is often most marked. If the temperature persistently keeps high, ice bags should be applied about the head and over the abdomen, one or two thicknesses of a towel being first laid over the latter. Ice bags placed over the abdomen are far more efficient in lowering temperature than when applied to any other part of the body. In scarlet fever nothing acts so efficiently as pouring cold water all over the body for ten, fifteen or thirty minutes at a time; or the child should have a cold bath at short intervals. Not quite so efficient, but often of much service, is the use of the antipyretic drugs. Great care should attend their employment in treating children on account of their toxic effects upon the heart. But wisely used they often do much good.

3. To quiet the action of the heart, and thus render it less likely to become the seat of inflammation, nothing is better than rest in bed and the use of small doses of morphia. I have met with no other remedy that can serve this purpose so well. It slows the heart, relieves pain, and quiets that disturbed state of the nervous system which is particularly prominent in febrile affections of childhood. To get the best benefit from it, the dose must be nicely adjusted to suit each case—one one-hundred-and-twentieth grain for a child five or six years of age, repeated every two hours, being generally sufficient; a smaller dose will sometimes do better; a larger one is often demanded. These prophylactic measures are of the greatest importance in preventing cardiac complications, whether the case be one of acute rheumatism, scarlet fever or any other of the various affections in which they are liable to occur. It matters not whether the antecedent disease be due to a disturbance of the metabolic functions of which the exciting cause is cold, or whether it be due to an infection of the system with microörganisms; the indication for their use remains the same.

These measures, too, for the prevention of endocarditis are precisely what are needed in the treatment of its acute stages. Special remedies for the primary disease will be given but it is not my province to consider them in detail here. The treatment of endocarditis after the acute symptoms have subsided is much the same as the treatment of the chronic form of the disease.

THE NATIONAL FORMULARY.

Read by invitation in the Section on Materia Medica and Pharmacy at the Forty-fourth Annual Meeting of the American Medical Association.

BY PROF. C. LEWIS DIEHL.
LOUISVILLE, KY.

"As the practice of pharmacy can only become uniform by an open and candid intercourse being kept up between apothecaries and druggists among themselves and each other; by the adoption of the "National Pharmacopœia" as a guide in the preparation of officinal medicines; by the discontinuance of secret formulæ and the practices arising from a quackish spirit, and by the encouragement of that esprit du corps which will prevent a resort to those disreputable practices arising out of an injurious and wicked competition; therefore, the members of this Association agree to uphold the use of the "Pharmacopœia" in their practice, to cultivate brotherly feeling among the members, and to discountenance quackery and dishonorable competition in their business."

Thus, Article I of a Code of Ethics adopted by the American Pharmaceutical Association at the meeting of its organization in 1852. Forty-one years have passed, and but very few of the members who formulated and adopted this Article are now among the living, but during all this time it has been the keynote for the conduct, not alone of the members of the American Pharmaceutical Association, but for reputable pharmacists throughout our land.

But, it may be asked, if this is true, if this Article of the Code of Ethics has been upheld by the American Pharmaceutical Association, by its members individually, and by reputable pharmacists in general, why do we find the shops of pharmacists flooded with preparations, the formulas of which are wholly or in part withheld, and which pass current and are prescribed under names not known or recognized in the text-books of the medical and pharmaceutical profession? It is a question not easily answered without stepping on some one's toes, an operation which I propose to perform with as light a step as is practicable and sufficient to the purpose.

Within so short a period as thirty years ago, the manufacturers of pharmaceutical preparations for the trade in the United States could be counted upon the human digits. Their products were confined to such as could not be profitably or conveniently made in the pharmacies, or that might be required in emergencies. With the growth and development of the country, these establishments naturally extended their trade, so that from their small beginnings they soon became a power that exerted a decided influence upon the methods of the pharmacies.

The success of these pioneers in the manufacturing

business, in its turn led to the establishment of new manufactories, and consequent competition, so that the profits of the business soon were seriously contracted. What more natural, then, than to look up new channels in which to increase the volume and profits of the business? So far the efforts of manufacturers had been confined to catering to the convenience and legitimate necessities of the pharmacists; these having been met, it became evident that a more potent factor than the good will and convenience of pharmacists had to be enlisted if reasonable success in extending their business was to be assured. And in this way it came about that the pharmacist was shelved, and the manufacturer addressed his efforts directly to the physician.

Beginning with an explanation of exceptional or improved methods for producing medicinal agents, attention was soon called to new preparations, excelling, either by reason of their potency, palatability or appearance, or these combined. From a list of perhaps half a dozen "Elixirs," so-called, the formulas for which were well understood and the common property of pharmacists, there was an annual increase amounting to dozens, the formulas for which were uniformly withheld, while their composition was, at best, only partially indicated on the label. Coated pills were introduced, with particular laudation respecting the quality and character of their coating; but soon the list of pills in common use was exhausted, and new formulas were invented or constructed in concordance with the prescriptions of popular physicians, until now there is no end to them. And so in due time came about compressed pills and tablets, tablet triturates and a host of other preparations, all of them, doubtless, useful and some of them—under the present practice—indispensable, but, in all, the result of the effort of their introducer to secure for himself the lion's share of whatever profit might be gained by their manufacture.

It is but common justice to concede to an inventor proper recompense for his time, trouble and expense, and also a reward for his invention. Our patent laws secure this to him, so far as his invention may meet with popular use and demand; but under our patent laws everything must, or should, be open and above board. A knowledge of how a patented article is made is public property, while it is the patentee's property to make, or to give the right to make it. And so A, for example, if he had succeeded in obtaining a patent for gelatin-coated pills, and declined to give consent to others, would have been the only manufacturer of gelatin-coated pills. But, insomuch as A did not secure a patent for gelatin coated pills, the process being known and easily executed by any one competent to make pills, why should the preference be given to B, when A, C and D can make and do make them just as good? The point made is simply for the sake of argument, and applies with equal force to all preparations, the formulas of which are authoritative or that are honestly offered under honest titles.

That this is the correct view is evidenced by experience and practice; for it is becoming more and more the practice of prescribers to omit the designation of the manufacturer when prescribing preparations of authoritative or well-known composition, the prescriber leaving the responsibility of quality to the dispenser. Manufacturers were not the last to recognize this tendency; on the contrary, they found that unless resort was had to some new expedient, they would soon again be in their original position; that is to say, directly dependent upon the pharmacist for the demand for their products. And we must look for an explanation for this again to the effect of competition, for manufacturers have increased almost as fast as new preparations. Not alone that many separate manufacturing establishments have been opened; the shrinkage of profits in the wholesale drug business has prompted almost every wholesale house to open a laboratory for manufacture, in connection with their regular business. All of these, with few exceptions, have accepted and adopted the new expedient, which consists in introducing some preparation of popular drugs under a specific trade name. A palatable or presentable preparation having been secured, it suffices to give it a name, derived from its most prominent constituent, or from the specific term applicable to its medicinal use, or to prefix the manufacturer's name to a more or less abbreviated title of the preparation, and the manufacturer has a product which must be purchased from him and can not be substituted with impunity by the product of another manufacturer. To the prescriber it appears to make no difference whether the composition of the preparation is clearly indicated in the label, or not, and generally it is not; the "essential principle" of so many grains of this, that, or the other, or of a teaspoonful of codliver oil, certainly do not give us a clear conception of the preparation before us. In point of fact, many of these preparations are simply such as are commonly designated as "patent medicines," though they may by courtesy be called "pharmaceutical specialties."

I believe that I give voice to the unanimous sentiment of the reputable pharmacists of our country, when I say that it would be presumptuous for me to call attention to any single preparation, or class of preparations, that physicians do, and ought not to prescribe. It is not the concern of the pharmacist what is prescribed, so long as he is convinced that the prescriber has not made a palpable error in his prescription. But I am sure that I act within the bounds of propriety when I say that the modern tendency of prescribers to designate the product of special manufacture in their prescription, while perhaps simplifying the prescription, has complicated the business of the pharmacist to such an extent as to become a serious burden. That this burden was felt by pharmacists everywhere was shown by the adoption of formulas for various non-officinal preparations in common demand by a number of local pharmaceutical associations—some of which, indeed, were called into existence by this very exigency—and I could mention several localities in which the then current "pharmaceutical specialties" were knocked completely out of the field and replaced by the preparations proposed by the local associations. This success, however, was only temporary; partly because of the efforts of manufacturers to recover the ground lost, by the introduction of trade-marked preparations, and largely by the circumstance that the preparations adopted by the different local associations, though identical in name, were not identical in their formulas. And so it gradually came about that the local associations looked to the National Association to bring order out of chaos, the result

being the publication of the "National Formulary," in 1888, by the American Pharmaceutical Association. The "Formulary," in its present, unrevised condition, embodies formulas and definitions for 435 preparations, covering most of the non-officinal preparations in popular demand, and replacing many that are now popularly prescribed under special trade names. Among these formulas may be enumerated eighty-six for elixirs, thirty-four for syrups, ten for emulsions, thirty-nine for liquors or solutions, twenty-six for powders, including fourteen salines and effervescents, seventeen for mixtures, twelve for wines, thirty-one for tinctures and thirty-three for fluid extracts. It is within my personal knowledge that many of these formulas have stood the test of time in the localities in which they had been originally introduced, and that none of them were embodied in the work until they had been subjected to the most rigorous tests; so, that, even as the work now stands it merits the confidence of physicians, the more particularly since the formulas are explicit, and are easily followed by pharmacists even of moderate ability. With the advent of a new "Pharmacopœia," it will become necessary to eliminate some of the formulas; to keep pace with the new preparations, specialties and remedial agents, it will be necessary to add others, and the "Formulary" is therefore now in the hands of a Committee of Revision, who have made a preliminary report at the last meeting of the American Pharmaceutical Association, and will probably make a final report at an early day. The result of investigation made so far by this Committee confirms the reliability of the formulas with few exceptions, and those of no importance. I would therefore earnestly ask that physicians give these formulas their favorable consideration, and that the AMERICAN MEDICAL ASSOCIATION take such action as may be conducive to the adoption and use of the "National Formulary" by practicing physicians throughout the land.

DISCUSSION.

DR. DIEHL, in answer to question by the Chairman, said that in his opinion some of the newer drugs and preparations will be introduced in the next "United States Pharmacopœia." This will include such preparations as various elixirs, and certain drugs of recent introduction, but will not include patented medicines or trade-mark preparations. There will be no radical change, except in relation to weights and measures. The metric system will be adopted. In the formulæ for making tinctures, parts by volume will be substituted for parts by weight. The preparation of the drugs opium, cinchona and nux vomica will be provided with methods of standardization.

Speaking of the "National Formulary," DR. DIEHL said that it had proved a financial success. The first edition consisted of five or six thousand, and since that time at least five thousand more have been printed. He would like to see the book adopted as a text-book by the medical colleges.

DR. WOODBURY spoke of an instance in his own knowledge where a pharmacist was using the "Pharmacopœia" of 1870 five years after the issue of 1880 had been published. Owing to the radical changes made in the last "United States Pharmacopœia" in regard to the strength of opium preparations, etc., such neglect upon the part of pharmacists was culpable. In his opinion, the use of the "Pharmacopœia" would never become general until it was introduced into the medical and pharmaceutical colleges as a text-book.

DR. STEWART said that he was taught that pharmacy was a liberal profession, the same as medicine, and the adoption of the "National Formulary" and "United States Pharmacopœia" as text-books would favor that end.

A committee was then appointed, consisting of Prof. Good and Dr. Stewart, for the purpose of drawing up a resolution recommending the adoption of the "United States Pharmacopœia" and the "National Formulary" as text-books in medical and pharmaceutical colleges. This resolution was adopted by the Section and sent to the general session, where it was well received and adopted:

Resolved, That the AMERICAN MEDICAL ASSOCIATION recommend that the new "United States Pharmacopœia" soon to be issued, be at once practically adopted by physicians in prescribing and pharmacists in compounding. It also advises the general adoption by physicians and pharmacists of the "National Formulary," issued by the American Pharmaceutical Association, and that the leading medical and pharmaceutical colleges adopt these works as text-books.

TRAUMATIC NEUROSES IN COURT.

BY L. BREMER, M.D.
ST. LOUIS, MO.

Of all the diseases which within the last ten years have preëminently engaged the attention of the medical world, there is none that deserves more interest and is of greater practical importance, than that group of nervous disorders which have been styled the traumatic neuroses. It is especially since the meeting of the Tenth International Congress held at Berlin in 1890, that this question has occupied a prominent place in medical thought and discussion the world over. The somewhat acrimonious debate on that occasion, not altogether free from personal antagonism, had as an immediate consequence, the effect of stimulating renewed study and producing a flood of literature on the subject.

Oppenheim's book on the traumatic neuroses had not only renewed or intensified the interest, but also excited widespread contradiction.

Oppenheim, in contra-distinction to Charcot, who classed all neuroses following accidents as hysteria, tried to demonstrate in his book that there is a type of disease quite peculiar in its manifestations particularly on the part of the nervous system, a type which is only met with after injuries, and railway injuries in particular.

The opponents of Oppenheim have contended that he described a disease which he called the traumatic neurosis, meaning thereby a well defined nervous disorder, characterized chiefly by concentric narrowing of the visual field, anesthesia or hyperesthesia, irritability of the heart and certain mental anomalies.

This disease as such, they claim does not exist. There are traumatic neuroses, however, resulting from injury coupled with shock, for instance, hysteria, neurasthenia, chorea, epilepsy, shaking palsy, etc. These neuroses constitute a family; they are more or less closely related to each other.

Most frequently among these traumatic neuroses are found hysteria and neurasthenia or a combination of the two, hystero-neurasthenia.

Whilst Oppenheim claims that predisposition and heredity are extremely rare and that the victims to his traumatic neurosis were ordinarily robust men, before the accident, Charcot and with him the French school, assert that the injury is only the provoking agent of a disease which exists in a state of latency. Without the accident the person might have con-

tinued in good health for the rest of his life; the injury and the mental shock, however, changed a dormant into an active trouble.

The French claim that Oppenheim's cases are simply hystero-neurasthenia, i. e., graver cases of post-traumatic neuroses, and that they do not represent specimens of a clinical entity.

The drift of opinion in neurological circles is in this direction, and Oppenheim, himself, seems to have made some concessions to the French school of late.

In France, traumatic hysteria seems to be the prevailing form of the neuroses under discussion. With us, traumatic neurasthenia is certainly the predominant form, the difference being due to racial peculiarities.

The importance of these lesions, considerable though it is from a clinical point of view, has been materially increased of late years on account of the ever increasing frequency of damage suits resulting from them.

Owing to the great discrepancy still existing on the nature and import of these affections and the diametrically opposite views given by the physicians of the litigating parties, these suits generally form very knotty problems for the jury to solve.

The difficulty in the way of a righteous verdict lies in the very nature of the affections under discussion. If there is a visible injury, a fracture for instance in any part of the body, or lesion of the integuments or the deeper tissues, it is to the layman a comparatively easy matter to comprehend how such an injury may be followed by transient or lasting nervous symptoms, which may constitute, as they do in the traumatic neuroses, the chief and prominent sequelæ of the injury. This difficulty is increased by the too frequent occurrence of exaggeration or downright shamming on the part of the injured, in cases where damage suits are brought.

The trouble will, I am afraid, go on increasing owing to the spread of knowledge on the subject among the masses of the people. To this dissemination of knowledge is to be added the prevailing tendency to fleece the soulless corporations; on the other hand, the real victim to a traumatic neurosis will have a difficult task of convincing a skeptical jury, which through doctors and lawyers have been made acquainted with the great prevalence of simulation of nervous disorders.

Unfortunately the symptoms of the disease are in the vast majority of cases of a subjective nature. Hence very frequently the veracity of the claimant supported by the testimony of a physician, viz.: that such and such symptoms may result from the alleged injury, form the exclusive evidence in the case.

One of the commonest complaints of the sufferer from a traumatic neurosis is pain. How can this be demonstrated? If we possessed an instrument by which we could gauge the pain, an algesiometer, analogously to the æsthesiometer, matters might be considerably simplified. As it is, pain is a relative and indefinite quantity. Mucius Scaevola puts his hand into the burning coal without flinching. Charles XII smokes a pipe whilst the surgeon removes by deep incisions a bullet from his leg, but the impressionable weakling will convoke a medical faculty for an ordinary belly-ache.

Almost equally difficult of determination is the degree of anesthesia or hyperesthesia which are so frequently complained of by such patients. It is a very easy matter to detect contradictory statements in regard to the intensity of anesthesia; and a person must not be set down as an impostor when the result of the examinations of one sitting does not tally with that of a preceding one. The degree of attention and the varying condition of the patient himself are responsible for discrepancies.

On the whole, it may be stated as a general proposition that a claimant for damages is not to be looked upon as an impostor by the examining physician, because contradiction in regard to his present condition and that of the past are discovered. For a defective memory and an instability of the perceptive faculties are among the commonest symptoms of the traumatic neuroses. Again, if the case be one of traumatic hysteria the phenomena are often almost incredible, especially to him who has no neurologic or psychiatric training. A knowledge of this latter branch of medicine is above all requisite for the correct interpretation of the symptoms and behavior of the traumatized neurotics. For it is not the peripheral nerve, nor the spinal cord which is principally affected in these neuroses, but the mind. It is a psycho-neurosis which the examining physician has to deal with. This mental anomaly, the hypochondrio-melancholic tinge which almost invariably is met with in the traumato-neurotics, has been used as an argument against the hysterical nature of the trouble, since the hysterics have generally an air of hopefulness or indifference about them and are notorious for their abrupt changes from one mood to another. But it is as strange a fact as it is incontestable, that the male hysteric is morose, despondent, embittered, quite in contrast with the female victim of the disease.

Taken for granted now, that a certain proportion of the traumato-neurotics are afflicted with hysteria or in the worst cases hystero-neurasthenia, it becomes apparent at once why it is that the symptoms presented by such a case seem so incredible and out of keeping with what is ordinarily observed in injury and disease. Expert examinations as to eye, ear, heart, lungs, etc., and the tests usually employed to unmask imposition have, as a rule, a very bad effect on such patients and not unfrequently, what has been a simple neurosis at first, has by injudicious, overzealous activity on the part of the examining physicians, been converted into a psycho-neurosis of a grave character. It will not do to tell such a patient that he is *only* hysterical and that, being a man, he has no business to be so. Hysteria may be a grave disease, and male hysteria, especially that due to injury is apt to be particularly obstinate and intractable. The same holds true of traumatic neurasthenia which is generally less accessible to treatment than the non-traumatic variety.

In all these conditions now, there is a general tendency to exaggeration of the symptoms. It is physiological to the disease as it were, and ought not to be put down as an unfailing sign of shamming with the intent of increasing the award of damages.

We ought always to bear in mind, as stated before, that the disease is psychogenous in character and that its proper diagnosis belongs therefore to the domain of the psychiater and neurologist. And even he is apt to be misled in cases of this class, unless he has paid strict attention to the literature on this subject for the last four or five years, during which a

considerable stride towards better and more exact knowledge has been made.

It is not my object in this paper to describe traumatic neuroses in all their details, their fundamental and secondary symptoms. My intent and purport is, to point out the difficulties surrounding this matter, especially in cases of litigation.

The exaggeration of originally existing, and the acquisition of new symptoms, through examinations made by a number of physicians, each of them asking about, and thereby suggesting some new symptom generally or exceptionally met with in traumatic neuroses, has led to quite a new nosologic species of morbid phenomena, the litigation symptoms, so-called. To reduce them to their proper level and to eliminate them from the legitimate clinical picture, is one of the most difficult tasks of the examining physician.

As a rule, patients who have their claims in court, get worse mentally and physically. The worry and anxiety which even the healthy and vigorous individual has to undergo in a lawsuit, which is to decide on his financial future, is a particularly hard strain on the nerves of the traumato-neurotic.

The excitement incident to litigation renders his case progressively worse, and many a claimant would have fared much better in health and happiness, had he settled at a reasonable figure instead of undergoing the harassing wear and tear of a lawsuit. Not the most liberal award will repay such a man for the often deep and lasting damage his brain has sustained from prolonged litigation.

On the other hand, it is often astonishing what amount of elasticity and recuperative power is exhibited by the successful claimant. Nowhere has the gold cure celebrated greater triumphs than on the field of traumatic neuroses, if administered by a benevolent jury. There dwells a familiar figure in the memory of those who frequently have to deal with these cases, of the neurotic cripple, who has to be assisted to ascend the witness stand and gives his testimony in a feeble and broken voice, an utter, pitiable wreck, physically and mentally, who a few weeks later is capable of carrying the weight of several thousand dollars in silver, the award of damages, without any apparent difficulty.

Again cases are on record where successful litigants openly bragged after having secured their booty, how they duped the doctors, judge and jury.

Such occurrences are not frequent, but their reality is incontestable. The unjustifiable benefit which one undeserving individual derives through such practice necessarily redounds to the detriment of the deserving victim.

In order to exclude any possible errors of diagnosis, the aim of all original investigation of the subject has been to establish the objective signs of the neuroses, and, if possible, such symptoms as can not be simulated and which are characteristic enough to exclude other diseases. Unfortunately there is no objective sign which can not be successfully simulated by one who through association with real traumato-neurotics has become sufficiently familiar with the leading symptoms. The only exception seems to be the concentric narrowing of the field of vision, so much insisted upon by Oppenheim,[1] the acceleration of the pulse, especially on pressing the painful spots, as a rule situated at one or more of the spinous processes, (Mannkopf's sign) and the difference of the pupil, the one on the affected side (in cases of hemianesthesia or hemiplegia e. g.) being larger than the other.

But it may be broadly stated that all these symptoms are not characteristic of the traumatic varieties of hysteria, neurasthenia, and hystero-neurasthenia, that they are as frequent in the non-traumatic forms, hereditary or acquired, and that as a matter of fact they are observed in quite a variety of other neuroses, and chronic affections in general.

It would devolve, then, on the defense to prove that the person suing for damages was neurotically tainted before the accident, which, of course, is generally a matter of difficulty and impossibility, since every claimant will insist on his previously perfect health; and there are scores of witnesses to prove it. My experience is that in quite a number of such patients a preëxisting neurasthesia could be elicited. Of course, this name does not figure in the patient's previous record; as a rule the terms, "biliousness" and "dyspepsia" are named, which generally are nothing more nor less than symptoms of genuine neurasthenia.

On the other hand, it devolves on the examining physician to establish as to their proper value, the symptoms observed in the claimant, and to find out how much of them is due to the accident and what may have existed before. A very difficult task indeed.

To illustrate the obstacles besetting the subject, especially when complicated by litigation, I shall briefly mention a few of the cases with which I have had personally to deal.

I believe that one of the most curious instances in forensic medicine, and thus far a unique one, where the problem of the causation of diseases was involved, is that of a woman who, several years ago claimed that she had been permanently injured while ascending in an elevator of one of the large drygoods houses of this city. She contended that the machinery had come to a sudden stop, throwing her forward and causing her to land on her head. Since that moment she was paralyzed in her lower extremities. The damages were laid at $20,000. The defense, however, convinced the jury that claimant had had hysteria all her lifetime, that the alleged injury received by the sudden stoppage of the elevator, which could not be proven, was in reality one of the attacks common to hysteria, usually called hystero-epilepsy, and that a disease remained which has the uncommon and formidable name of hysterical "astasia-abasia," but which is in spite of this name a reality. The jury found against the claimant.

In another instance a railroad was sued for $20,000 damages by a traveling salesman who had jumped from a train to avoid the effects of a collision. Since that time, or at any rate several months later (as is often the case in traumatic neuroses) he had evinced a number of neurasthenic symptoms which he claimed were caused by the accident. The train had moved at the time this occurred with a velocity of six to eight miles an hour; in jumping the plaintiff had landed on a heap of gravel and had fallen on his knees, bursting his pants at that point. There had been no injury, except an insignificant abrasion, nor had anybody else been injured, not even the engineer, who remained on the engine at the time of

[1] According to Charcot this is one of the most valuable, though not constant, stigmata of hysteria, whether ordinary or traumatic.

the collision (the engine had been damaged only to the amount of one hundred dollars). The defense succeeded in convincing the jury that the injuries were too insignificant to be looked upon as the cause of the neurasthenia (despondency, rachialgia, inability to work, etc.), from which the plaintiff was undoubtedly suffering, there being data enough in the previous history of the patient pointing to a very strong neurasthenic diathesis.

In the third case, which may be briefly mentioned, a man, known to be an alcoholic of a pronounced type, had been struck by the beam of the barrier at a railway crossing through the negligence, it was alleged, of the watchman in attendance. The pole which, owing to the counterweight at one end did not descend with great velocity, grazed the man's head, who stumbled, but did not become unconscious. There was not the "traumatic narcosis" in the language of Bergman, so ominous an occurrence, as a rule, in accidents of this nature. The man, after the accident, if it was such, visited several bar-rooms and had later on leeches applied to the site where the beam had struck the head. Two days later a surgeon examined him, after he had returned home (the accident befell him while on a visit to this city) found nothing to indicate an injury either to the scalp or bone, not even the evidence of a contusion. The only lesion visible was the leech bites. This man soon after the injury developed symptoms of mental alienation. The symptoms were such as are generally observed in alcoholic insanity. His friends, however, thought that the disorder of his mind was referable to the injury sustained from the pole, and after he had partially recovered, he sued the company, the proprietor of the barrier where the accident had happened. It was learned that the medical experts who were to appear for plaintiff hinted at a depressed fracture as the cause of the mental trouble. The claim of damages was for $20,000. The case never came to trial. It was compromised at $1000. It was plainly one where the trauma did not play the least of a pathogenic rôle.

These three cases taken at random from the cases of my own experience show the importance of hysteria, neurasthenia and alcoholism in the development of traumatic neuroses and psycho-neuroses. They demonstrate the importance of the diathesis or pre-disposition and reduce to its proper value the injury, as simply the provoking agent of a dormant trouble. The task of the examining physician will be to ascertain in the first place the gravity of the existing nervous disorder, and next the probability or improbability of a connection as to cause and effect between it and an alleged accident.

If anywhere a reform is needed in the administration of justice, it is in the suits for damages. Nowhere in the whole machinery of the law are there more farcical performances found than in the courts where damage suits are tried for personal injury; and nowhere is there such an opportunity for the profession to exhibit their chronic disagreement, as on the question of traumatic neuroses. As a rule there are two opposing sets of doctors. One is trying to prove to the jury that the plaintiff is a damaged man and incapacitated for life; the other set will try to prove that there is not much the matter with him, that he is exaggerating or putting on and feigning disease which does not exist. This war of experts who as a rule are not familiar with even a rudimentary knowledge of the neuroses is generally a source of great amusement to the lawyers and the jury, but does not redound to the good name of the profession; much less is it calculated to help the jury distinguish between the right and wrong. Ready wit and repartee is too often counted for knowledge and the testimony of an ill-informed tyro may outweigh that of the experienced physician. Not until trained and trustworthy experts are appointed by the state to pass on doubtful cases and instruct the jury in accordance with their finding, will there be an improvement in the defective and erroneous methods of arriving at verdicts in cases of traumatic neuroses claiming damages. Under existing conditions the true medical expert is generally hampered by counsel of the opposing party in his efforts to elucidate the case. The prevailing custom that only the experts for plaintiff are allowed to examine his person is certainly not calculated to help the jury in their effort of reaching a just verdict. The fact is that there is too much hedging and dodging done by medical experts, to help the side for which they happen to be engaged. They thus run the risk, or rather are necessarily exposed to the danger of turning advocates where they ought to be impartial witnesses.

Quite reprehensible is the practice which has been actually resorted to by some experts, of going into a lawsuit for damages on the plan of sharing in the profits resulting from the verdict. This is lowering the already low standard of our profession. What may be legitimate and proper for a lawyer to do under such conditions, is utterly unpardonable in a physician.

Some facetious observer has divided prevaricators in court into three classes; liars, blank liars and experts. Let us try to help to get the medical experts excluded from this category.

INFECTION FROM THE MOUTH.

Read in the Section on Dental and Oral Surgery, at the Forty-fourth Annual Meeting of the American Medical Association.

BY E. L. CLIFFORD, D.D.S.
CHICAGO.

Each and every day brings the thoughtful student more and more to face the fact that the scientific world is progressing; and he who has kept *au courant* with the literature of medicine must acknowledge that the results of such investigations as are now being pursued have, for a principal object, the unfolding of the prime factors in the causation of diseases, with a view to their prevention.

Recent investigators have sought to open up new fields; they have tried, and found wanting, in many instances, the beaten track, and their efforts tend to the opening of new lines and a practical departure from the pathology of the past, with an ever increasing tendency to lead us to cultivate and entertain broader, or at any rate less narrow views, as to the elements which play an important part as etiologic factors in the causation and origin of diseases.

It is not necessary, or even advisable at this time, to recapitulate the theories of the past, and our aim will have been attained if we can take a few profitable glimpses at the newer fields, allowing the lines of thought and inquiry which may suggest themselves to each to furnish a basis for intelligent discussion.

Much has certainly been accomplished in the last two decades in the field of etiologic pathology, still

much remains to be done, and upon the shoulders of some of the bright lights in our specialty, and this Section, will certainly fall a part of that task.

Investigation and experimentation in the past have been unable to specify and establish any *single* thing as a final cause of disease; and it has been said by one, eminent in our current literature, that he knew of no disease which acknowledged a *single* cause. Our work, then, if this be true, must be to search for and find out the many and ever varying factors or conditions which, as antecedents, combine to produce disease; and I am of the opinion that to the physiologic agencies within our bodies during life we will find many competent factors.

The researches and expositions of Gautier, Peter, Brown and Brunton, confirm our belief in the poisoning or intoxication of the animal economy with its own products. These eminent physiologic chemists traced and pursued their investigations from two general aspects, and Aitken in his excellent review of their work has classified them under two heads: 1, from a chemic and physiologic, or bio-chemic standpoint; and 2, from a clinical or pathologic. From the first standpoint the fact was established that in dead animal tissues, processes of putrefactive decompositions set in, by which certain alkaloids are elaborated from the proteid substances, and these alkaloids were designated by the late Selmi of Bologna, as "ptomaines." Gautier, however, further showed that in the *living* animal tissues, and that by virtue of their vitality, certain other alkaloids are elaborated, which are analogous to the ptomaines and these he has named "leucomaines." But, still further, in addition to these facts, he has demonstrated that in the living animal economy there are elaborated certain azotized uncrystallizable substances which are as yet undetermined, and which he has called "extractives" or "extractive matters," and which Aitken states are quite as unknown as the x, y, z's of an algebraic formula.

The nature of these extractives, then, remains a mystery, but this much we are told of them; that while we are assured that the ptomaines are toxic, and that the leucomaines are also toxic, these unknown extractives are more toxic or poisonous to the system than either. Different alkaloids have been obtained from different sources, both animal and vegetable, and as long ago as 1820, Kerner pointed out the resemblance between the symptoms of poisoning by the animal and vegetable alkaloids. Experimentation since has confirmed the theory. "Zuelzer and Sonnenschein obtained, both from macerated dead bodies and from putrid meat infusions, small quantities of a crystallizable substance which exhibited the reactions of an alkaloid, and had a physiologic reaction like atropin, dilating the pupil, paralyzing the muscular fibers of the intestines and increasing the rapidity of the pulse." V. Anrep obtained an alkaloid from poisonous fish, and Vaughan an alkaloid from poisonous cheese, but "Gautier, Etard, Brieger and others have given precision to the data previously acquired, and added largely to the varied and careful examinations of cadaveric tissues;" "they forced the conclusion that during putrefaction of nitrogenous animal material there are formed organic bases, fixed or volatile, presenting for their chemic and physiologic properties, the closest similitude to the vegetable alkaloids."

In fact, while it was at first supposed that these animal alkaloids differed in their nature from the organic alkaloids formed by vegetables, and various reactions had been given to distinguish them, Brieger appears to show that the distinction can be maintained no longer; but that the animal and the vegetable alkaloids are similar in their chemic constitution; that they are both products of albuminous proteid decompositions, and that some, at least, of the so-called ptomaines are identical with vegetable alkaloids. Hence, Dr. Brunton seems justified in regarding alkaloids "as products of albuminous decomposition, whether their albuminous precursor be contained in the cells of plants and altered during the process of growth, or whether the albuminous substances undergo decomposition outside or inside the animal body, or by processes of digestion, as by organized ferments." Aitken also states that it has been shown that the alkaloidal products formed by the putrefaction of albuminous substances vary according to the stage of decay at which they are produced. At first, the poisonous action of the ptomaines may be slight; but as decomposition advances the poisons become more virulent, while after a still longer period they become more broken up and lose to a greater extent their poisonous power. (Brunton.)

"In addition to these alkaloids obtained by Brieger, a number of poisons have been got by other workers from decomposing articles of food, or from dead bodies, and even from portions of healthy animal bodies, and although these may not have been obtained in the same state of purity, not have had their chemic constituents so well defined as Brieger's, they are still as unknown extractives, x, y, z's of great interest and importance."

Experimentation has even shown that the primary products of albuminous decomposition of digestive ferments, such as peptones, are poisonous; and that pepsin will split up albuminous substances still further; and Dr. Brunton very aptly sounds the tocsin of caution against the extreme and indiscriminate use of the various digestive ferments, and of the many varied artificially digested foods which have now become common. Consequently it behooves us to study the products of albuminous decompositions as a matter of much practical importance, not only as regards pathology, but as regards therapeutics. Now it would not be possible to exclude these animal alkaloids from the general economy, for Gautier has proven that they are a necessary product of *vital physiologic processes.* His experiments show "that about four-fifths of our disassimilations are the result of transformations within the body, comparable to the oxidation of alcohol; and that the remaining one-fifth of the disassimilations are formed at the expense of the living tissues themselves, "free of all demands on foreign oxygen." In other words, "a fifth part of our tissues live after the manner of ferments, that is they are anerobious or putrefactive as to their life." "Hence the possibility of alkaloids being thus formed within the living organism, independent of bacterial fermentation is quite within our conception."

Bio-chemically, the same author states that much has been proved, and he does not doubt that poisonous alkaloids are continuously formed in healthy men and animals by the decomposition of albumen in the intestinal canal, during the process of digestion, or in the blood and tissues generally by the metabolism which occurs during the functional ac-

tivities of life. He believes that a considerable production of alkaloids takes place in the intestines, both when the digestive processes are normal, and more especially when they are disordered. Were all the alkaloids to remain within the body, poisoning would undoubtedly ensue, and Bouchard makes the statement that the alkaloids formed in the intestines of a healthy man in twenty four hours would be sufficient to kill him if they were all absorbed and secretion stopped. Another statement, made by the same author, tends to show the power of these agents as an etiologic factor, and which at this time will probably not be questioned: "That the nervous disturbance which occurs in cases of dyspepsia is due to poisoning by ptomaines;" "that they augment notably in the course of certain maladies,—in typhoid fever for instance."

Now, as to the clinical, pathological and practical aspects,—according to the different sources of poisoning, or intoxication, as it is technically called, there are correspondingly different indications, signs or symptoms which Dr. Brown classifies as follows: 1, poisoning by the extractives is attended by *hyper*thermia; 2, poisoning by "animal alkaloids" is accompanied by *hypo*thermia; 3, a combination or succession of *hyper*thermic and *hypo*thermic phenomena may become manifest, according to the combination or alternation of poisoning by the deleterious physiologic products, or their antagonistic action. Some contradictory evidences of the above are accounted for as follows: "Where 'extractive matters' accumulate in the blood we detect hyperthermia; on the other hand, if 'alkaloids' accumulate, we have hypothermia, while if the two factors coëxist, they may neutralize each other, or become antagonistic in their action, so that temperature may remain stationary or normal. But should one or the other predominate, immediately the scale is turned, so that some variation may be noted. In this auto-infection, this spontaneous or self-infection, of the living organism by the alkaloids and extractives of its own formation there is no question of quality, but simply one of quantity to be considered, by reason of the essential physiologic source and action of the poison. In other words, the healthy living organism may become poisoned (more or less slowly) by the accumulation within itself of deleterious substances normally elaborated, but imperfectly or defectively eliminated. Hence the slow and insidious onset of much ill-health, and from which recovery is correspondingly slow." Now, in what way does this auto-infection of the system take place? Brown tells us that it can only be understood and explained by the mode in which we regard the phenomena of life. Life is a ceaseless decay with a ceaseless repair. "Normal health is conditioned on an incessant formation, transformation and elimination of the effete or old organic materials which must give place to new. It is this effete material, which therefore, represents a series of partial deaths, and which, as the result of organic functional operations, constitutes life, during which the tissues and organs in the processes of their metabolic changes perform a constant function of disintegration, fabricating during these processes those alkaloids and extractives, those x, y, z's of pathology which must be regarded as veritable "*physiologic ashes*," (Brunton) resulting from the processes of combustion of the elements of organic tissues."

Having progressed thus far, and established the fact, we think, of the presence and power of these poisonous agents, let us for a while cast a glance at the oral cavity of man, and see if any conclusions can be drawn as to the part it plays in promoting or preventing the formation of these factors in the causation of disease.

1. We will claim that no portion of the organism is of more importance, or is more active as a veritable chemic laboratory, than the mouth. It is established, that in the processes of putrefactive decomposition, certain alkaloids are elaborated from the proteid substances. We all know that in the cleanest mouths certain portions of these proteid substances will remain, as they are ingested with the food we take, as well as the water we drink, and the air we breathe. We know also that in the cleanest and healthiest mouths, absence of bacteriologic influences is but an utter impossibility, and that these microörganic agencies, furnished as they are with the proper media or food, conjoined with a suitable temperature and abundant moisture, make the mouth one of the best incubators that can be imagined. If this be so in mouths that have been no strangers to proper hygienic influences, how much more strongly is the fact established of the influence of this territory, when carelessness and neglect have been a predominant feature? And, if we accept the theory of Aitken that these alkaloidal products vary as to their poisoning power according to the stage of decay at which they are produced, how important is it that these hygienic influences be enjoined and enforced. Then again, accepting the dictum of Gautier, that these animal alkaloids can not be excluded from the general economy, and that they are even necessary as a product of vital physiologic processes, it certainly becomes the duty of that branch of medical science to which the very entrance of the digestive tract is allotted for control and treatment, to see to it that contaminating influences are eliminated. Again, if the possibility of the formation of these animal alkaloids is acknowledged without the aid of bacteriologic fermentation, as shown by Gautier, how much more deleterious must be their effects, and how much greater must be their production when conjoined to and assisted by these physiologic agencies. If an abnormal amount of these poisonous substances are produced within the intestines when in any way disordered, how much more reasonable to conceive that the manufacturing capacity of the mouth is greatly increased, when a condition that might be termed absolute filth is no stranger to the eye of the observant dental practitioner. If the amount of these agencies formed in the intestines of a healthy man in twenty four hours is sufficient to kill him if absorbed and secretion stopped, it will require no great stretch of your imagination to realize that enough poison could be taken from the mouth of the average dental patient to kill a small army of inoculated subjects if properly applied. Let the physician who doubts this statement recall the condition of wounds, and ponder over the difficulties of his prognosis when called to attend a traumatism caused by the human bite. The conclusions of Dr. Brunton will also go far to account for the thermal changes which take place and accompany these traumatisms, when viewed from a clinical or pathological standpoint. Miller establishes well the part played by the human mouth as a

generator of microörganic life, and his testimony is corroborated by other investigators; not only are large quantities of the animal alkaloids produced within the intestines and other portions of the alimentary tract, but large quantities are swallowed with innumerable bacteria which have already been produced in the mouth, and, as stated by Miller, they give rise to local and general disorders of the most serious nature, produced partly by the direct action of the microörganisms, and their products upon the teeth and the mucous membrane of the mouth, partly by swallowing large portions of bacteria, partly by carrying them into the lungs, particularly in cases of violent inspiration and finally by their obtaining an entrance into the blood or lymph vessels in various ways, such as by a breach in the continuity of the mucous membrane brought about by mechanical injuries (wounds, extractions, etc.) through the medium of gangrenous tooth pulps, which usually lead to abscess at the point of infection; sometimes with secondary septicemia and pyemia with fatal termination by resorption of poisonous waste products formed by bacteria; by the inspiration of particles of slime, small pieces of tartar, etc., containing bacteria, and by contact with the oral and pharyngeal cavities, whose power of resistance has been impaired by debilitating diseases, mechanical injuries, etc.

The very antechamber of man's vegetative existence, the very portal of the human body, furnishing as it does a most excellent nursery for these etiologic factors, has not received from the general profession of medicine, within the past, that attention which its importance has deserved; but, thanks to the work and investigations of some of the members of our specialty, the physician can no longer ignore these factors and feel that he has done justice to himself and the patient who has so confidently placed himself under his care. The results of the last few years have proved that if many of the diseases whose origin is enveloped in mystery could be traced to their source, they could be found to have originated within the oral cavity. And, as to the danger of such diseases as do follow from infection traced directly to the mouth, it seems there could be but one thought, when we reflect that out of a carefully prepared table of 149 cases by Miller, there resulted 50 deaths, 19 cases of syphilis, 2 cases of blindness and 2 cases of a loss of a part or the whole of one of the maxilla.

Most of the work which has been done up to this time (with the exception of that by Miller) has been with a view of attracting the attention of the dental specialist to infection which has been carried *into* the mouth from without, resulting in local manifestations which would naturally come under the supervision and treatment of the dentist. Miller has opened up, and is cultivating with skill and determination a new field of research, and it seems to be his object, as it is mine at this time, to attract the attention of the general practitioner to infections which are carried *from* the mouth and are planted in such soils as will prove favorable to their future germination and growth, hence, proving an obstacle in the path of him who would assume to treat these pathologic lesions, without due appreciation of the important part these agencies and this location play as factors in etiology. It would not be difficult to convince the observant dentist of the truths here implied; it would only be necessary, were that our object, to ask him to recall from his every-day experience ample facts to substantiate the position. He has seen many times the general health of his patients vastly improved by a proper care and attention of the mouth. He has studied, as a specialist, the chemic powers of decayed teeth, vitiated and poisoned secretions and fully appreciates their power and influence, but I am forced to the belief that the physician of the past has either wilfully or ignorantly ignored the important part this portal plays in the aggravation of diseases, or as a preventive of cure. And this thought is only enhanced and enlarged by the recent practices of the more observant and faithful, in calling to their assistance the aid of the competent orist, in assisting him to reëstablish physiologic perfection.

To make the attempt to enumerate and to classify the different ailments which are either caused or aggravated by the unhealthy and unwholesome condition of the month, would be too great a task for one paper, if it were necessary, but it is not. Miller has done and is doing this work for us, and it is our province to assist as much as possible in bringing to the notice of the profession the excellence of his work and the importance of his conclusions. At such times as this, we can but generalize. Every physician of experience has often, no doubt, found himself in the dilemma of not being able to account for the cause of many cases in practice—and while I would not have him look to the mouth as the harbinger of all these causes, I would ask his attention to that sphere, as a possible, and I might say, a probable source in many cases.

There is no doubt that the nervous system in many instances, and by very remote manifestations, is often injured to an alarming extent by the mechanical or chemical irritation emanating from an oral organ. The alimentary tract, we know, is often deprived of the privilege of doing its proper duty by contaminations implanted into the first bolus of food, started on its course through a filthy and poisonous mouth, and added to the chemic contamination may well be mentioned the mechanical, which in cases of malocclusion, tender and sore teeth, or edentulous mouths prevent a proper mastication of food, entailing upon the stomach an office and a duty never designed by nature. This overwork of the stomach, combined as it often is with the chemic poisons of the diseased mouth, of course is sufficient to interrupt the proper function of other organs in the tract as they are reached, and consequently the whole canal becomes a source of irritation and of poison. Now, the primary source of health and growth being so far drawn from the path of rectitude laid out to furnish man with ease and not disease, it is evident that future digestion, assimilation and nutrition is only a matter of impossibility. If the ptomaines, leucomaines and extractives are found in every organism, and under all conditions, it is only rational to believe that an all-wise Providence has designed them for a specific and for a physiologic purpose. They have a function to perform, even though it were only that of scavengers for other tissues. It would certainly not be wise to place a minor importance upon the function of the kidneys, simply because their principal office seems to be that of eliminators,—on the contrary, the more reason why their integrity should be preserved and their powers not deteriorated, in order that those substances which seek this channel may be thrown

off and not left to accumulate, to contaminate and to poison what would remain healthy.

Likewise, if microörganisms are so universally present, the same facts would equally apply to them, and it is to the prevention of a growth of an abnormal quantity, and to the prevention of the introduction into the organism of specific germs, that the attention of the therapist of the future will be more particularly directed. If we could only get our medical confrères to pay more attention to the chairs of oral and dental pathology that have lately been introduced into our colleges, to the sections on these subjects that have been attached to all the congresses and national associations of late years, we believe they would more fully appreciate their importance, would more often seek the advice and assistance of the specialist, and this in turn would create a bond of union between us and them, stronger and more appreciated than any that has existed up to this time.

Aside from local inoculations and their results, which are usually classed among dental diseases, there are many forms of aberrations that the condition of the mouth may be held especially responsible for. Paralyses, pareses, anesthesias and hyperesthesias adorn the border line where it is difficult to determine whether the case is one for the specialist or the general practitioner; but these lesions having long been noticed as doubtful in their etiology, are not classed among the obscure, and are often brought to the notice of the specialist and his assistance sought. But in those more obscure cases where the cause is greatly clouded, mistakes are more liable to occur, and the physician often battles vainly in his efforts to restore a healthy status by the ever interfering and constantly infecting products of this portal to man's existence. Miller has shown that pulmonary and bronchial diseases are excited or aggravated by the inspiration of germs from the oral cavity, as evidenced in the case cited of J. Israel, where primary actino-mycotic infection followed the lodgment of a small piece of tartar within the lung. Several cases within my own practice confirmed the theory, and I have more than once seen the benefit, and been able to bring it forcibly to the notice of the attending physician, where marked improvement followed the sterilization of the mouth, when all efforts had proved fruitless prior to this step. Alimentary disorders are of such common occurrence, as a result of defective and contaminating mastication as to require no extended notice, and from this one condition all other organs are more or less affected, both nervous and vascular. Bednar, said to be the first to give clear expression to this view in 1854, states that, "indigestion may be brought about *directly*, by taking into the stomach any substance already in a state of fermentation; *indirectly*, when the food taken into the stomach undergoes subsequent fermentation on account of its disproportion of the gastric juices." Henoch favored this conception and found in it a cause for a large number of diarrheas, while Minkowski classifies under five heads the disturbances directly caused by the fermentative processes in the stomach:

1. Substances may be formed which irritate the mucous membrane of the stomach, and bring about a state of catarrhal inflammation.

2. Considerable quantities of gas may be found heightening the mechanical insufficiency of the stomach.

3. Fermentations may lead to the production of substances having toxic properties.

4. In the fermentation of albuminous substances, alkalin products may arise which neutralize the gastric juice.

5. The gastric fermentations may exert a great influence on the functions of the intestines.

And now, what is our lesson? We would ask the general practitioner to regard the unhealthy condition of the oral cavity, with all its contents, as an important factor in the causation or aggravation of diseases having shown, as we believe, that within its boundaries lie the primary causes of many pathologic lesions; that good, healthy, clean and serviceable dental organs are absolutely essential to the enjoyment of physiologic ease, and that in many cases the dental specialist has within his power the rendering of valuable assistance in the search for this result.

DISCUSSION.

Dr. J. S. Marshall said that the paper opened up a field of thought to all of us as dentists, and the application made to the diseases of the general system will make it valuable to the general practitioner. Almost every pathogenic microörganism has been found in the mouth by Dr. Miller, and we can not be too careful about introducing them into our own systems when operating. Upon two occasions he had pricked his finger while at work, and each time had had troublesome sores from the accidents, showing that there was more than a mere wound to deal with.

Dr. Talbot said there were, no doubt, many cases where a foul condition of the mouth was responsible for troubles in the general system, and where an improvement in health and increase in weight had followed the putting in order of the mouth. The infection from the mouth of a patient too, had often caused trouble to the dentist, such as inflammation of the eyes and perhaps sore throat, consumption, and tonsillitis.

Dr. Taft said we should promote the function of the eliminative organs; the skin should be kept clean, the liver active, the kidneys, lungs, etc., in good condition, and then there will be less likelihood of infection from these bacteria. Care should be taken to regulate the food supply as to quantity, quality, and the proper preparation; these precautions with reasonable effort towards keeping the mouth clean will be sufficient to guard against these infections. He also spoke of the habit of mouth-breathing, and said dentists should impose on all their patients the necessity of keeping the mouth closed as much as possible.

Dr. Clifford said that the main idea in his paper was to call attention to the effect the microörganisms of the mouth had upon the general condition. Dr. Taft spoke of keeping the eliminating organs in good condition, but this can not be done unless the mouth is kept clean, for if the mouth contains enough poison to keep the blood, liver, and skin in bad order they can not be got right until the mouth is rid of the cause of the trouble.

NECROLOGY.

Dr. DeWitt Clinton Patterson, Coroner of Washington city, died at his residence, 919 I Street, N. W., Dec. 20, 1893. He was born in Mount Washington Township, Berkshire County, Mass., August 3, 1826. His descent is from Scotch blood, but his American ancestry dates back to his great-great-great-grandfather, Andrew Patterson, who came to America from Leith, Scotland, and landed at Perth Amboy, N. J., September, 1686. The subject of this sketch was the son of Joseph

and Elizabeth (Kane) Patterson. Branches of the Patterson family settled in Connecticut and Massachusetts and still reside there, while others have gone to the great West and founded families. The Doctor's parents removed, while the subject of this notice was yet a boy, to Loraine County in Northern Ohio, where he grew up and where he received his academic education. In selecting a vocation in life he chose the profession of medicine, and selected as a preceptor Dr. L. M. Brooks, one of the leading physicians of that day in the city of Cleveland, Ohio, in whose office he made due preparation for attending profitably instruction in a medical college. He then matriculated in the "Western Reserve College," and after attending the usual course of lectures, received the degree of M.D. from that institution in 1851, and began practice in that city. The following year he was married to Miss Amelia K. Clark.

In 1856 he removed to Winona, Minn., where he practiced until the breaking out of the war, when he returned to Cleveland and was commissioned surgeon of the Twelfth Regiment of Ohio infantry and served to the close of the war. On the restoration of peace he took up his residence in Petrolum Center, Pa.

What he had seen of Washington city during the war with the recommendation of some influential friends, induced him in 1867 to remove to the capital of the nation and there enter upon the practice of his profession. By his education and thorough medical studies he was exceptionally well equipped for the practice of medicine, while his army experience had added to his knowledge, so that by attention to business he speedily obtained an extensive and profitable patronage.

Dr. Patterson joined the Medical Society of the District of Columbia in 1867, and in 1869 he became a member of the Medical Association of the District of Columbia, and was elected to the presidency of that body in 1885. Dr. Patterson was one of the early members of the First Congregational Church, and much interested in the Centenary Church erected at the corner of Tenth and G Streets, and for many years was one of the trustees. He was also actively interested in many of the social and charitable enterprises in the city.

July 2, 1872, Dr. Patterson was appointed to the office of Coroner of the District of Columbia, a position which he filled most acceptably for a period of about twenty years, or until failing health made it impossible for him to leave his house. His last official duties were performed at the inquest over the bodies of the men killed on June 9 by the accident in the old Army Museum on Tenth Street. In this protracted and difficult investigation, although quite ill at the time, he acquitted himself with tact and ability.

Dr. Patterson was highly esteemed in this community, not only as a physician but as a citizen, and his death is severely felt by a large circle of friends and the public generally. He was eminently social in his character. His personal appearance may be described as dignified and noble; six feet in height and weighing, when in health, quite 250 pounds. He had a large, well-shaped head, regular and strongly marked features, fair complexion, bright eyes, sound teeth, light hair which had begun to whiten. He wore a full beard, clipped into manageable length. To crown all, he possessed a cheerful, sunny temperament, dignified and winning manners and a soft and agreeable voice.

In 1881 Dr. Patterson became a member of the AMERICAN MEDICAL ASSOCIATION, and has ever since been very regular in his attendance at its annual meetings. The ASSOCIATION, recognizing his business tact, elected him a member of the Board of Directors for the publication of its JOURNAL. He was also elected treasurer of the Rush Monument Fund now being collected under its auspices.

In 1890 he was Chairman of the Committee of Arrangements for its meeting in Washington in 1891. He was also a member of the Masonic Order in the District of Columbia, and a member of the Ninth International Medical Congress which met in the city of Washington Sept. 5, 1887, and served most efficiently on the local Committee of Arrangements.

Dr. Patterson leaves a widow and two children, Dr. Albert Clark and Miss Elizabeth Patterson. The former has chosen the profession of his father, and is now Third Assistant Physician at the Government Hospital for the Insane at Washington. The Medical Society of the District of Columbia held a special meeting on the announcement of Dr. Patterson's death which was largely attended, and at which appropriate resolutions expressive of the loss to the county and the Society were passed.

Funeral services were held by Rev. S. W. Newman of the Congregational Church, at his late home, in the afternoon of December 21. Dr. Patterson's remains, however, were taken to Cleveland, Ohio, for interment in Woodlawn Cemetery.

Dr. Francis Minot Weld of Jamaica Plain, Mass., died Dec. 31, 1893. He was born in Dalton, N. H., in 1840, and graduated from Harvard in 1860. He studied medicine in the Harvard Medical School from September, 1860, to May, 1862, when he received an appointment as medical cadet. He was relieved from naval duty on Jan. 11, 1864, and graduated from the Harvard Medical School. He entered the army as a Surgeon and was with Grant in the campaign from the Wilderness to Petersburg, and with the Army of the James before Richmond. He moved in 1866 to New York city, where he practiced until 1887. He was Medical Superintendent of the New York Hospital in 1876-7. He was President of the Harvard Club of New York, and one of the founders of the University Club of New York.

Dr. Jonathan P. Wood of New Lebanon, Ohio, December 30. He was born in Rhode Island in 1817, attended Brown University and Berkshire Medical College. He came to New Lebanon in 1845, where he has since resided as one of its most respected medical practitioners.

Dr. Obadiah Prentice, at Norwalk, Ohio, December 29. He was born at Lowville, N. Y. in 1821, and with his parents removed to Ohio in 1837. He was graduated at the Cincinnati Medical College in 1848.

Dr. Solon Philo Sackett of Ithaca, N. Y., died December 18, of disease of the kidneys. He was the senior physician of his section, having been graduated from the Geneva Medical College in 1843.

Dr. P. A. Clark of Lancaster, Wis., December 30. He was graduated at Yale Medical School and was 68 years of age.

Dr. L. F. Coffin of Oskaloosa, Iowa, December.

Dr. Joseph Fowler of Columbia, Tenn., January 2.

THE JOURNAL Special Commissioner's report on the great drainage canal of Chicago, will be published next week. The importance of the canal from a sanitary standpoint can not be overestimated, and with a view of ascertaining the exact status of the work, its progress, and as well the sanitary condition of the workmen, the JOURNAL sent a special representative to make a personal investigation. This report is now in hand and we are sure will be of great interest not only to the inhabitants of a single city, but to sanitarians everywhere.

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SATURDAY, JANUARY 13, 1894.

SOME FACTS CONCERNING THE PHYSIOLOGY OF FATIGUE.

DR. HODGE of Clark University, Worcester, Mass., began in 1887 a series of experiments to determine the nature and character of the changes due to functional activity in nerve cells. The first report of these studies, although published some months ago in the *Journal of Morphology*, is of unusual interest.

The author refers to the fact that all the energy of the body, comes directly from chemical changes and reactions in the individual cells. If we could know the processes which take place in a single nerve cell, it would be the key to all of nerve physiology, from the action of the nervous mechanism in an amœba's protoplasm through the entire animal series to the activity of the human brain. The view prevalent up to this time was, that changes could be found in gland cells because they produce a material secretion, also changes would be noted in muscle cells, because of their mechanical work, but in the nerve cells no changes would be found because their secretion was consciousness, a thing outside of physical observation. The fact was not considered that nerve cells contain masses of granular protoplasm, enclosing a nucleus, which exhibits a delicate reticulation, and contains a prominent nucleolus. Why should not the nerve cell have the same life history of birth, maturity, and death, as other cells? Why should it not suffer from want of nourishment, fatigue, and the struggle for existence?

The study of the pathologic changes in the nerve cells was misleading, for the reason that the normal processes were unknown, and no line could be drawn between the normal and abnormal.

Hence the author sought to find what changes occurred in the cells of healthy animals from electrical stimulation. Frogs, cats and dogs were used, and one-half of the spinal root ganglia was subjected to electrical stimulation for varying periods of time. Then sections from both ganglia were stained, mounted and examined under the microscope. Some of the animals were put under the influence of ether, and a mild current carried directly to the one side of the optic thalmus and other sections of the brain, and after a time the animal was killed and opposite sections made and examined. The results of a large number of experiments exhibited a uniform diminution and decrease of the size of nucleus of the cells, which had been subjected to the stimulation, and a change from smooth and round to jagged irregular outlines. The reticular appearance was broken up, the cell protoplasm was shrunken in size, and the nuclei was decreased in size. The sections of brain not stimulated showed no changes of this nature. Great care was taken that the electrical current should be within physiologic limits. This inquiry followed, Do similar changes occur in the normal activity of an animal from fatigue? and are they restored by rest and sleep? To answer this, numerous sparrows, pigeons and swallows were shot in the morning as they were going out, and at night when coming home after a day of activity. Sections of similar parts of the brains of the morning and evening birds were compared with each other. In all cases the brain cells of the birds at evening were greatly decreased in size, and the nucleus jagged and of irregular outline. The cell-protoplasm also shrunken, and lessened reticulated appearance. The nuclei also greatly decreased. Honey bees were caught coming out of the hive in the morning and compared with bees going in late at night. The same differences were noted in the brain cells, showing degrees of exhaustion and fatigue in one, and vigor and health in the others.

These studies conducted with great accuracy and detail for the purpose of eliminating all errors, seem to point to brain and nerve fatigue as a shrinking of the nucleus and cell protoplasm. Birds identical in appearance shot at night and in the morning brought out this fact, in the shrunken cells at night, and the full rounded cells in the morning. The conclusion is that in sleep the wasted cell recovers its functional changes from fatigue, and the failure of this restoration is the beginning of organic degenerations of all forms and degrees. The cell recovers the bundles of nerve fibers which enter into it, and are lost in the granular substance, and nucleus. Here all the impressions of the external world come in a succession of impulses, and all the outgoing commands are determined.

Something like this decrease and shrinking of cell contents and nucleus are common in old age. It would appear reasonable to suppose that failure to restore the cell contents would be ageing and practi-

cal starvation of the body. If physiologic fatigue is functional changes in nerve cells, which can be restored by rest and sleep, scientific inquiry has taken a step forward of deep significance.

Pathologic changes of cells are the constant study of many astute observers, but the changes which follow normal activities are new lands of research.

DR. HODGE has been for some time making studies of the changes which take place in nerve cells under variations of food and water supply. Also, what changes if any take place in nerve cells from birth to death from old age, from rejuvenation to senescence. These researches will be watched with much interest.

THE SMOKE NUISANCE IN NEW YORK.

The burning of bituminous coal in certain Eastern cities has been largely on the increase, of late. This has been true in so marked a degree, in reference to the down-town districts of New York city, that an investigation has been ordered by the Board of Health. The sanitary code expressly prohibits the consumption of soft coal in such a way as to become an atmospheric nuisance. The citizens most liable to this impending smoke nuisance are watching with eager interest the promised investigation, and intend to oppose the "entering wedge"—the initial soft coal burning that is "merely temporarily noticeable because imperfectly conducted." The alleged pioneer offenders claim that "mistakes on the part of the engineers and firemen, and an improper plan of 'firing' have been the sole cause of injurious results; proper firing and a little experience will remove all grounds of objection to bituminous coal." The temporary strike in the anthracite regions, and the alleged political "pull" of some of the protected industries, will probably give the citizens of New York a taste of the bituminous evil, and a chance to judge of the conspicuous advantages of a proper method of firing soft coal.

THE "DIVINE DIPLOMA."

An irregular practitioner of Garnersville, New York, named MRS. STAGG, has been the subject of a coroner's investigation. When asked by what authority she ventured to practice upon the sick, she replied that it was by "the gift given her by God." It has been her custom to go into a trance and dream out any required diagnosis or treatment. Her favorite remedies have been burdock, witch hazel, dogwood and lavender. The learned coroner came to the conclusion that no harm had been wrought by this woman, by the administration of these "simples," and she was allowed to go free with a mere caution that she had been practicing illegally. He told her that her alleged divine right to tamper with diseased persons was recognized by the laws of New York State. These practitioners, called sometimes "dream-doctors," or "clairvoyants," get along very well until the time comes that a death-certificate becomes necessary, and even after that crisis they may have little trouble if they happen to fall into the hands of an easy-going coroner. They seldom undergo prosecution, although in many a community they are exceptionally prosperous, sufficiently so to excite the envy and antipathy of the better educated, regular type of practitioners. The latter are commonly content to ignore the pretender or to smile at his pretensions.

REMOVAL OF DEAD BODIES.

Somewhere there must be a competent authority to control the removal of dead bodies. It is necessary in order to protect the people from the spread of contagious diseases. Under a statute empowering a State Board of Health to adopt rules and by-laws to prevent outbreaks and the spread of contagious and infectious diseases, it can make a rule requiring that "Every dead body must be accompanied by a person in charge, who must be provided with a ticket, and must also present a full first-class ticket marked 'Corpse,' and a transit permit from Board of Health or proper health authority, giving permission for the removal, and showing name of deceased, age, place of death, (and if of a contagious or infectious nature) the point to which it is to be shipped, medical attendant, and name of undertaker." So holds the Appellate Court of Indiana in the case of Lake Erie & Western Railway Company v. James, decided Nov. 24, 1893. And it is further held in this case that, under such a rule, a railway company can not be required to carry a dead body on a permit signed by a health officer authorizing the removal, unless it shows a substantial compliance with the requirements. The name of the medical attendant, for example, must be deemed a material and essential part of this transit permit. Without giving it, the proper health officer's certificate, or otherwise regular permit, would not be sufficient.

AGREEMENTS NOT TO PRACTICE MEDICINE.

Agreements not to practice medicine come under the head of contracts in restraint of trade. Public policy forbids the making of contracts of this nature too broad in their terms. Thus, no contract could be enforced which would by its terms prevent a physician from ever again practicing medicine, or which would bar him from practicing it in an unreasonably large extent of territory. Even in cases where the law will tolerate the contracts, they will not be treated with any special indulgence. If they secure to the purchaser of a good will a guaranty against the competition of a former proprietor, or practitioner, it will not be presumed that more was intended. At the present day the occupation of a pharmacist and that of a physician are essentially

distinct. An agreement not to engage in the one does not preclude the party from engaging in the other, so long, the Court of Appeals of New York holds, in the case of Greenfield v. Getman, decided Nov. 28, 1893, as the one is not used as a cover for the operations of the other. Here was a contract by which a physician, in consideration of $500 paid him, agreed that he would not practice medicine and surgery, for five years, in a certain village, or within a radius of something like five miles thereof, or, if he did, he would forfeit and pay $1500. To practice medicine and surgery, it was further stipulated, in the agreement, should be construed to mean to prescribe for, to compound medicine for, advise or visit any person sick or disabled, or to perform any act required to be done by a person legally qualified to practice medicine and surgery. A year after making this contract, he entered into partnership with another in the business of selling drugs, books, stationery, etc., at a place two miles distant from the village referred to. Through the following four years, he once attended, as counsel, with two other physicians, upon a person *in extremis*, for which he made no charge, but was paid and accepted a small fee. On several other occasions he prescribed, as it were, for persons coming to the drug store, by furnishing them with medicines suitable for their respective ailments; but without making any charge for medical advice, and without such sales aggregating $10. This, the court held, was not a violation of his contract. Undoubtedly, it said, the parties might have so stipulated that a single act, such as was described in the agreement, would have rendered the physician, if he had committed it, liable for the full amount of damages recoverable for breach of contract. But before such a meaning should be given to an agreement of this kind, it should appear, upon a fair and reasonable interpretation of its provisions, in the light of the circumstances under which it was made, and of the evident intent and object of its execution, that no other inference would be justly permissible. Construing this particular agreement in accordance with its obvious purpose, the definition, which should be considered as determining what was agreed upon to constitute the practice of medicine and surgery, did not enlarge the meaning of that term, but merely specified things, which, if systematically or habitually or frequently done, would be a breach of the agreement.

SELECTIONS.

Influence of Ultra-Violet Rays on Smallpox.—Lindholm of Bergen, has employed the method recommended by Finsen, of treating smallpox patients in a room from which the ultra-violet rays are shut out by red window panes, or by covering the windows with red curtains. Twenty cases, of which ten were unvaccinated children, were treated in this manner with complete success; all recovered, although severely attacked; in one case even "black smallpox" was present. The eruption dried up shortly after its appearance, no fever of maturation took place, and the patients recovered very soon, having but few scars.—*Hospitalstidende*, 1893 p. 919.—*Universal Medical Journal.*

Catarthinic Acid.—M. Gentz has obtained this acid which he calls catarthinic acid from senna. It appears in the form of a brown powder, little soluble in water. This purgative may be given in the dose of five to fifteen centigrams, and its effects are manifested eight to ten hours after administration. On healthy subjects having taken the remedy solely to study its physiologic action, it causes frequent stools (about five in half a day) and mild colic. In persons affected with chronic constipation, on the contrary, colic is not observed in the generality of cases. The action of the medicine is more slow and less attended with disagreeable sensations. Thanks to this latter circumstance and taking into consideration the absence of all disagreeable taste, and the certainty and energy of its action, he was able to predict for the catarthinic acid an honorable place among the purgatives.

In infants of 2 to 4 years the acid was prescribed in a dose of .05 mixed with sugar, and a dose of .15 for adults.

Dehio tried the medicine on five well persons, and five persons suffering from chronic constipation. He offers the following formula:

℞ Acid, catarthinic 05 to .15
Sacch, alb 30 to .50
M. For *one* powder. Of such a powder take one every hour or two.

M. Dehio has not yet had occasion to study the action of the catarthinic acid for a long time, but considering the results of his ten trials, he is much inclined to hope that in these cases the remedy may render signal service.—*Journal de Medecine de Paris*, Dec. 17, 1893, from Vratch, No. 30, C. S., and *Noveaux Remedès*, 24 Novembre, 1893.

The Rhine Vintage of 1893.—The vintage on the Rhine is now in a large measure finished, and the character of the wine of 1893 can, to a certain extent, be estimated, though it can not yet be said with absolute certainty what its precise quality will be in comparison with the best vintages of preceding years.

It is admitted on all sides that the wine of the present year will undoubtedly be fine in quality, but there seems to be a disagreement of opinion as to whether it will excel the wine of all years since 1868, when a very noted vintage was obtained. Some think it will be a wine like that of 1886, or that of 1874, which were both excellent wine years, but not of a red-letter character like those of 1868 and 1865—to which the public here are constantly reverting when they speak of wine exceptionally fine—while others think that the quality of the 1868 wine will be reached by the wine of this year. Of course, it is to the interest of the wine-growers to exaggerate the probable quality of the new wine and of buyers and dealers to depreciate it.

The past summer, while very disastrous to forage plants, on account of its excessive dryness, was very favorable to fruit, and the grape did well, though a little rain now and then would have been very serviceable to it and would have still more increased the amount and raised the quality of the product. The grapes this year have all ripened, green grapes being the exception. Having ripened early, they have been untouched by frost, with, perhaps, a few exceptions, and the wine will consequently be free from the objectionable flavor often imparted by frost to wine. There were a great many overripe grapes this year, and these make the best wine.

The must weights in the better class of vineyards have been from 100° to 112° Oechsle as a common thing, while in the finest vineyards must weights up to 150° Oechsle have been noted, which is a remarkable weight. It is reported that the very best vineyards, such as the renowned Steinberg, for instance, the must weights indicate a wine unsurpassed by any of the century. The must is very sweet. In ordinary vineyards must weights have run this year from 80° to 100° Oechsle as a rule.

In the matter of quantity the vintage, on the whole, will be, so far as I can make out, what is called a full one-half crop. This is a gratifying amount, as a three-fourths vintage is a rarity and a full vintage remarkably scarce. The yields vary considerably in the different vineyards, making what the wine-growers call a *neidischer Herbst*, that is, an enviable ingathering, as some get three-fourths or more of a crop, while others have but one-third or less, which, when there is a good wine involved, makes the less lucky ones decidedly envious of their more fortunate neighbors.

The prices prevailing for the new wine are said to be rather moderate, taking into consideration the quality of the product. Buying is not as brisk as it should be. This is due to a shortness of money and to a disposition on the part of the wine trade to await the outcome of a threatened imposition of a tax on wine by the Imperial Government before making heavy purchases of new wine. But there will doubtless be a good deal of speculation in the new wine before long.

Wine, when exported, is to be exempt from taxation, it seems.—JAMES H. SMITH, Commercial Agent. In U. S. Consular reports for December, 1893.

MAYENCE, October 20, 1893.

BOOK NOTICES.

An American Text-Book of Gynecology, Medical and Surgical, for Practitioners and Students. By HENRY T. BYFORD, M.D., J. M. BALDY, M.D., E. B. CRAGIN, M.D., J. H. ETHERIDGE, M.D., WM. GOODELL, M.D., HOWARD A. KELLY, M.D., FLORIAN KRUG, M.D., E. E. MONTGOMERY, M.D., WM. R. PRYOR, M.D., GEORGE M. TUTTLE, M.D. Edited by J. M. BALDY, M.D. With 360 illustrations in text and 37 colored and half tone plates. Large 8vo, cl., pp. 713. Philadelphia: W. B. Saunders. 1894. Price $6.00. Sold by subscription only.

Reference to our review columns will show that works on gynecology have been rather numerous in the past two or three years, the entertaining book of More-Madden and the elaborate translation of Pozzi being the latest additions to gynecologic literature. This volume is printed on good paper; the illustrations are extremely good, and its type large and clear. The subjects treated of are: the examination of the female pelvic organs; the technique of gynecologic operations; menstruation and its anomalies; sterility; anomalies of the female generative organs; genital tuberculosis; diseases of the vulva and vagina; inflammatory diseases of the uterus; laceration of the soft parts; genital fistulæ; distortions and malpositions; malignant diseases of the female genitalia; uterine neoplasms; pelvic inflammations; ectopic gestation; diseases of the ovaries and tubes; diseases of the urethra, bladder and ureters; and after-treatment in gynecologic operations.

The scope of the work, it will be seen, is quite as extensive as could well be covered in a single volume text-book, and the treatment of the subjects mentioned is fairly representative of American gynecologic surgery. The great changes that have taken place since the pioneer work of Sims, Bozeman and Emmet, may well give rise to a just pride in the achievements of American surgeons, and the perfected practice of the day is fairly set forth in this book.

The Healing of Rodent Cancer by Electricity. By J. INGLIS PARSONS, M.D., M.R.C.S., M.R.C.P., (Lond.), cl., pp. 82. London: John Bale and Sons. 1893. Price five shillings.

In this little book the author describes his method of treatment of rodent ulcers by electricity. He uses nine needles "from two to four inches long, composed of steel with platinum ends. The steel portion is insulated, and attached to about eighteen inches of covered wire. When they are in position the wires leading from them are connected to the battery. When the patient is fully under, the assistant at the battery is directed to use twenty cells, and then to turn the current on for one or more seconds as required. Meanwhile the other assistant holds the needles in position, while the operator keeps his finger on the pulse, notices the strength of the current as shown by the galvanometer, and observes the effect produced on the growth. After one or more seconds the current is turned off."

The number of cells is increased until the galvanometer shows a current of 300 to 400 milliampères. The duration of the operation depends upon the extent of the growth, and lasts from ten minutes upward. Where long continued use would be required, the author recommends a second sitting.

The work is interesting, and shows a thorough acquaintance with this branch of electro-therapeutics.

The Technique of Postmortem Examination. By LUDWIG HEKTOEN, M.D., Pathologist to Cook County Hospital, Chicago; Professor of Pathologic Anatomy in the College of Physicians and Surgeons of Chicago. With forty-one illustrations, pp. 172. Chicago: The W. T. Keener Company. 1894. Price $1.75.

This is an excellent condensation of the rules for the conduct of postmortem examinations, by a very competent hand. The author well says:

"Accuracy of observation, completeness of detail and sound conclusions can be obtained only when the postmortem examination is made according to some definite and systematic plan, so that regions and organs are successively examined without disturbing the relations and appearances of structures yet to be investigated."

To promote these desirable objects, this book has been prepared.

1. **State Board of Health of New York.** Twelfth Annual Report. Albany, 1892.
2. **The Same.** Thirteenth Annual Report, with a volume of maps. Albany, 1893.

These volumes show very active work on the part of the Board, particularly in advice to towns, furnishing plans for sewerage and the like. Various general investigations, and special reports by Prof. Willis G. Tucker on food and drugs. A reprint of the monthly bulletins concludes the report.

In the thirteenth report, there is a special report on "Inspection of Cattle for Tuberculosis," and a continuation of the very interesting report on the Hudson River.

The work of the Board was augmented during 1892 by the threatened invasion of cholera. The new law providing for the inspection of cattle for tuberculosis went into effect with an insufficient appropriation, and although between six and eight thousand cattle have been examined, the work was far from complete. The Board has found ready coöperation on the part of owners.

These reports are of great value and are interesting as showing the practical details of sanitary work on a large scale.

CORRESPONDENCE.

104 E. 40TH ST., CHICAGO, Dec. 28, 1893.

To the Editor:—Allow me to call the attention of the incoming staff of the Cook County Hospital to an opportunity to encourage better medical education which its position affords. The examinations for internes will soon come off. It has been customary to examine on the eight branches of the old medical education. No examinations have been given which have afforded the student an opportunity to gain credits on laboratory work. No examinations have been given with histological or pathological material, or indeed in any way except by written questions requiring

written answers. This has resulted in disaster to those applicants who have had laboratory work as a considerable part of their course. It has resulted in a growing opposition to laboratory work in the College of Physicians and Surgeons on the part of the faculty and of the students. If the present class, which is the first to graduate on the new course of study containing laboratory work, should secure a fair representation in the coming examinations at the County Hospital, it is possible that the directors of the college will continue the laboratory work; but if the examinations are again conducted on the quiz-compend and note plan, it is almost certain to be abandoned. Few members of the County Hospital Staff are medical college men. They belong to the outsiders who are always cursing the diploma mills. Now let them offer an examination that will give a man who has worked three years, two hours a day with microtome, microscope and dissecting tools a chance to show the superiority of his education over that of the man who has listened to lectures and crammed.

It is time, too, that the applicants were considered human. It seems strange that doctors of medicine should require students to write five or six hours a day on as many different subjects. A number of strong men have left their examinations every year from exhaustion. Even a country school master would not be so inconsiderate.

Not a suggestion of a clinical or autopsical examination has ever been given. Does this encourage the teaching that makes good doctors?

My interest in this examination is a part of my interest in honest medical education. I speak freely now because though still connected with the College of Physicians and Surgeons as a teacher, I am no longer its secretary. The neglect of this and other examining bodies to introduce examinations in practical biology, histology, pathology, embryology and bacteriology has so militated against our students that my ideas could not be longer carried out by our directors without too much opposition and too much expense. Shall laboratory instruction be continued in our medical schools? What does the staff of the County Hospital say? What do the examining boards of the various States say?

I hope that this subject is of such interest that it may be discussed in the columns of the JOURNAL.

Very respectfully, BAYARD HOLMES,

Late Secretary of the College of Physicians and Surgeons of Chicago.

Should Use the M.D.

To the Editor:—Would it not be well to draw a line between an M.D. and Dr., since the higher medical education is becoming the hobby in the way of journal notoriety, much of it without practical results. The M.D. having been conferred by collegiate authority while the Dr. is the prefix of all quacks. Therefore if the M.D. is worth anything, let it be used at all times by those entitled to do so. I notice the JOURNAL you direct uses the Dr. almost exclusively.

Respectfully, etc., S. L. HENRY, M.D.

The Maltine Photographs.

The Maltine Company requests us to reprint their letter to the *New York Medical Journal*, as answer to the criticisms that appeared last week:

THE PUBLICATION OF PHYSICIANS' PORTRAITS.

NEW YORK, Dec. 26, 1893.

To the Editor of the New York Medical Journal:

SIR: Your reference to our calendar for 1894 demands our attention. While you did not mention us by name, the reference is so direct that the physicians who received the calendar can not but know to whom you referred.

It has been our custom for several years to send to the medical profession throughout the United States portraits of eminent physicians and surgeons, and, inasmuch as their distribution has been scrupulously confined to medical men of good repute, no objection has been offered by those gentlemen whose likenesses we reproduced. Not a copy of this calendar, nor of any of our other numerous publications, has ever been sent to the laity.

Maltine is distinctly not a "patent medicine," nor has it ever been advertised to the public, and therefore we have considered it within our province to distribute portraits just as we have promulgated testimonials from the most eminent physicians and chemists in this country and Europe.

We have statistics to prove that 90 per cent. of the physicians of the United States prescribe maltine. This fact, in addition to the fact that we reach the patient *only through the physician*, would seem to amply vindicate our use of the likeness of a physician whose pictures are on public sale and have continually appeared in the public press, and who is well known as a public man.

The portraits referred to were not used to push the sale of our preparations, as was the portrait of Dr. D. Hayes Agnew, recently published by us. It will be remembered that we printed under Dr. Agnew's portrait a facsimile of his indorsement of maltine. Our only reason for publishing the portrait of Dr. —— was because we thought it would interest his medical brethren, who have shown so high an appreciation of the series of likenesses we have already published.

We should like further to say that as soon as objection was made by him we suspended the distribution of the calendars, as we would not knowingly offend even one of the honorable profession to whom we are so greatly indebted. THE MALTINE MANUFACTURING COMPANY.

SOCIETY NEWS.

Michigan State Medical Society.—Owing to change in the date of the meeting of the AMERICAN MEDICAL ASSOCIATION in San Francisco, I am requested by the President of the Michigan State Medical Society to announce that its Twenty-ninth Annual Meeting will be held in Lansing, May 3 and 4, 1894, instead of the first week in June as heretofore announced. Respectfully,

CHAS. W. HITCHCOCK, Secretary.

DETROIT, Jan. 1, 1894.

Prize of the American Neurological Association.—The American Neurological Association offers a prize of $200 for the best essay on any subject connected with Neurological Science. This competition is open to physicians who are legal residents of States in North and South America. Essays must be sent to the Secretary of the Association on or before the first day of May, 1894. Each essay shall be accompanied by a sealed envelope containing the name and addresses of the author, and bearing on the outside a motto, which shall also be inscribed upon the essay. Essays shall be type-written, in either the English or French Languages, and with the pages securely fastened. The Council of the Association reserves the right to reject any or all essays judged unworthy of the award. Each essay must exhibit original research, and none will be accepted that has previously been published.

GRÆME M. HAMMOND M.D., Secretary.

American Electro-Therapeutic Association, office of the Secretary, 68 Madison Avenue, New York. At a meeting of the Executive Council of the American Electro-Therapeutic Association, held at the office of the Secretary, March 2, 1893, the following resolution was adopted:

Resolved, That the Secretary be instructed to prepare a circular to send to Fellows of the Association, to members of the medical profession, to electrical experts, and to manufacturers of electrical appliances for medical work, containing titles of all the committees, the members serving on them with their addresses and the matter prepared for discussion and investigation by each committee.

And that manufacturers be asked to communicate with the members of the different committees, if they desire to have their instruments examined and tested, stating their claims and merits.

And that physicians, electrical experts and manufacturers be asked to coöperate in making suggestions and in relat-

ing their experience and preference for instruments, with reason and data.

And to mail this circular to all members of the Association, manufacturers, medical journals and to others who are known to use electricity extensively, asking for a speedy reply either to the Secretary or to the members of the respective committee whom it concerns.

In accordance with the above resolution the following has been prepared:

COMMITTEE ON STANDARD COILS.

Dr. W. J. Morton, 19 East 28th Street, New York; Dr. A. H. Goelet, 351 West 57th Street, New York; Dr. Wm. F. Hutchinson, Providence, R. I.; Dr. G. J. Engelman, 3003 Locust Street, St. Louis, Mo.; Mr. A. E. Kennelly, Chief Electrician, Edison Laboratory, Orange, New Jersey.

POINTS TO BE CONSIDERED.

1. Portability.
2. Practical mechanism of machines as adapted to physicians' use.
3. Range and rate of vibration.
4. Electro-motive force and its range in relation to resistances to be overcome.
5. The resistance of the coil producing these electro-motive forces.
6. The battery-power required for individual coils.
7. Shape of the generated wave of electro-motive force.

COMMITTEE ON STANDARD METERS.

Dr. Margaret A. Cleaves, 68 Madison Avenue, New York; Dr. Emil Heuel, 352 Willis Avenue, New York; Mr. W. J. Jenks, Electrical Engineer, 44 Broad Street, New York.

POINTS TO BE CONSIDERED.

1. A good meter should have a clear, legible scale, fairly uniform over the range, and not crowded at different points.
2. It should be capable of being noted or observed at a distance.
3. The resistance should be low.
4. There should be no tendency to overheat with the strongest current employed.
5. It would be advantageous to avoid a shunt, if one milliampère can be read throughout the scale.
6. The instrument should be capable of indicating in all positions.
7. Any instrument whose indications depend directly upon the local magnetic force is objectionable, for the reason that its indications are liable to be affected by iron in the vicinity.
8. The suspended system should require as little attention as possible, either for adjustment or shipment.
9. It is an advantage for the instrument to indicate with either direction of the current.
10. Portability.
11. Liability to fracture.

COMMITTEE ON STANDARD ELECTRO-STATIC OR INFLUENCE MACHINES.

Dr. W. J. Morton, 19 East 28th Street, New York; Dr. J. H. Kellogg, Battle Creek, Mich.; Dr. G. Betton Massey, 212 South 15th Street, Philadelphia; Dr. Margaret A. Cleaves, 68 Madison Avenue, New York.

POINTS TO BE CONSIDERED.

1. Electro-static machine best adapted to medical work, to be determined by its "output." Its output to be determined as follows: *a*, at, respectively, 100 and at 150 revolutions per minute; *b*, with two Leyden jars, each of whose outer metallic surfaces has the area of $4\frac{1}{4} \times 1$ 1-16 inches = 5 5-16 square inches; *c*, with discharging-rods having ball terminals one inch in diameter and arranged respectively six inches and ten inches apart; *d*, give the number of sparks per minute which will pass between the discharging-rods.
2. Give the greatest maximum length of spark with machine arranged as in Section I, except as to distance apart of the discharging-rods.
3. Give the maximum length of the brush discharge between the discharging-rods with machine arranged as in Section I, except that no Leyden jars are used.
4. Give the maximum length of spark that may be obtained by a brass-ball electrode two inches in diameter, from a person's back, seated in the usual manner upon an insulated platform—the platform connected to one prime conductor of the machine, the other being connected to the ground: *a*, with above Leyden jars; *b*, without Leyden jars.
5. Kind of electro-static machine best adapted to medical work, whether a Holtz, Wimshurst, Toepler, Voss, Carré, Lewandowski, Toepler-Holt, Wimshurst-Holtz or machine not here named, provided the type as constructed successfully fulfills requirements outlined in Section I.
6. Does the machine preferred easily reverse its charge? Does it maintain its charge successfully?
7. Facility and means of charging machine under all atmospheric conditions.
8. Can a good meter to measure the output of the machine be suggested?
9. Mechanical construction of machine: *a*, ease of actuating machine by motive power; *b*, durability of the mechanism causing the revolution of its plates; *c*, durability of its construction; *d*, is a glass case necessary?
10. The best means for drying the air within an enclosing glass case.
11. The best means for absorbing the ozone and nitrogen compounds formed within a glass case.
12. Is it not advisable to decide in a general way that no machine, the diameter of whose revolving-discs is less than twenty-six inches, and the number of whose discs is less than six, should be recommended by this Committee for medical work?
13. Suggestions as to a practical switch for the utilization of Morton's static induced and the transformer currents.

COMMITTEE ON CONSTANT-CURRENT GENERATORS AND CONTROLLERS.

Dr. W. J. Herdman, 48 East Huron Street, Ann Arbor, Mich., Current Controllers and Battery Tests; Dr. Robert Newman, 68 West 36th Street, New York, Primary Stationary Batteries; Dr. D. S. Campbell. Correspondence with Physicians; R. G. Brown, E. E., Brooklyn, N. Y., Secondary Batteries and Dynamos.

POINTS TO BE CONSIDERED.

1. Primary batteries.—Express what preference for a certain form of battery and give reasons therefor. Determine voltage, internal resistance current and durability. By what accessory appliances are currents from these batteries best controlled and applied?
2. Secondary batteries.—What are the defects and inconveniences? What the advantage over other forms? What the ampère hours, what the constancy, voltage and action?
3. As to dynamo currents.—What the nature of the current, what its voltages, how is it modified by the form of controller under consideration. What are its physiological effects and its therapeutical application?
4. Report new forms of batteries and improvements, with claims as to superiority over those now in use.
5. Rheostats and Controllers.—Test the various forms and devices used and recommended to modify and control currents; difference in effect produced by each, mechanically, chemically, physiologically, or therapeutically.

COMMITTEE ON STANDARD ELECTRODES.

Dr. A. Lapthorn Smith, 248 Bishop Street, Montreal, Canada; Dr. Charles R. Dickson, 263 Victoria Street, Toronto, Ontario; Dr. Plym S. Hayes, 84 Washington Street, Chicago, Ill.

POINTS TO BE CONSIDERED.

1. Inactive electrodes.—*a*, what is the best material in general for the ground work of the electrode and what in special cases? *b*, how may it best be connected with its rheophore? *c*, what is the best material to cover its conducting surface? *d*, when necessary, how may it best be insulated? *e*. In what way may it be kept warm and moist when not in use, should this be necessary? *f*, what should be accepted as standard sizes and shapes, and how best designated? *g*, what other points require to be considered?
2. Active electrodes.—*a*, what is the best material in general and in special for the groundwork of the electrode? when used at the positive pole? when used at the negative pole? *b*, how may it best be connected with its rheophore? *c*, what is the best material to cover its conducting surface when necessary, in general and special. *d*, how may it be insulated when necessary? *e*, what is the best form of construction where flexibility is required for tortuous canals? *f*, what shall be considered the standard shapes and sizes; what scale shall be adhered to in considering the latter; how may their surface area be estimated when they are of irregular shape? *g*, when designated by numerals as to size and surface, how may such best be expressed when stamped or otherwise marked on them? *h*, how may simplicity of construction be best obtained and cost of manufacture reduced without impairing efficiency? *i*, how may facility of cleansing and rendering aseptic best be achieved? *j*, what other points to be considered?

3. Active and inactive electrodes.—*a*, are the terms "active" and "inactive" the best standard terms we can employ? *b*, In the case of both active and inactive electrodes, should not the threads of all screws used in construction as a means of attachment, also all plugs and sockets, etc., be of a standard gauge, that electrodes might be used with attachments of all makes, etc., and to facilitate repair.

Since this circular was issued slight changes in some instances have been made in the Points to be Considered by the various committees. A Committee on Electric Light as a Therapeutic and Diagnostic Agent, was created at the annual meeting of the Association, in Chicago, Sept. 12, 13 and 14, 1893.

COMMITTEE ON ELECTRIC LIGHT AS A THERAPEUTIC AND DIAGNOSTIC AGENT.

Dr. Plym S. Hayes, 84 Washington Street, Chicago; Dr. Margaret A. Cleaves, 68 Madison Avenue, New York; Dr. H. H. Hahn, 304 E. Federal Street, Youngstown, Ohio.

POINTS TO BE CONSIDERED.—THERAPEUTICS.

1. How can the heat of the incandescent and arc light best be utilized in the treatment of disease?

2. *a*, what form of apparatus is best adapted for the use of the electric light in the treatment of disease? *b*, is there any difference in the therapeutic effects of the incandescent and arc lights? *c*, does the coloring of the light, by causing it to pass through colored glass or similar substances, add to the efficacy of the light? *d*, is the light and heat derived from the electric light different or of greater therapeutic value than that derived from any other source? *e*, what pathogenic germs have their growth arrested, or are killed, by continuous exposure to the influence of light? *f*, can a disease produced by the above mentioned germs be modified or arrested by the continuous exposure to light?

DIAGNOSIS.

1. *a*, Illumination by means of a combination of the electric light reflectors and condensors so arranged as to furnish parallel or convergent rays of light. *b*, what form of apparatus is best adapted for general use? *d*, what for special?

2. *a*, what are the best forms of apparatus for illuminating the various cavities of the body, and at the same time enabling the physician to obtain a view of the whole or part of the cavity? *b*, is the heat evolved from the lamp employed, of sufficient intensity to require especial means for its absorption?

3. *a*, to what extent is the introduction of an electric light into the various cavities of the body, in order to determine the condition of those cavities or the translucency of the surrounding tissues, of advantnge?

Your prompt and full reply is earnestly solicited to any or all of the points above suggested.

MARGARET A. CLEAVES, M.D., Secretary.

Dec. 4, 1893.

Medical Society of the State of New York.—The eighty-eighth annual meeting will be held Tuesday, Wednesday and Thursday, February 6, 7 and 8, in the City Hall, at Albany, commencing at 9:15 A.M., Tuesday, and ending at 1 P.M., on Thursday. Communications relating to the presentation and reading of papers or to any changes in the provisional program, should be addressed to the Business Committee prior to the first day of February. Dr. Henry Flood, Elmira, N. Y.; Dr. L. Bolton Bangs, 31 East 44th Street, New York City; Dr. Edward Clark, 271 Franklin Street, Buffalo, N. Y.

TUESDAY—MORNING SESSION 9:15 O'CLOCK.

President's Inaugural Address. Appointment of Committees. Executive Business. Special order at 10 A.M., to consider resolution to amend the by-laws.

Hemorrhagic Serous Effusion of the Pleura, with Report of a Unique Case; William S. Cheesman, M.D., Auburn.

Researches on the Eliminating Power of Diseases, and the Relation between Vaccinia and Enteric Fever; William Finder. M.D., Troy.

Pneumonia of the Aged; John H. Pryor, M.D., Buffalo.

Diagnosis and Nomenclature of Fevers—2d Paper; Nelson G. Richmond, M.D., Fredonia.

The Therapeutics of Oxygen; Arnold W. Catlin, M.D., Brooklyn.

Simple Methods in the Diagnosis of Nervous Diseases; E. C. Spitzka, M.D., New York.

Discussion on Diphtheria; Arranged by A. Walter Suiter, M.D.

Pathology—Status Præsens; Thomas E. Satterthwaite, M.D., New York.

Observations on Diagnosis, and some Sanitary Aspects; A. Walter Suiter, M.D., Herkimer.

Croup and Diphtheria—Unity or Duality; William H. Daly, M.D., Pittsburg, Pa.

The Comparative Status of Intubation of the Larynx; Joseph O'Dwyer, M.D., New York.

Complicated Intubation of the Larynx; William Hailes, M.D., Albany.

The Local Treatment; Abraham Jacobi, M.D., New York.

The General Treatment; Edward F. Brush, M.D., Mount Vernon.

The Use of Tartar Emetic in Diphtheria; H. DeV. Pratt, M.D., Elmira.

AFTERNOON SESSION, 2:15 O'CLOCK.

Treatment of Depressions in Skull of Newborn; David D. Jennings, M.D., New York.

Immediate Trachelorrhapy; Henry C. Coe, M.D., New York.

Lympho-Adenoma of the Uterus; H. J. Boldt, M.D., New York.

Senile Endometritis; A. J. C. Skene, M.D., New York.

Treatment of Endometritis; Herman E. Hayd, M.D., Buffalo.

Nine Years' Experience with Alexander's Operation for Shortening the Round Ligaments of the Uterus; Paul F. Mundé, M.D., New York.

Pelvic Abscess; Walter B. Chase, M.D., Brooklyn.

A case of Hysterectomy for Retention of the Menses; William Gardner, M.D., Montreal.

Discussion. Arranged by Andrew F. Currier, M.D. Topic—Menstruation and its Abnormalities.

Introduction and Normal Function; Andrew F. Currier, M. D., New York.

Dysmenorrhea—Its Causes and Its Treatment; Howard Kelly, M.D., Baltimore, Md.

Profuse Menstruation; Charles P. Noble, M.D., Philadelphia, Pa.

Scanty Menstruation; Franklin Townsend, Jr., M.D., Albany.

Irregular Menstruation; Charles A. L. Reed, M.D., Cincinnati, O.; E. W. Cushing, M.D., Boston, Mass.

Menopause—Natural and Artificial; Arthur W. Johnstone, M.D., Cincinnati, O.

EVENING SESSION, 7:15 O'CLOCK.

Urethral Caruncles; Edward M. Liell, M.D., New York.

The Physical Causes of Sexual Debility in the Male, as distinguished from the Psychical Causes; F. R. Sturgis, M.D., New York.

The Surgical Treatment of the Prostate Gland; Seneca D. Powell, M.D., New York.

The Fable of the Egg; William S. Ely, M.D., Rochester.

Artificial Immunity; Henry R. Hopkins, M.D., Buffalo.

Clinical Notes on Psoriasis with Especial Reference to its Prognosis and Treatment; L. Duncan Bulkley, M.D., New York.

Spinal Supports and Braces, the Indications for their Use, History and Modern Perfection. To be Illustrated with Forty Lantern Slides; A. M. Phelps, M.D., New York.

History and Pathology of the Spinal Cord. Illustrated with Lantern Slides; William C. Krauss, M.D., Buffalo.

WEDNESDAY—MORNING SESSION, 9:15 O'CLOCK.

Discussion on Abdominal Surgery; arranged by A Vander Veer, M.D.

Disputed Points in the Treatment of Pelvic Surgery; Joseph Price, M.D., Philadelphia, Pa.

Influences Affecting the Results of Abdominal Operations; J. F. W. Ross, M.D., Toronto, Canada.

Hemorrhage after Abdominal Section. Its Place in Statistics; A. H. Buckmaster, M.D., New York.

Cysts of the Epigastrium; Dudley P. Allen, M.D., Cleveland, Ohio.

The Techniqne of the Abdominal Incision. Methods of its Closure and its Subsequent Management; W. W. Potter, M.D., Buffalo.

Operative Procedure for the Relief of Obstruction of the Common Duct; W. E. B. Davis, M.D., Birmingham, Ala.

Two Cholecystotomies for Gall Stones with Recovery, with Remarks on Operative Methods Based upon Five Cases; William Wotkyns Seymour, M.D., Troy.

Gall Stones, the Exciting Cause of Malignant Disease; Rufus B. Hall, M.D., Cincinnati, Ohio.

Appendicitis; Charles McBurney, M.D., New York.

An Analysis of 150 Personally Observed Cases of Appendicitis; George Ryerson Fowler, M.D., Brooklyn.

A Conservative View of the Treatment of Appendicitis; William S. Tremain, M.D., Buffalo.

Some Observations Relative to the Treatment of Suppurative Appendicitis, with Report of Cases; Willis G. Macdonald, M. D., Albany.

Palpation of the Vermiform Appendix; J. M. Edebohles, M.D., New York.

The Inch and a Half Incision, and Week and a Half Confinement in Appendicitis; Robert T. Morris, M.D., New York.

Report of a Case of Post-Peritoneal Abscess from Duodenal Ulcer, with Presentation of Specimen; L. S. Pilcher, M.D., Brooklyn.

Intestinal Perforation in Strangulated Hernia; William B. DeGarmo, M.D., New York.

Remarks on After Treatment of Abdominal Section; Carlton C. Frederick, M.D., Buffalo.

The Unexpected as Sometimes Observed in Abdominal Surgery; A. Vander Veer, M.D., Albany.

AFTERNOON SESSION, 2:15 O'CLOCK.

Recent Methods of Gastrostomy for Stricture of the Esophagus; Willy Meyer, M.D., New York.

The Influence of Physiological Rest on Prolapse of the Rectum; Joseph D. Bryant, M.D., New York.

A Contribution to the Subject of Excision of the Larynx; Charles A. Powers, M.D., New York.

Observations on 118 Cases of Cancer of the Breast, with Especial Reference to its Radical Cure by Operation; William T. Bull, M.D., New York.

The Treatment of Hernia. (Supplement to Paper read last year); Alexander Dallas, M. D., New York.

Some Cases of Brain Surgery; Herman Mynter, M.D., New York.

The Needlessness of a Mydriatic in Adjusting Glasses to the Eye; D. B. St. John Roosa, M.D., New York.

The Action of Scopolamine on the Eye; Thomas R. Pooley, M.D., New York.

The Treatment of Nasal Hemorrhage; John O. Roe, M.D., Rochester.

Report of a Case of Injury to Cauda Equina; Hermon C. Gordinier, M.D., Troy.

WEDNESDAY—EVENING.

Anniversary Address by the President, 8 o'clock, Senate Chamber. Topic—The Physician of Sacred History. Annual dinner of the Society, 9:30 o'clock, Delavan House.

THURSDAY—MORNING SESSION, 9:30 O'CLOCK.

The Treatment and Prevention of Epilepsy in the Young; Graeme M. Hammond, M.D., New York.

The Practical Workings of the Law for the Care of the Insane; Carlos F. MacDonald, M.D., New York.

Lunatics in Public Places; Wallace J. Herriman, M.D., Rochester.

The Subfrontal Gyre (Broca's Convolution) in Man and Apes; Burt G. Wilder, M.D., Ithaca.

Acromegaly; Floyd S. Crego, M.D., Buffalo.

Report of a Case of Acromegaly, with the Exhibition of the Subject; Frederick Remington, M.D., Rochester.

Uremic Hemiplegia; Reynold W. Wilcox, M.D., New York.

Glycosuria; W. B. Vanderpoel, M.D., New York.

OFFICERS AND COMMITTEES OF THE SOCIETY.

President—Herman Bendell, Albany.
Vice-President—C. L. Stiles, Owego.
Secretary—Frederic C. Curtis, Albany.
Treasurer—Charles H. Porter, Albany.
Committee of Arrangements—Henry Hun, Albany; Seneca D. Powell, New York; W. J. Nellis, Albany.
Committee on By-Laws—H. D. Wey, Elmira; A. R. Simmons, Utica; F. C. Curtis, Albany.
Committee on Hygiene—Charles F. Bruce, New York; A. N. Bell, Brooklyn; D. S. Burr, Binghamton; H. R. Hopkins, Buffalo; Lewis Balch, Albany; E. H. Loughran, Kingston; O. W. Peck, Oneonta.
Committee on Legislation—D. B. St. John Roosa, New York; Daniel Lewis, New York; D. V. O'Leary, Albany.
Committee on Medical Ethics—John S. Warren, New York; Charles Jewett, Brooklyn; Eugene Beach, Gloversville.
Committee on Prize Essays—Franklin Townsend, Jr., Albany; A. Walter Suiter, Herkimer; Charles Stover, Amsterdam.
Committee on Publication.—F. C. Curtis, Albany; Chas. H. Porter, Albany; F. D. Bailey, Brooklyn; W. W. Potter, Buffalo.

College of Physicians of Philadelphia.

SECTION ON ORTHOPEDIC SURGERY.

At the meeting held on Dec. 15, 1893, DR. F. X. DERCUM, Clinical Professor of Diseases of the Nervous System, Jefferson Medical College, read a paper on

SPASMODIC TORTICOLLIS AND ITS MEDICAL RELATIONS.

Before a body of learned specialists an elementary review of the subject of torticollis would obviously be out of place. Certain facts, however, owing to the paucity of our knowledge on the subject, demand repeated and careful consideration. Ordinary fixed wry neck, is of some interest to the neurologist inasmuch as most of the cases owe their origin to some primary disease of the muscles, generally the sterno-mastoid. As a result of congenital lack of development, or of trauma received during birth, the sterno-mastoid of one side is shorter than its fellow, and at the same time is rigid and sclerosed. That, however, fixed wry neck, is not always to be ascribed to this cause is shown by cases reported in which the affection was due to a tonic spasm of one sterno-mastoid, the spasm in turn being due to, or associated with, some affection of the eyes. Wadsworth in the Transactions of the American Ophthalmological Association for 1889, p. 381, reports such a case under the title of, "Spastic Torticollis Apparently Due to Faulty Position of the Eyes Cured by Tenotomy." Landolt (*Bulletin Medical*, 1890, IV, 573) records two cases, one associated with paresis of the left superior oblique and another associated with paralysis of the fourth pair of nerves. Inasmuch as both cases declined operation, the causal relation of the eye symptoms could not be determined. Of the three cases reported, two occurred in young children and one in a girl of seventeen. All had existed since early infancy. These cases are important as indicating a possible relation of cause and effect existing between torticollis and eye symptoms in children. That, however, some of these cases are due neither to eye troubles nor to trauma received in childbirth or faulty position of the head in utero, but are really due to defective development is made probable by the observation of Osler (Archiv of Pediatrics, 1892, p. 81) who noted the association of congenital wry neck with marked facial asymmetry.

Spasmodic Torticollis.—Spasmodic torticollis is an exceedingly interesting affection of the numerous and varied character of the problems which it presents. We know little of the physiologic action of the motor nerve cells and of muscular tissue while of the pathology of spasm we know still less. There is probably, further, some good reason why local spasms predominate in the regions of the face and neck but all we could say at present would simply be speculative.

Regarding spasmodic wry neck we must, it seems to me, admit the following propositions: 1, spasmodic wry neck is not necessarily spinal accessory spasm. While it is true that the sterno-mastoid and trapezius are decidedly involved in the majority of cases, the spasm is frequently not limited to them but involves other muscles. Further, cases are on record in which no spasm in the spinal accessory distribution was present at all and in which, notwithstanding, rotatory spasmodic movements of the head occurred. Again, muscles other than the rotators of the neck may also be involved; 2, the constantly recurring rotation of the head is at times the outcome of purely local conditions and in that sense is a local spasm; at other times, though more rarely, it is the outcome of the action of physiologically associated centers in the upper cervical cord and medulla or, more rarely still, of the morbid action of a motor center in the cortex, and in this sense resembles a volitional movement. Both of these propositions seem to me to be of great importance. Regarding the first, it is frequently possible by the careful study of the movements of the head and of the action of the muscles of the neck to determine which of the muscles are actually at fault. However, this can often be done approximately. The first point is, of course, to determine whether or not the spasm is limited to the spinal accessory supply. If not, what other muscles are involved. The importance of this study in view of operative procedures can not be over estimated and doubtless is one of the reasons why some cases of resection of the spinal accessory nerve are successful and why others fail. Having carefully studied the movements and the muscles involved, the next point that suggests itself is to determine whether the case presents physiologic associations of different and distant muscle groups. This association is seen at times in the concomitant spasm of both trapezii and of the anterior belly of the occipito-frontalis of the elevators of the upper

lip. There is present at times, also, an associated movement of the arm on the affected side. If this movement be in extension and pronation it is probably a physiologic association. Though of great importance, it is not always possible to differentiate between a purely local spasm and a movement indicative of some perversion of the normal physiologic action. If such a differentiation be possible it is of the utmost value in suggesting to us the position of the lesion if any. From what we know of facial spasm we have a right to infer that the lesion may be situated either in the cortex, the lower nerve centers, or in the nerve trunk. It is probable that the larger number of cases with which we have to deal are cases in which either the gray matter of the upper portion of the cervical cord and medulla is involved, or in which the nerve trunks of the spinal accessory, or of the cervical plexus are at fault. Certainly, if the cortex were more frequently affected we should expect, as Gowers points out, associated movements of the eyes. These are practically never observed. It is true, however, that other associated movements, especially movements of the arm and forearm are very suggestive of cortical disease. Pressure points, so frequent in facial spasm, are, as is well known, rare in torticollis, nor do we often have painful points over the spinal accessory or other nerves. Such a painful point was present in a case for a time under my observation and was situated over the spinal accessory nerve. The subsequent history of the case, however, the nerve being excised, proved that the case was not one of purely spinal accessory spasm.

Regarding the various medical measures for treating these cases it is hardly necessary that I should go into detail. All present are familiar with the utility of such drugs as gelsemium, conium and morphia, and also of their failure to cure—at least in the vast majority of cases. It is hardly necessary that I should dwell upon the various other agents at our disposal; massage, electricity, and rest in bed as they give only amelioration and fail to cure. It is to the surgeon that we turn sooner or later with the hope of securing for our patient decided, if not absolute relief. Those who follow me this evening will have a great deal to say about the various surgical procedures that have been instituted. Certain facts, however, present themselves for mutual consideration. First and foremost of these is section, or rather ex-section, of a portion of the spinal accessory nerve. This expedient yields in a large number of cases marked benefit, and in some instances it is followed by a complete disappearance of the spasm. In three of my own cases, however, it gave comparatively slight relief, the reason being, doubtless, that the spasm was more or less generalized, other muscles being involved. One of these cases I had the opportunity of following up and later, at my suggestion, Dr. Keen operated upon her, resecting the posterior divisions of the first three cervical nerves. The operation had originally been suggested by Dr. Wier Mitchell. This expedient was followed by a decided relief, though at last accounts the spasm had to some extent returned. We can readily understand why if the spasm be very much generalized—if a physiologic movement be represented by it—that the number of muscles involved may be very great. Thus in addition to the trapezius and sterno-mastoid, some, or all, of the following muscles may take part: the splenius, the rectus posticus major, the rectus posticus minor, the trachelo-mastoid, the complexuses, the obliquus capitis superior, obliquus capitis inferior, the semispinales, the semispinales dorsi, and the multifidus spinæ. This array of muscles shows the utter hopelessness of securing absolute or permanent relief in some cases by any operation on the peripheral nerve trunks. However, such operations should always be attempted, provided the case be not clearly proven to be of cortical origin. It is both interesting and gratifying to learn in this connection that Dr. Keen's operation has been successfully repeated by Dr. C. A. Powers (New York Medical Journal, 1892, p. 253). The patient was one in whom there was very little involvement of the spinal accessory supply. Dr. Powers adopted the expedient of Dr. Keen, and the result was a complete cure. Mr. Noble Smith (spasmodic wry neck, London, 1891) has also performed the operation with a successful result. The recurrence of rotatory spasm after such extensive resection of nerve trunks as was practiced on the case adopted by Dr. Keen seems to point to the cortical origin of the disease. The propriety of a cortical operation in such a case naturally suggests itself and deserves serious consideration. The center for the rotation of the head being situated, approximately at least, in the posterior portions of the first and second frontal convolutions just in advance of the arm center, it would be, surgically, very accessible and could probably be electrically determined at the time of the operation. Inasmuch, however, as the center for rotation of the head and neck appears to be closely associated with that for conjugate deviation of the eyes, such an operation should only be contemplated as a dernier resort. Regarding other surgical procedures such as stretching of the spinal accessory nerve or tenotomy of the sterno-mastoid muscle, they merely deserve mention. They are little more than makeshift expedients. However, an operation devised by Collier (Lancet, 1890, I, p. 1354) deserves special mention. Collier, it will be remembered, tried the effect of a ligature upon the spinal accessory nerve. The ligature was a silver wire and was twisted with sufficient force to lightly compress the nerve fibers. Strange to say, the experiment was entirely successful, the spasm ceasing absolutely. The same expedient was, however, repeated by Drs. Mills and Deaver with failure as the result.

(*To be continued.*)

American Electro-Therapeutic Association.

The Third Annual Meeting Held in Chicago, Sept. 12, 13 and 14, 1893.

AUGUSTIN H. GOELET, M.D., President.

(*Continued from page 34*).

DR. CHARLES R. DICKSON, of Toronto, read a paper on

FURTHER OBSERVATIONS ON THE ELECTRICAL TREATMENT OF GOITRE.

The reception accredited a paper on the "Electrical Treatment of Cystic Goitre," which I had the honor to read at the last annual meeting of the ASSOCIATION, and the interesting and instructive discussion elicited has prompted me to offer some further observations along the same line, but embracing a somewhat wider scope as to varieties treated.

No statistics are presented, as I consider that to do so at present would be rather premature. For a number of years past I have been endeavoring to the best of my ability to aid in solving a question that was well and truly termed an opprobrium in medicine and surgery, by one who took part in the discussion of my former paper, and my intention is to briefly outline some conclusions at which I have arrived.

At my out-door clinic at the Toronto General Hospital, I am confronted with a large number of cases of goitre of different varieties, many of which have gone the rounds of the other departments, and finally are referred to my own, the youngest of the departments—the electrical—the result is that the greater number of the cases with which I am favored are of rather an unpromising nature. Yet for that very reason they offer the best field in which to test the value of this treatment, and though it entails a large amount of patient and careful work, still, I feel that I have been amply repaid for all the time and thought given to this most interesting subject, by the results achieved. The progress of a number of my cases has been carefully watched by many of the leading practitioners on the staff of our Hospital, and as a consequence several have intimated to me their intention to give the preference to electrical treatment in future, and already have shown in a tangible way their sincerity, by referring to me their cases in parish practice, which is the most satisfactory proof of the value of my work.

Among other points brought out in the discussion last year, one of the most valuable was by Dr. Holford Walker, as to the use of powerful currents applied by means of clay pads. I had already employed electrodes externally without puncture in some cases, but not with the powerful currents advocated by Dr. Walker, so I determined to test the utility of the suggestion, and am highly satisfied with the results; in fact, am strongly of the opinion that this should be a first step before puncture is finally resorted to—that is to say, in cases in which puncture would ordinarily be indicated—while in many cases it should constitute the sole treatment required.

The earlier a case is seen and the less previous interference, the better will be the results, and herein lies the great hope for the popularity of this treatment, for patients who dread the disfigurement, inconvenience and pain, to say nothing of the risk of surgical, and often, indeed, medical measures, and have frequently delayed consulting the practitioner till compelled by the discomfort attendant upon the increase of size, will on the first appearance of the trouble gladly avail themselves of a procedure which offers

such great inducements with so little discomfort and almost no risk.

The size of a goitre is no gauge of the attendant discomfort, and dyspnea or dysphagia may be present quite early, especially at certain times; thus when the patient is exposed to cold, or in the case of females before the establishment of menstruation, or at the menstrual period or during pregnancy and especially toward its close.

When a case presents for treatment, careful and extended inquiry should be made into the history and all points that would tend to throw light upon the subject investigated, and patients encouraged to give their own ideas on the subject, particularly as to suspected causation. Three measurements, at least, of the circumference of the neck should be taken, a fixed point, preferably the vertebra prominens, being chosen for the back, while the measure is carried above the tumor for the first, over the central portion for the second, and below the tumor for the third, and, if one of these measurements does not coincide with a circumference at the level of the Pomum Adami, that should be taken also; a vertical measurement over the median line in front is often useful. The boundaries of the tumor should then be carefully mapped out, and its probable structure determined. On the care bestowed upon your diagnosis will depend much of the success of your labors.

The cases which are probably the most favorable for treatment are those of simple vascular engorgement of the thyroid of recent origin; in these relief is experienced very early, in fact often after the first application, and reduction is usually quite rapid. For the positive electrode I use the Goelet modification of the Apostoli clay pad as in gynecologic practice, warmed and well moistened and slipped down the back between the shoulders, with a dry towel folded over it to protect the clothing and catch what little drip there may be; for the negative electrode, I use a thinner clay pad, with a single layer of gauze over its face, imbedded in it, and the edges carried over the sides of the electrode. The larger the size, the better, as it should cover all the surface of the tumor, if possible. When thoroughly moistened it is applied over the tumor and carefully adapted to all irregularities. A flexible perforated metal plate, such as tin with a spring split post to attach the rheophore, is then imbedded in the back of the clay and both held firmly in position by two or three turns of bandage drawn as tightly as the comfort of the patient will permit. The current must be very carefully turned on and shock avoided. At first the sensation is decidedly unpleasant, but the patient very soon gets accustomed to it and the strength may be gradually increased. It is always wise to proceed with caution and be content with fifteen or twenty ma., usually for ten minutes at the first application, and gradually increase the strength at future seances, which may be every second day, till the maximum the patient can stand with safety is reached. This will vary very much with different patients. I have several times gone as high as 250 ma., in one instance of a fibrous form without discomfort to the patient, but such I consider an exceptional case and 120 ma., or less is more usual. I consider a strong current for a short time preferable to a weaker one for a longer period.

I have not found it necessary to supply moisture to the positive electrode during the application as suggested by Dr. Walker—who employed a cotton covering at this pole—as it is always moist when removed, but sometimes drop from a spoon or from a pledget of absorbent cotton a solution of bicarbonate of soda on the upper edge of the negative electrode, and let it work its way down as the directive force of the current carries the moisture to the back of the negative electrode leaving the face of it dry. At the close of the séance, the electrodes should be carefully and quietly removed, and the site of the negative lightly sponged off with a cold solution of boracic acid; this is a precautionary measure as far as the skin is concerned, as well as conducive to the comfort of the patient who should also avoid unnecessary exposure during the treatment.

In later stages, even where the tumor is distinctly fibrous, it is still wise to try the clay-pad method first, as I have frequently noted it produced marked reduction; if, however, it is found that after several weeks of external treatment little is being accomplished, puncture may be resorted to, observing strict aseptic as well as antiseptic precautions. Here I employ the clay electrode positive as before, while for my negative I use either ordinary surgeon's needles or longer ones manufactured out of piano wire, insulated as required with two or three coats of collodion, each being allowed to dry thoroughly before the next is applied. If the patient is very timid, a preliminary hypodermic injection of five to ten minims of a solution of 5 per cent. cocain and 6 per cent. antipyrin in distilled water may be made at the site of the proposed puncture, or some local anesthetic may be applied, but if possible it is better to avoid this, and if your needles are sharp and sufficient dexterity employed, there will be very little pain. I prefer to puncture through the isthmus if I can, and from as low down as possible and through the same opening each time carrying the needle to the different parts it is desired to act upon, seeing that the uninsulated portion is well within the growth and overlying tissues protected by the insulation. Direct the patient to swallow several times during the introduction and steady the growth with the unengaged hand; in this way puncture of larynx or trachea may be avoided. On the introduction of the needle great caution and the utmost care must be observed. The current must be very gradually turned on. The patient may not be able to stand more than ten ma. for ten minutes the first time, but at future séances, which may be once a week, fifty ma. may be reached; it is not often necessary to go beyond this. The current is gradually decreased and the needle withdrawn; if there is hemorrhage it may often be checked by the application of iodoform in powder or gauze, or by pressure. The puncture is then treated antiseptically. It is often an advantage to employ the clay electrodes in the interval between the punctures, the site of the puncture being protected by a small piece of gutta-percha tissue.

In the large vascular varieties, slow progress will be made with the pads; still, they will frequently effect reduction, but when they fail to do so, puncture is often indicated. Here the introduction of the needle, as well as its withdrawal, will require even more than the ordinary care, as largely dilated vessels are frequently met with, and important vessels much deflected from their usual course, and troublesome hemorrhage may ensue, but here care, pressure and iodoform should assist you.

In the cystic form, I adhere to the line of treatment presented in my paper last year. The pad treatment is of very little use in these cases, except in so far as it may reduce edema and thus afford relief from pressure. With the negative pole is connected an aspirating needle insulated to the desired extent by means of collodion, and the bare portion introduced well within the sac, being careful not to perforate the back of it also, as thin walls offer little resistance to your pressure. The contents are then aspirated and the sac filled to distension with a filtered solution of chlorid of sodium in hot, boiled water in the proportion of ʒj to ℥j. The positive, large dry pad having previously been placed in position as before, the current is gradually turned on to about fifty milliampères for about twenty minutes; it is then gradually turned off; the fluid re-aspirated; the needle carefully withdrawn; the puncture at once treated antiseptically, and firm pressure made by means of a large, thick gauze pad over the dressing and retained by wide and long adhesive strips.

With the exophthalmic form, I have had less experience than with any of the others, and have nothing new to offer of any value.

As a result of a year's further experience, I still maintain that in electricity we possess one of the most valuable, if not the most valuable of agents for the treatment of the various forms of goitre mentioned. The cases which are not relieved, and relieved early, are the exception and not the rule; in many cases the first application is followed by a sense of relief from the dyspnea and dysphagia. A larger proportion of cases can be cured by this method than by any other means at present known to the profession. Many cases I have known to be cured or relieved which have resisted every other accepted form of treatment. While the injection of iodin, or even its external application, is sometimes attended with very bad results, with due precautions the electric treatment offers the safest form of procedure. Even when puncture is required the operation is safer, the pain less, and the resultant scar, if there be any, more insignificant than with any surgical measure necessary. There is no disfigurement during the time it is employed, hence patients will be more apt to resort to it early, while they are in the best condition to obtain relief. While the size of the growth is no gauge of the discomfort it is producing, neither should it influence our opinion as to the results to be expected to the extent that one would imagine, and a large, distinctly fibrous goitre the size of the two fists, has yielded more readily than a soft, flabby one the size of a walnut.

Great patience is necessary, as well as great care and considerable dexterity. The strength of current should be decreased at the close of the séance with as much caution as it is increased at its start, or great shock may ensue. A

case should not be regarded as hopeless till two or three months have been carefully spent upon it. It is well to intermit treatment occasionally for a period of several weeks, or even two or three months in the very chronic cases, and allow nature a chance to assist in the process of resolution and absorption. It may be indeed necessary to spread the treatment over a period of a couple of years in some cases. Slowness of result may be excused if cure come eventually.

The diagnosis should be very carefully made, then your battery or other source of power and all the parts of your current must be in good condition and resistance, internal and external, at a minimum, or the patient will be unable to tolerate the stronger currents.

The clay pads may be kept warm by means of Goelet's metal water bottle. Usually I keep the large one face downwards on a couple of folds of wet lintine and pour hot water over the face of it just before applying. It can readily be cleansed after using. The smaller pads I keep wrapped in a wet towel, first removing the flexible metal plate. Hot water may also be poured over these before using. All needles should be kept aseptic, while the aspirating needles and attachments will require particular care as to their aseptic condition.

Dr. Massey said that some years ago he had absolutely cured a cystic goitre which had resisted other means, but he had found it necessary to maintain drainage also. He thought this preferable to continued puncture. He had found iodin cataphoresis produced so much irritation that it was necessary to stop the treatment. Out of six cases of exophthalmic goitre, he cured four completely, simply from external applications of currents of ten milliampères.

Dr. Morton had experimented with very strong galvanic and faradic currents combined, by the DeWatteville switch. In one case, after a month's treatment, the tumor was reduced more than two-thirds. In another instance, very powerful faradization was used transversely, and then galvanization. It was possible that there was an advantage in this combined method.

Dr. Walker referred to the case of a lady who had been formerly under the care of Dr. A. Lapthorn Smith, but who now came to him as she was living in his neighborhood. She had come every year for three years, remaining each time three weeks under treatment. Relief was so marked that she could live the rest of the year comfortably. Probably three months would have given a practical cure, but she would not persist in the treatment long enough.

In answer to a question from Dr. Cleaves as to whether it was not common for the symptoms to disappear, even under the influence of mild currents, it was stated that there would be usually a decrease of one-half to three-fourths in size under each period of treatment as well.

Dr. Dickson, in closing the discussion, said he had endeavored in all cases of persistent treatment to avoid the admission of air into the aspirator, and to enforce strict antisepsis. His idea in using the fluid was to have every crevice of the sac filled with a good electrolyte. Some of his cases were relieved after the first treatment. The cases were mostly those which had received all kinds of external and internal treatment before coming to him.

In one case which was distinctly fibrous, and in which the tumor was of enormous size, there was a protrusion of the right eyeball. This diminished in proportion as the tumor was reduced, and at present it could not be appreciated by palpation. He had never tried faradization in goitre.

Second Day, Morning Session—September 13.

The meeting was called to order at 10:15 A.M. Dr. Holford Walker, Toronto, Canada, read a paper on

ASCITES TREATED BY GALVANIC CURRENT—REPORT OF CASE.

A. J. S., age 9, suffering from marked ascites, and general ill health; was brought to me by Dr. Burritt of Toronto, latter part of October, 1892. History: During the summer the little fellow seemed somewhat depressed, and sat about, an unusual circumstance for him; he was taken to a watering-place during July and August, and went into the water only up to his waist, every day, remaining in ten to fifteen minutes. At that time he was observed to become thinner generally. End of September, his abdomen was found to be very much distended. Dr. Burritt was called in, and after two weeks' treatment met Dr. Strange in consultation. They decided to tap, and endeavor to make a diagnosis of cause, the abdomen being too tense to make anything out. Three pints of fluid were removed, but without throwing further light on the cause. Four days after tapping, the cavity was as full of fluid as ever, and patient continued to fail rapidly.

I advised exploratory incision, wash out abdomen and seek for cause. The father of the patient, however, thought otherwise, and insisted on a resort to electricity first, with the following results: Thirty-nine applications of from fifty to seventy-five milliampères were administered during the months of November, December and January, positive to abdomen and negative alternately to cervical and dorsal regions. The general health showed signs of improvement almost from the first; in three weeks it was perceptible that absorption was going on, and all fluid had quite disappeared by the end of January, together with recovery of general health. Has continued well up to date, with the exception of a mild attack of rheumatism, that occurred last month, involving the right wrist and ankle. He is now going about apparently quite well. I need hardly say that previous to electrical treatment, recourse was had to all remedial measures indicated in the case by the physician in charge.

DISCUSSION.

Dr. Hayd asked the cause of the ascites.

Dr. Newman said he had notes at home proving the efficiency of electricity in ascites. He cited from memory the case of a man from the interior of New York who had extensive ascites and anasarca. Two physicians from Albany and five from Syracuse were called in consultation, and expressed the opinion that he could not live more than two days. He was then brought to the speaker for electricity. Inside of two days he measured three inches less, and finally he got well. The water was probably partially extracted from the body, and the secretions thereby stimulated. Without referring to his case-book he could not state what was the original diagnosis. He knew of several other cases which had been equally successful,

Dr. Engelman said that although it seemed hardly proper to bring up in this Association anything which would throw doubt on the electric treatment of these cases, he felt constrained to report a parallel case where two of the ablest physicians in his city were in attendance, and where he had no more doubt about the diagnosis than if he had made it himself. The patient is still living in St. Louis and has been in good health for the past eight or ten years. She was slowly sinking from renal disease, as shown by microscopic and chemic examinations of the urine, and the accumulation of ascitic fluid was enormous. His own father was the consultant, and agreed with the attending physician regarding the condition. The patient being in such a desperate condition, and the regular practitioners in attendance being unable to hold out any hope, some of the family insisted upon calling in a quack—a man who made certain "passes" about his patients. From that time on, improvement was steady, and she has since then been entirely well. The attending physician consented to be present and watched these foolish performances, and he can vouch for what was done.

Dr. Gehrung of St. Louis, thought that most of these kidney diseases are due largely to spasmodic irritation, and that the relaxing effect of the electricity on the nervous system allowed of renewed secretory activity. He had used electricity where there was partial suppression of urine, and no symptoms of Bright's disease, and had succeeded very well in relieving the condition.

Dr. Green asked if the reader of the paper had made a urinary analysis? About four months ago he was called to consult with Dr. Barbour in a similar case—a man 41 years of age who two years ago had an attack of septicemia. About eight months ago he began to show symptoms of asthma, and finally, microscopic and chemic analysis showed the existence of Bright's disease. His death seemed to be simply a question of a few days, as he was already semi-comatose. The attending physician suggested the use of galvanism, but the speaker did not think the suggestion of much importance. A week or ten days later, he saw the physician, and on inquiry was surprised to learn that the patient had entirely recovered. Galvanism had been used, and within four days the patient was very decidedly improved.

Dr. Walker, in closing the discussion, said that in his case a large clay abdominal electrode formed the positive pole, and because the patient was very sensitive, seventy-five milliampères was the highest strength possible. The negative pole was a large metal disc applied alternately between the shoulders and on the back. The treatment was given for fifteen minutes on alternate days. He was as much in the dark to-day as at that time regarding the diagnosis. Every

day the boy went into the water and was immersed up to his waist—whether that produced the sub-acute inflammation or whether, owing to a tubercular diathesis from the maternal side, a tubercular peritonitis had been set up, he could not say. It was with this in view that he had advised exploratory laparotomy, but the boy was in such a wretched condition that this measure seemed extremely hazardous. The kidneys were perfectly healthy. If the cure in this case were due to hypnotic suggestion, it is certainly a very tangible and practical method of calling hypnotism to our aid. Personally, he thought the cure was directly due to the continuous current.

(*To be Continued.*)

MISCELLANY.

Cincinnati Academy of Medicine.—The Cincinnati Academy of Medicine dedicated their rooms in the new Lincoln Club Building Monday, January 8. The rooms were ornamented with flowers, music filled the air, and there was speech-making galore.

Instance of Longevity.—John Dawson, aged 104 years and one month, and the eldest resident of the State, died at noon December 22. He had fifteen children, thirty grandchildren, sixty-four great-grandchildren and ten great-great-grandchildren. He attended the funeral of Washington, cast his first vote for Madison, and served in the war of 1812.

Deaths by Wild Animals in India in 1892.—The *British Medical Journal* states that in the year 1892, the mortality caused by snakes and other animals was 21,988 as against 23,650 in 1891. The deaths by snake-bite were returned at over 19,000, about 2,000 less than in 1891. The deaths in Bengal alone were by wild animals 1,664 and by snakes 19,025. About 85,000 snakes were destroyed, and 10,000 rupees were dispensed as rewards.

The Children's Hospital at Columbus, Ohio, was opened Dec. 30, 1893. The building is three stories, of gray pressed brick, with high tiled roof, ample windows and imposing entrance. The kitchen has been placed on the third floor, linen closets in keeping with the demands of such an institution have been put in, and many minor alterations have been made. The building is so arranged that two wards and an elevator can be added at any time in the future.

Testimony from Postmortem Examinations.—In a trial for assault with intent to commit murder, the Supreme Court of Illinois holds (case of Friederich v. People, decided Oct. 27, 1893) that it is competent for physicians to testify with regard to the appearance of a fractured skull at the time of a postmortem examination held more than a year after the assault. But such evidence can not be used to show that the person who committed the assault was responsible for the other's death.

Cook County Hospital Appointments.—The recent political change in the County Commissioners has made a corresponding change in the staff of this Hospital.

The following are the appointees, some of whom are on the present staff:

Surgeons—Drs. M. Muffat, O. J. Price, T. A. Davis, A. F. Hoadley, Francis A. Sherwood, A. J. Bouffleur, C. W. Hawley, Robert Melms, J. B. Murphy, C. W. Johnson and C. F. Greentree.

Physicians—Drs. James B. Herrick, George F. Butler, J. R. Reynolds, A. R. Edwards, George I. Sintxel, M. Meyerovitz, F. J. Mosehek, C. F. P. Korsell, W. H. Ballard, T. Turk and A. W. Baer.

St. Barnabas Hospital.—The trustees of St. Barnabas Hospital of Minneapolis, are much exercised over the prospect of losing the bequest of Mr. Martin of that city, who left a property known as the Keagan Lake property to that Hospital. It was, however, on condition that the citizens of Minneapolis should raise $1,000 annually for the support of the same Hospital. In case of failure to raise the amount, the property was to go to St. Luke's Hospital in New York city. As it is now said to be worth about $200,000, and likely to grow more valuable with time, there is little disposition in Minneapolis to allow the property to pass out of their control.

Medical Legislation in Virginia.—The law regulating the Medical Examining Board of Virginia is eight years old. Much good has been accomplished for the protection of the public, but the organization of the Board is such that it has failed in some of its legal aspects. The *Maryland Medical Journal*, December 23, states that it is proposed to reduced the number of its membership to ten, taking one regular physician from each Congressional district, plus two irregulars or homeopaths, to be selected by the Governor of the State. It is also proposed to amend the laws governing the prosecution of itinerant quackery. The *Journal* instances a case wherein the present laws failed of the purpose during the past year; a notorious quack from one of the northern cities set up his stand in Richmond and successfully defied prosecution, gaining his point by pleading the unconstitutionality of the license law. Under a legal technicality, and with the aid of a shrewd lawyer, the quack continued to practice at his own option and pleasure without a license from the Board of Examiners. When a lawyer goes to work to unravel the work of another lawyer, and succeeds in his endeavor, it behooves the Board to change its legal advisers, or take lessons from the counselor who drove them out of court. Although the existing laws have been a decided benefit to the profession of Virginia, and *pari passu* have been a protection to the general public, those laws should be so strengthened that they can withstand the first serious opposition that shall be made to them. The effect, upon certain low graded medical colleges, of repeated rejections, by the Board, of their young graduates has been to raise the standard of requirements in those colleges. One member of the faculty of a distant college is reported to have said that his college had been forced to raise the tests of graduation for the reason that his faculty was tired of seeing their graduates rejected by the Virginia Board of Examiners.

LETTERS RECEIVED.

(**A**) Allen, Ulamor, Jersey City Heights, N. J.; Aldrich, H. C., Minneapolis, Minn.

(**B**) Bernd, Henry & Co., St. Louis, Mo.; Brayton, S. H., Evanston, Ill.; Bridge, W. C., Elgin, Ill.; Billings, J. S., Washington, D. C.; Bates & Morse Adv. Agency, New York, N. Y.; Biddle, N. L. & Co., Chicago, Ill.; Breedlove, J. W., Ft. Smith, Ark.

(**C**) Comegys, C. G., Cincinnati, Ohio; Clausen, J. E., Omaha, Neb.; Cordier, A. H., Kansas City, Mo.; Chollar, T. T., Brooklyn, N. Y.

(**D**) Davidson, F. B., Fleetville, Pa.; Damrell & Upham, Boston, Mass.; Dodds, W. E., Pachuca, Mexico; Duffield, H. T., Pittsfield, Ill.; Dodds Advertising Agency, Boston, Mass.

(**E**) Elder, E. S., Indianapolis, Ind.; Eastman, Thos. B., Indianapolis, Ind.; Eyster, Geo. L., Rock Island, Ill.

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ORIGINAL ARTICLES.

CRITIQUE OF MACROSCOPIC EXAMINATION OF SPECIMENS REMOVED IN THIRTY-TWO CONSECUTIVE LAPAROTOMIES.

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(*Continued from page 46*).

Case 9.—Age 24. Puberty at 11; menstruation regular but quite profuse, lasting about seven days. She was very pale and anemic. Menstruation was very painful for four days and compelled her to be in bed two days. Last period flowed for two weeks. Has long had leucorrhea which has distinct odor and is yellow. She is tender on pressure in pelvis, especially on left side. She was occasionally sick in bed for two months at a time and had so much pain that much morphin was used. Two years ago she had two abortions and since that time she has been ill with pelvic trouble. I sent her to the Woman's Hospital and under rest and hot douches the exudates (size of a large apple on left side) nearly all disappeared. A renewed attack of pelvic trouble while in the Hospital induced me to operate. The recurring exudates were deposited on the left side at each attack. The diagnosis was salpingitis of gonorrheal origin; physicians had treated her husband for several years for gonorrheal discharge from the urethra. I operated at the Woman's Hospital Oct. 4, 1892, with the assistance of Drs. White and Shibley, removing both appendages. She made a very good recovery. Drainage for two days.

The specimens were of peculiar interest, as pus was found in the interior of one ovary on cutting it open, so that gonorrheal virus had infected the ovaries. Both ovaries were cystically degenerated; some of the cysts were three-quarters of an inch in diameter. The tubes had carried the infection to the ovaries and infected them. The ovaries were covered with marks of old and recent inflammation. The tubes were both similar. The perisalpinx was richly covered with flakes of lymph, and organized exudates, old and recent. The peritoneum covering the tubes was slightly thickened. The *musculature* was not visibly changed. The endosalpinx showed the chief attraction. Its folds were swollen and very abundant. The lens showed no break in the mucous membrane. The swollen, edematous tubal plicæ were so large and numerous that the tubal lumen was packed quite full and she had a good deal of menstrual pain. It would be difficult to force the menstrual fluid through the tube, and the irritation would induce considerable tubal peristalsis or tubal colic. In this case the gonorrhea had advanced through endometrium and endosalpinx where it makes a distinct home in the cylindrical epithelium of those two membranes. Now since the home of the gonococcus is in (glandular) cylindrical epithelium, it can easily affect the ovary, for the ovary is covered by germinal epithelium (glandular), and then the gonococcus advances to the membrana granulosa which is typical glandular cylindrical epithelium. The membrana granulosa thus becomes infected by the gonococcus and soon becomes cystically degenerated. The Graafian follicle then becomes pathological. Again, to show that the infection went out at the tubal ends the parovarian in each broad ligament was distended. Kobelt's tubes were enlarged the size of peas. Five pedicled stalks existed in one parovarian.

Then, in general, ovarian and parovarian cystic degeneration is a secondary disease and derived from infection carried to them by the tubes. The pathologic condition removed from this woman has restored her to usefulness and health.

Case 10.—Mrs. S., age 40. Four children. Ill two years, since birth of last child. This woman came to the Woman's Hospital, sent by Dr. Miller. She had incontinence of urine and I treated her for two months with bladder douches and drugs. She did not improve. I dilated the urethra and explored with the finger but found nothing and it did not help her. The whole nervous system was examined but no defect discovered. The uterus was bound to the left pelvic wall and she had salpingitis. I finally concluded, after two months of treatment, that the incontinence of urine was reflex from the old pelvic disease. On Jan. 18, 1893, I removed the appendages assisted by Drs. White and Shibley. The pelvis on the left side was found full of exudate and the uterus was held down in Douglas' pouch by about twenty organized bands. The uterus was freed. No drain was employed. She recovered quite well and the bladder improved. The old organized exudates accounted for the bladder paralysis by undue pressure on the sacral nerves, especially those which supply the bladder.

The specimens show that around the abdominal tubal ostii, inflammation had spread very wide. The tubes were extraordinarily long with wide lumen. The perisalpinx had also recent adhesions on it. The *musculature* of the tube was slightly atrophied. The endosalpinx showed the chief lesion of disease. It was extremely atrophic. The lens revealed in the ampulla three large tubal plicæ which extended right to the tubal ostium abdominale. All the endosalpinx except these three plicæ was atrophied.

The folds had sunk down two-thirds of their original size. No solution of continuity could be found in the endosalpinx. This atrophy and some dilatation of the tubal lumen made the tube appear unnaturally large in caliber. No doubt the large tubal lumen enabled the infection to pass easily into the peritoneal cavity and to infect the ovaries.

This case confirms a discovery I made in investigating tubes of man and animals, which was that the lumen of the left tube is greater than the right, and that accounts for the fact that women are ill seven times out of ten on the left side. These tubes show very small abdominal ostii. The ovaries were cystically degenerated. The parovarian was normal and contained some fourteen vertical tubules. The trouble arose from septic matter passing through the tubes at the last puerperium, two years previously. It was not gonorrheal as it had fairly recov-

ered, and only left solid adhesions which require many years to absorb.

Case 11.—Mrs. M. No children; age about 36. This woman had severe pain at menstruation and lost so much blood that she was a neurotic wreck. She had salpingitis. I operated on her May 1, 1893, at the Woman's Hospital, assisted by Dr. Stillians, whose patient she was. She made a good recovery. No drainage.

The tubes have the most typical appearance of convoluted, contorted or spiral angulation I ever saw. They are both alike and so twisted and rolled that at points they look double. The perisalpinx is considerably thickened. The peritoneum does not dip down into the depressions between the kinks of the tube. The *musculature* of the tube is slightly atrophied. The endosalpinx is considerably shrunken and atrophied. No solution of the continuity exists, and the lens in excellent light reveals no epithelial denudation. I wish here to call attention to a band running along the upper border of the perisalpinx. I never saw it described in any book, nor have I ever heard any one mention it. The only way to observe it well, is to put a typical specimen of convoluted tubes in pure alcohol, and as the alcohol shrinks the specimen, the band will show itself plainly running along the upper border of the tube in the perisalpinx. The band resembles exactly the tænia coli; or one of the bands which run along the colon, which give the colon its sacculated appearance. It is also shorter than the colon. The band running along to top of the tube is shorter than the tube by about the same proportion as it is on the colon. Now this band has a share in convoluting and twisting the tube; I will call it the *tænia tubæ*. Under the lens the band is composed of connective tissue.

I have observed this band (tænia tubæ) previously, but on searching anatomy I can not find it described. I have always found the tænia tubæ well made in the most typically convoluted tubes. It appears to shorten the tube in some cases one-sixth of its length and to throw the tube into convolutions. These spiral tubes are quite frequently found in women with tubal colic or pre-menstrual pain. By applying a powerful lens on the endosalpinx in bright sunlight another point is revealed, to explain pre-menstrual pain or tubal colic. For at the various angles of the bent tube the tubal plicæ lose their parallel appearance and are thrown into whorls, so that the ordinary current of fluid passing through the tube at the menstruation will be retarded and obstructed. In these whorls of tubal plicæ a secure nest may be obtained for ectopic gestation. The cilia all bend toward the uterus and the tubal peristalsis is also toward the uterus, and thus the cilia and peristalsis induce a current of fluid toward the uterus at every monthly. The fluid arises from a congested endosalpinx. The spots of denuded epithelium, the tubal hernia, the depressions in the endosalpinx and the tubal plicæ whorls all may have a share in lumen ectopic pregnancy.

So far, ectopic gestation has not been demonstrated in animals below man. The parovarian was cystic; as many as twelve cysts could be counted in one; nearly all were dilatations of Kobelt's tubes. Fifteen vertical tubes were counted. The ovaries were normal, with the exception of three to five pathologic Graafian follicles found in each ovary, filled with cheesy matter. In this woman the old gynecologic fad of "ovaritis" did not exist, in fact, but the tubes were the cause of her sickness. The diagnosis in her case was salpingitis, pain (excessive peristalsis), hemorrhage.

Case 12.—Mrs. H., age 38. Two children; four miscarriages. Date of last pregnancy nine years ago. Menstruation regular, no pain, lasting four days. Married at 16 years. Four years ago had pain in right side, and one and one-half years ago noticed a swelling in right side. She had a myoma which had worked down between the bladder and vagina. It was the size of a hen's egg. I extirpated it per vaginam after the laparotomy, which I did at the Woman's Hospital, assisted by Drs. Shibley and White. Drain tube was used. She made a good recovery but a slow one, and left in four weeks.

The tumor found in the right side was a dermoid, size of a cocoanut. It had no pedicle, but was rotated off its axis and lodged and nourished in the lower border of the omentum. This accounts for her attack four years ago when, no doubt, the dermoid twisted off its axis which likely lay in the ovary, as nearly all dermoids arise in the ovary. When it twisted off its axis it did not become gangrenous because it was excluded from air. It nourished from surrounding organs because its twisting off created an irritation (mechanical), and that caused an exudate which re-organized and produced blood vessels, lymphatics and nerves around the circumference of the tumor. The formation of this new "nourishing pedicle" is of fine, delicate structure having a bluish tint. The dermoid contained hair, fat (sebum), and the products of the skin. In the cavity of the tumor was found one-half of the jawbone, containing one tooth of perfect form and composition as large as the adult tooth behind the canine, and another tooth of half its size, of perfect form and composition. The enamel is perfect. The jawbone is more porous than normal. Over the top of this bone lay a distinct membrane which I took to be the dura mater of the brain. These dermoids and their skeleton remains are no doubt the vain attempts of the germinal epithelium, which partially comes from the epiblast, to form complete structures. There was so much old adhesion that the right tube and ovary were not found. They may have been torn away with the dermoid and atrophied.

The left tube had salpingitis. The endosalpinx was in various stages of atrophy, as the lens would plainly reveal patches where the tubal plicæ were four times as small as normal, and other patches with abundant tubal plicæ. The tumor from the vagina proved to be a myoma about the size of an egg. It no doubt had traveled from the uterus down into the space between the bladder and vagina from the uterine rhythm during menstruation. The ovary was normal.

Case 13.—Mrs. D., age 30. One child; one miscarriage. Pain in pelvis and cystic tumor diagnosed. Laparotomy Dec. 22, 1893, at Woman's Hospital, assisted by Drs. Shibley and White. I drained one day. I removed both appendages on account of a distinct history of gonorrhea and pelvic suffering. The tubes are normal in their perisalpinx and *musculature*. There is endosalpingitis with sero-pus floating over the mucous membrane. The endosalpinx looks unhealthy. It is edematous and friable. It is swollen in one place and atrophied in another. One tube is stretched over the parovarian cyst until it is seven inches long. The ovaries are normal. The cyst proved to be parovarian. It is five by four inches in diameter. Four gynecologists, including myself, diagnosed it a tubal cyst. It can be stripped entirely out of the broad ligament. The other parovarian is normal, containing twelve vertical tubules. The hydatid of Morgagni is as large as a hazel nut, with a pedicle one inch long.

Several small cysts in the region of Kobelt's tubes are as large as a pea, and as usual a little cyst nearly always exists on the upper border of the perisalpinx just over the abdominal sphincter of the tube, vestigial remains of the Wolffian body.

Case 14.—Mrs. H., age 22; one child, age 3 years. Puberty at 13; menstruation regular, lasts three days and stops a day and then reappears. She has painful menstruation, at the same time headache and backache. The pain is located in pelvis, but radiates into limbs and body.

She has a yellow, bloody leucorrhea with considerable odor. She has considerable pain, indigestion and water-brash. Bowels regular.

The diagnosis was a tumor in the pelvis, and we knew she had gonorrhea contracted two years previously from her husband. I operated on her at the Woman's Hospital, Jan. 31, 1892, assisted by Drs. Shibley and White. Two ovarian tumors were removed about the size of a turkey egg. Drainage and irrigation, and the abdomen closed by silkworm gut.

In this operation, large numbers of organized bands existed in the pelvis, reaching far up among the intestines. Some of the bands were a foot long. Loops of the intestines passed between the bands as loops of rope would pass between the fingers of the hand. The bands held the uterus, appendages and intestines in a solid mass. The wonder was that none of the intestinal loops were obstructed or strangulated. I generally break up all such adhesions, and scarcely ever ligate any, as hemorrhage soon ceases in a band, especially if it be broken in its middle where the circulation is quite feeble.

The specimen showed double pyosalpinx. The left had nearly lost all its pus by absorption, while the right contained a dram. The endosalpinx was in various stages of disease from catarrh to destruction.

The *musculature* of the tube showed only the alteration produced by thinning of its wall. However, the tubal wall was thick, but that was due to inflammatory exudates. The perisalpinx was thickened from ancient and recent peritonitis. Bands and exudates of various ages lay on and around the appendages. Both ovaries had become thoroughly infected by two years of gonorrhea, and cystic degeneration of the Graafian follicle had proceeded until the ovaries were the size of turkey eggs; some of the degenerated cysts contained pus. The gonorrhea had passed from the cylindrical epithelium of the tubes to the germinal epithelium of the ovary (glandular epithelium) to the cylindrical and glandular epithelium of the Graafian follicle. The reason of the disastrous infection of both ovaries was due to the method of the closure of the abdominal end of the Fallopian tube, i.e., some of the fimbriæ were left in the peritoneal cavity after the peritoneum around the mouth of the tube had contracted. These few fimbriæ had instigated a continual recurrence at menstrual and other times, when the mucous membrane on the fimbriæ was congested, and started anew the old (gonorrheal) infection. Ovarian infection is seen to perfection in this case.

The tubes carried the infection to the ovaries, and this gives more evidence that ovarian disease is nearly always secondary to tubal disease and caused by infection. This patient left the Hospital seven weeks after the operation. She was then well. She had a small fistula which frequently occurs after gonorrheal pyosalpinx, as one can not remove all the diseased tissue and the ligature became infected. Six months following the operation she had the fistula. No fecal matter ever came through it. Eight weeks after the operation, about the time the patient removed home, she began to vomit and vomited steadily for three weeks, and she has vomited about once weekly the following four months.

Aug. 1, 1893, she returned from her home in Indiana for treatment at the Woman's Hospital. I found a tender spot in the region of the gall bladder and pylorus. She has lost over thirty pounds, and is of a pale saffron color. She has periods of terrible pain and sometimes vomits. Her appetite when not in pain is good. The trouble seems to have no connection with the laparotomy. The diagnosis by Dr. Franklin H. Martin and myself is thought to be a gall stone or malignant disease of the pylorus. We are now waiting developments for a coming operation.

Stools move about every two days and are fairly natural. It appears to me that her second trouble has nothing to do with the laparotomy. (Seven weeks later this lady has gained about fifteen pounds and is looking well.)

Case 15.—Man, age 24. Ill for several weeks. Temperature varied up to 102. Pain and swelling on right side from iliac region toward lower rib. A distinct boggy tumor could be felt. It had an elongated form and distinct crepitation could be perceived by manipulating it.

The diagnosis was appendicitis. Operation evacuated several drachms of pus. The appendix was not searched for, but a drain tube and gauze were inserted. The tube was shortly after withdrawn. He made a good, easy recovery.

Case 16.—Ectopic pregnancy. Mrs. B., age 22, was married in July, 1892. In December, 1892, a practitioner produced an abortion on her of probably a three months pregnancy. From December until the last week in February, 1893, she was very ill in bed with much fever. In the last week in February Drs. Simon and Abel were called to attend her. At this time she had a severe chill and her temperature rose to 104. On February 26, I was called in consultation to see her, and I found the pelvis absolutely full of a hard, boggy mass, which extended out of the pelvis into the right side of the abdomen, in the iliac region. Aspiration per vaginam was suggested, but I did not think it best, and urged that the woman be sent immediately to the Woman's Hospital. She was in the Hospital one day and a night when I noticed the temperature was rising up to 103. On February 28 I diagnosed rupture of the pelvic cyst and infectious invasion. One hour after my leaving the hospital she had a severe chill, and the temperature rose rapidly to 106.2. Immediate preparations for an operation were made. Assisted by Drs. Shibley and White, I operated in the presence of Drs. Simons, Lucy Waite and Millman. On opening the abdomen the pelvis was found full of a hard mass, which was closely covered over by adherent omentum. Fortunately, the omentum could be stripped off the mass. The mass proved to be the fimbriated end of the tube, containing about a pint of stinking pus. The whole mass had to be literally torn out of the pelvis. After removing both appendages, the abdomen was irrigated with some eight quarts of hot boiled water and closed with silkworm gut sutures. Drainage was employed. The tube on the right side proved to have the large abscess in the fimbriated end, while in the isthmus of the tube was found the placental remains of a fetus.

The placenta was about one and one-half inches long and one inch thick. No fetus could be found.

The history of this case may be interpreted as follows: the woman first became pregnant in the tube where the fetus died. She then shortly afterward became pregnant in the uterus. Three months after, she was criminally aborted, and this abortion distributed infection anew along the right tube, which induced the tubal abscess.

The tubal disturbance at the time of death of the fetus would, no doubt, have subsided but for its exacerbation at the time of the criminal abortion and, as the os is never prepared for an abortionist, soon closed and retained the infected material, which overflowed in the direction of least resistance along the Fallopian tube. The opposite tube was healthy as far as the eye could detect.

This is a typical case to show that prompt surgical interference may save the dying. We are well aware that surgical operations on the dying are very unsatisfactory. Very often the subsequent wish arises that no operation had been done on a patient who expired almost with the completion of the operation. But this woman, who was only 22 years old, though

dying, showed a hopeful vigor that we thought might rally.

She did rally and the next day the temperature had fallen 5 degrees, and the pulse from 130 and 140 had fallen to 110. I have never known a patient to get well after a temperature of 106.2 with abdominal section.

Dr. Byford who had noted the height of temperature, said he had not known one to recover after operation with such a temperature. At the operation we took the liberty of removing the apparently normal appendage, for it may be noted that when a woman has pyosalpinx on one side that, sooner or later, the tube on the other side becomes involved. It is a very notable feature in these old cases of pelvic inflammations how the peritoneum of such women becomes tolerant to manipulation, and it also resists the invasion of infection to a powerful degree. We will note a feature in diagnosis of some troubles in the peritoneum. It may be observed that so long as the inflammatory masses remain in the pelvis, or closely connected with structures mainly supplied by the sympathetic nerve, the pain is dull and not of a cutting or short character. But as soon as the inflammation encroaches on the abdominal wall where the peripheral ends of the spinal nerves are in close proximity, then pain is much more manifest, and one can diagnose with fair certainty a localized peritonitis of the abdominal parietes. The diagnosis of this case could not be made as to whether it was ectopic or not, for we did not know that she had had an abortion produced until after the operation, as it was naturally kept a secret. This is a typical case to show that one of the great landmarks in gynecologic practice is abortion. In teaching students and practitioners, we have frequently called attention to the idea that in gynecology there are six great landmarks worth knowing, viz.:

1. Anatomy.
2. Menstruation.
3. Labor.
4. Abortion.
5. Gonorrhea.
6. Tumors.

Each one of these landmarks presents centers around which the diagnosis will turn. Around these landmarks, as principals, must cluster the details of diagnostic conclusions.

In this case the prompt application of modern surgery saved the woman from certain and speedy death, and restored her to her family as a useful member. Time and experience strikingly confirm exploratory and confirmatory sections in cases of doubtful diagnosis—and many are doubtful. This patient came to my office seven months after the operation and she reports herself as perfectly well. She has gained some twenty-five pounds in flesh and is as robust as woman could appear.

Case 17.—Age 30. One child 11 years old. One miscarriage. Puberty at 13. Menstruation painful and irregular. Married eleven years. She has backache and headache, Leucorrhea yellow, green or bad odor. Has been ill eight years. Has had temperature varying up to 104 for many months.

Some six gynecologists examined this patient, but none could give sufficient reasons for any diagnosis. Finally, in consultation with Drs. Byford and Martin, it was decided to operate. On Feb. 28, 1893, assisted by Drs. Shibley and White, I operated at the Woman's Hospital.

The tumor filled the pelvis and abdomen up to the navel, and lying in front of the tumor to the left was the uterus with highly diseased appendages. The tumor proved to be a large infected dermoid universally adherent. It developed in the broad ligament and raised it up to a level with the umbilicus. It proved to be the most difficult of operations and lasted an hour and a half. She collapsed at the last, and her pulse was not perceptible in the wrist for many hours. She was bathed in cold perspiration. The foot of the bed was elevated. Hot salt enema were given per rectum. Considerable whisky was given by mouth, hypodermically and by rectum. For three days her pulse was over 140. I could frequently count it up to 180. But her temperature for those three days was about 100 and 101 per rectum. The pulse slowly went down for ten days when it was 110 and temperature 98. During all the time the drain tube did good work. The recovery of this woman is one of the most miraculous I ever witnessed and much of it is due to trained nursing.

She came to my office six months after the operation, a large, robust, healthy looking woman. She still had a small abdominal fistula which secreted a few drops daily.

The specimen is remarkable as showing pathologic progress for some ten years. The Fallopian tube has a wall of solid connective tissue half an inch thick. The mesosalpinx and perisalpinx present the thickened and roughened appearance of repeated inflammations. Bands, adhesions, exudates and flocculent deposits tell the story. The *musculature* is fully one-half an inch thick but nearly all of this is hard white connective tissue, and muscle in it is very scarce. The endosalpinx shows only fragments of its original. It is disorganized in places and atrophied in other places. A few widely separated tubal plicæ present themselves under the lens as fairly normal but nearly all atrophied. The dermoid appears to be developed out of the ovary. It has on its surface quite a number of small cysts similar to the Graafian follicles, and its wall for a large part seems to be ovarian tissue with some very small ovarian follicles growing in it. Inside the dermoid cyst a thick membrane can be peeled out which I take to be the old original membrana granulosa. Parts of this membrane are one-quarter of an inch thick and its line of demarkation from the ovarian tissue is complete. This dermoid has a history like almost all dermoids and that is that they grow out of the ovary; they are ovarian dermoids. The broad ligament over the dermoid was enormously hypertrophied. The dermoid was filled with sebum—a kind of oily substance of a white color and of the consistency of lard. It contained hairs and many other skin products. A dermoid is a tumor containing skin and some of its appendages as hair, teeth, nails—in fact almost any portion of the body may be found in it, that is in the region of the epiblast. I have found the skull and the cranial nerves.

Case 18.—Mrs. H. Sent to me by Dr. J. F. Percy of Galesburg, Ill. She was 48; puberty at 17. Menstruation regular and painless, lasting two days. Has had ten children, ages 27 to 12. It is eleven years since last child. She has backache and slight leucorrhea. She has been compelled to be quiet for the last few years from simply pressure of the tumor. The abdominal swelling has increased for two years and rapidly for ten months. She was treated but not tapped. In examination a little fluctuation was detected but nothing definite could be elicited, and it was impossible to tell what kind of a tumor was before us. I could not map out the uterus. So with careful examination with inability to diagnose, it was decided to explore. At the Woman's Hospital Dec. 12, 1892, assisted by Drs. Shibley, White and Percy I operated. The tumor proved to be ovarian with some adhesions. But only a part of it contained fluid. The solid part was divided into many compartments with walls varying from one-half inch to three inches thick of fibrous tissue. The cavities contained semi-solid jelly which was probably mucus and other matter secreted by the membrana granulosa. The tumor weighed seventeen pounds. A drain tube was employed and the abdomen closed with silkworm gut.

She left the Hospital well on January 6, 1893. Right here is an example to show the effect of pressure on the abdominal brain by large tumors. I have noted that pressure of tumors disturbs rhythm of viscera. This lady had distressing attacks of a kind of asthma. The rhythm of the lungs was disturbed. She had hypertrophy of the heart, due to reflex action transmitted to it by way of the splanchnics from the abdominal brain to the cervical sympathetic ganglia, where the irritation was reorganized and sent to the heart on account of the pressure of the tumor on the abdominal brain causing the heart to move irregularly and rapidly. The result was overfeeding and consequent hypertrophy. Besides disturbance in the heart, this woman had constipation and indigestion due to pressure of the tumor on the abdominal brain. She had gas in the bowels. The reason of this was that irritation of the abdominal brain was emitted over the gastric plexus to the stomach, the superior mesenteric plexus to the small intestine and the inferior mesenteric plexus to the large bowel.

This irritation induced: 1, excessive secretion; 2, deficient secretion; 3, disproportionate secretion of digestive juices—result indigestion and constipation. She had gas in the bowels from fermentation. She had liver disease and was pigmented on the skin because the rhythm and secretion of the liver was disturbed. The hepatic plexus carried the irritation from the compressed abdominal brain to the liver and induced excessive, deficient or disproportionate secretion. The spleen also was disturbed in its rhythm and suffered from pigmentation. Thus through reflex action on the sympathetic nerve due to pressure of the abdominal brain, the patient suffered in every viscus. Since removal of the tumor, so far as I could find, all these "reflexes" have disappeared. In her requested annual letter to me she reports herself well and happy.

Case 19.—Miss H., sent to me by Drs. R. Zeit and Nyson from Medford, Wis. Age 15. Puberty had begun but was very irregular. She had a tumor in the middle line of abdomen and the cervix was elongated. Assisted by Drs. White and Shibley I operated at the Woman's Hospital. The tumor proved to be a very rare specimen of the ovary, the size of an apple holding locks of hair. It also had an ovarian follicle containing about a pint of clear fluid. Besides these, a large solid mass about the size of a child's head was found at the end of the ovary. This solid mass was considered to be sarcoma. Hence a dermoid, an ovarian cyst and a sarcoma were all found in the ovary of a girl of fifteen. The other ovary was somewhat enlarged and distinctly cystic so it was removed. She made a very easy recovery.

Case 20.—Mrs. G., age 48, sent me by Drs. Washburn and Jackson of Indiana. She was enormously distended in the abdomen. I operated with the kind assistance of Dr. Franklin H. Martin and Drs. Shibley and White. It proved to be a very severe operation. We removed a sixty pound ovarian tumor, part solid and part fluid. Drainage was employed and she did well until twenty-four hours after, when the pulse rose steadily higher with a viscous spring to it. The temperature went stealthily and steadily up. Her mind, from an active practical character, became slowly but perceptibly less alert to the world. She grew slowly more stupid and died fifty-three hours after the operation from, probably, acute sepsis. This was the only death in the series of thirty-two cases from the operation and they presented very severe pathology.

Case 21.—Age 56, single. This lady had a laparotomy performed on her about a year previous, for what I could not learn. The abdominal wound did not heal and I suspected malignant disease. She was narcotized and the wound thoroughly curetted. The wound led to the bottom of Douglas' sac. No ligation was found. The two following months clearly showed it to be a malignant growth in the abdominal wound subsequent to laparotomy. It was considered to be cancer. As the growth increased it obstructed the bowels. Dr. Joseph B. Bacon and myself performed lumbar colotomy on her from which she recovered. She died subsequently from the malignant affection. It is very rare to see malignancy spring up in an abdominal wound following laparotomy.

Case 22.—Mrs. R., age 39. Puberty at 11 years. Menstruation regular. She was never pregnant. She had myoma of the fundus of the uterus and bled profusely for some three years and has lost great quantities of blood for the past eight months. She was almost bloodless on entrance to the Woman's Hospital. Her tumor was a solid mass which entirely filled the whole pelvis up to its brim. I operated, assisted by Drs. Shibley and White. The mass was so dense and extensive that it was considered unwise to attempt to remove the uterus, but I carefully dug through the mass and put three ligatures around each tube, occluding the ovarian artery, and the ligature would render the tubes functionless. In November, 1892, this operation was performed. It was the first in which I ligated the ovarian artery and the uterine as it courses along the side of the uterus. Drainage was employed. She recovered. Ten months afterward she visited my office and the uterus had shrunk to less than one-third its original size; nearly every trace of exudate was gone. She menstruated or lost blood a few times. She calls herself well and strong.

Case 23.—Mrs. V., sent to me by Dr. Mary Jackson of Hammond, Ind. Age 33; seven children. She was taken suddenly ill six weeks before entering Hospital. She grew steadily worse. The abdomen enlarged. Drs. White and Shibley assisted me to operate. The pelvis was found filled with a tumor which was composed of concentric layers of blood. It appeared to come from the right Fallopian tube, as a distinct ragged aperture was found in the walls of that tube. The tumor and appendages were removed. Drainage was employed. She recovered and left the Hospital.

This was considered to be a case of ectopic pregnancy from a careful examination of the specimen. The gestation was in the right tube which showed the point of rupture. No fetus could be found, but the state of the tube indicated such.

Case 24.—Mrs. A., age 33, sent to me by Dr. Eilertson of Chicago. Ill two years; had three children, ages 13, 11 and 7 years. Has noticed enlargement for two years. One year ago the swelling suddenly subsided and then gradually increased for a year. Dr. Eilertson assisted me to operate six months ago. The tumor proved to be an ovarian cyst. The other ovary was also as large as a hen's egg. It was removed. The sudden decrease of the tumor was made plain on its removal. It had on its wall an old scar about the size of a silver dollar. This cicatrix represented the point of rupture one year before. She recovered and left the Hospital well.

Case 25.—Age 28. Ill for about one year with pelvic trouble; very ill for five months. The operation was done at Charity Hospital by Dr. Geer and myself. It proved to be a case of very severe pyosalpinx. The adhesions were extensive and dense. The enucleation demanded the tearing up of vast areas of old and recent pelvic adhesions. The bowel was wounded several times, but not sufficient to tear through the mucous membrane. Thorough irrigation and drainage were employed and the abdomen closed with silkworm gut. She did well until about the eleventh day, when the temperature began to rise and for five days it wavered; on the sixteenth day jumped up to 104. Dr. Geer and I then agreed to re-open the abdomen. She was anesthetized and the finger followed the place where the drain tube had been. As the finger entered the wound about three inches, just below the pelvic brim, some two ounces of yellow pus rolled out. The wound was irrigated, drained and the woman made an excellent recovery. She has now, seven months after the operation, a small fistula in the abdominal wall, but she is ruddy and gaining flesh and is well. In this case a re-opening of the abdomen absolutely saved the patient's life.

The following seven cases of laparotomy were performed by Dr. Lucy Waite at the Charity Hospital in my service. I assisted her in each case so that a synopsis of them will be included in this series:

Case 26.—Removal of the appendages for double pyosalpinx and hematoma of left ovary resulting from gonorrhea. Patient was 25 years of age and gave a history of gonorrhea for three years past and a produced abortion. She was almost totally incapacitated for labor. Both tubes and

ovaries were bound down in massive exudates from which the Doctor literally dug them out. Every element in the tube and ovary was diseased; perisalpinx, *musculature* and endosalpinx all had widespread pathologic conditions. Considerable pus was found in the pelvis. The abdominal cavity was thoroughly irrigated and the wound closed with silkworm gut. Drainage was used. Recovery was good. Eight months after the operation she is nursing and is practically well. The reasons which justified and demanded laparotomy in this case were exactly what Dr. Waite and myself had repeatedly observed during our four months' treatment of the patient viz: periodic exacerbations of pelvic peritonitis, pain, gonorrhea, pelvic exudates, rise of temperature, constant suffering and incapacity for labor and the downward course of the patient.

Case 27.—Removal of the tubes and ovaries for a general myoma of the uterus. The patient had had a tumor the size of a cocoanut for three years with severe hemorrhage for one year. She had three children. She recovered from the operation and has had one hemorrhage since, so far as reported, in six months.

Ten months after the operation I saw her. She appears perfectly well, and says she is now healthy and hemorrhage has almost entirely stopped. Dr. Waite ligated the upper end of the uterine artery, which accounts for the almost complete arrest of bleeding.

Case 28.—Laparotomy for chronic salpingitis and ovaritis. Age 36. She was ill seven years and a neurotic wreck. The operation proved difficult, as the old organized exudates were very dense. She made a good recovery and is now very well seven months after the operation. She has improved in all nervous symptoms.

Case 29.—Removal of the appendages in a girl of 20 for hystero-epileptic convulsions of six years duration. She recovered without an untoward event. Six months after the operation the guardian of the girl writes to Dr. Waite the following: "Your patient is doing nicely and we believe she will come out all right." It seems to me that the word, epilepsy, should be excluded from this disease, as it is a reflex menstrual disturbance and is not true epilepsy. True epilepsy does not recover from removing ovaries or testicles. It is true that this girl was a total wreck, that she could not even care for herself and that an extra attendant was required for at least a week every month to supervise her during dozens of convulsions at each period. She is recovering from a *neurosis* but not epilepsy.

Case 30.—Removal of the appendages for double pyosalpinx and abscess of uterine wall, following five weeks after delivery.

The pelvic organs were imbedded in a mass of exudates and the abscess contained about a tablespoonful of yellow pus. The peritoneum was well irrigated; the mouth of the abscess was clamped to the abdominal wound for thirty-six hours. Drainage was employed and the patient made a good recovery. Five months after the operation she is well.

Case 31.—Age 52; one child 10 years old. Ill since last child was born. Laparotomy showed the uterus and appendages consolidated into a mass. Dr. Waite separated these old dense adhesions with much difficulty. The proof of the age of the adhesions was profuse hemorrhage from newly formed blood vessels. She recovered well, and left the Hospital improved in every respect. A significant fact is that her extreme neurosis almost magically disappeared.

Case 32.—Age 22. Ill two years with pelvic trouble. She was a miserable neurotic, incapacitated for labor. She had severe attacks of pelvic peritonitis. The menstruation was becoming more and more severe with increasing pain. She reports a sudden flow of pus through the vagina besides leucorrhea. The diagnosis was gonorrheal salpingitis with pyosalpinx. Dr. Waite enucleated and tied off both the appendages which were in severe pathologic conditions. Abdomen irrigated, drained and closed with silkworm gut sutures. The patient recovered well, and left the Hospital a different looking woman.

The foregoing thirty-two cases of laparotomy were performed just as they came in order. No selection was made, no picking of cases was done. The one case of death was from acute sepsis (due to what cause I know not) in a woman with a sixty pound ovarian tumor. At present (ten months after the above operations), I know of two abdominal fistulæ existing. So far as I know all other fistulæ have closed. One patient died six months after the operation from acute rheumatism; one died a year after the operation from pulmonary tuberculosis.

COCILLANA—THE BARK OF AN UNDETERMINED SPECIES OF GUAREA.

NATURAL ORDER—MELIACEÆ; HABITAT, BOLIVIA.

Read in the Section on Materia Medica and Pharmacy, at the Forty-fourth Annual Meeting of the American Medical Association.

BY F. G. RYAN, M.D.

PROFESSOR OF THE PHILADELPHIA COLLEGE OF PHARMACY.

This remedy, which was first brought to the attention of the medical profession by Dr. H. H. Rusby of the New York College of Pharmacy, seems to be gaining much favor. The results of many clinical investigations indicate that this drug is destined to become one of great usefulness in the treatment of diseases of the respiratory organs.

The following botanical description is taken from the "Pharmacology of Newer Materia Medica:"

"This species was first described by Dr. N. L. Britton of Columbia College, under the name of *Sycocarpus Rusbyi*, on the supposition that it was a new genus belonging to the natural order *Anacardiaceæ*. On the subsequent acquisition of complete specimens, Dr. Britton at once recognized the true affinities of the plant as being with the genus *Guarea*, natural order *Meliaceæ*, and referred it with some doubt to the species *Guarea trichlioides*. (Linn.) While it is certainly a *Guarea*, there is much difference of opinion as to the species. Dr. Rusby is quite positive that its characters render it distinct from all known species of that genus, in which, I may remark, nearly all the species are separated by very minute differences of structure. The tree is described as reaching an extreme height of some thirty or forty feet, and a trunk diameter of nearly three feet. It is low, and broadly spreading in habit, reminding one considerably of a large apple tree. The bark is thick and ash-colored, becoming rough only with considerable age. The larger branches are horizontal, the ultimate ones somewhat erect and bearing the leaves erect, clustered at their ends. The leaves are pinnate, bearing some resemblance to those of the common sumach, but much larger, being a foot and a half or more in length by two-thirds of a foot broad, and bearing from five to ten pairs of oblong obtuse leaflets, the larger of which are six or eight inches in length. In the axils of these leaves appear the loose racemes of flowers, some eight or ten inches in length. The flowers are small, scarcely larger than the head of a small carpet tack, with the parts in fours, of a dull greenish color, very inconspicuous, and are succeeded by a somewhat woody fig-shaped fruit, as large as a walnut. It contains four cells, one or more of which are commonly obliterated as it matures, and one or two erect seeds."

Joseph Schrenk in the *Druggists' Bulletin*, August, 1888, gave the following description of the appearance and structure of the bark:

"The samples of this bark which I had occasion to examine, were evidently taken from an old tree. They were curved pieces, about fifteen mm. thick; large white patches, caused by the growth of a fungus, are seen on the tawny-yellow outer surface, which is very rough and uneven, with deep longitudinal furrows and crevices, and occasional horizontal fissures. The inner surface is grayish yellow, coarsely striate, and often roughly fibrous, with numerous detached broad bands of bast-bundles.

"The fracture, which is coarsely granular in the outer and splintered in the inner bark, shows that the 'cork' is very strongly developed, for in many places the periderm occupies about two-thirds of the entire thickness of the bark; it is of a light reddish-brown color, with numerous yellowish-white, scattered dots plainly visible to the naked eye. The inner portion of the bark is of a firmer texture and tangentially finely striate. The odor is slight, but peculiar, and the taste unpleasant (not bitter); slightly nauseous.

"On cross and longitudinal sections the periderm is found to consist of one or several layers of primary, and frequently even of secondary bark separated from the deeper living tissues by broad bands of cork. Large groups of sclerenchyma cells with very much thickened porous walls are seen in the periderm and the other parts; their number diminishes toward the interior, and in the inner half of the bast portion they are met with only very sparingly.

"The bast cells are arranged in strictly tangentially elongated groups (as seen on the cross section), but there are no radial rows, therefore the medullary rays are not so readily distinguished with the unaided eye as in some other barks. They invariably make considerable curves where they enter the zones of cribrose and parenchyma tissue, which alternate with those of the bast-fibers; and as they contain a red colored substance they can easily be traced under a low power as undulating red lines. On tangential sections they appear very distinctly as narrow eclipses made up from one to three horizontal, and up to twenty vertical rows of cells. Where these rays pass through parenchyma tissue they are frequently bounded by vertically elongated, rather wide cells, distinguished by the fibrous thickening of their cellulose walls. They form a prosenchyma-like tissue, or in each vertical row of (from five to ten) cells the two terminal ones are pointed.

"The bast-cells are slender and straight, at an average of seventy-five hundredths mm. in length. Each fiber bundle is accompanied by rows of cells with very much thickened lignified walls, each containing a large calcium oxalate crystal (of the monoclinic system) entirely filling the interior of the cell, so that when the crystal is removed by the application of hydrochloric acid, an exact mold of it is left. So closely are these rows of 'crystal sacs' applied to the bast-fibers, that the latter can be brought to view on longitudinal sections only with difficulty. Calcium oxalate crystals of the same form are also seen in other cells, especially in the proximity of the stone cells. Small, rounded, simple starch grains are rather abundant in the parenchyma, and in the cells of the medullary rays can be noticed the red colored masses mentioned above, which are insoluble in alcohol."

Clinical examination of the therapeutic properties of cocillana has engaged the attention of a number of prominent physicians, complete reports of which will be found in various journals.[1] The latest of these by Dr. John V. Shoemaker,[2] speaks of his results as follows:

"In small doses, it has a good influence upon the appetite and digestion. In larger quantities, it produces an emetic and cathartic effect. The alvine discharges, under its use contain mucus and bile. It stimulates the sudoriparous glands and, when given in considerable quantities, causes copious perspiration, accompanied by prostration of muscular strength. Excessive amounts also give rise to giddiness. It is eliminated principally by the broncho-pulmonary mucous membrane, upon which it exerts a stimulant and alterative effect.

"Cocillana may be administered in the form of a tincture or fluid extract. The dose of the tincture is from 30 minims to 2 fluidrachms; that of the fluid extract from 10 to 20 minims. In my clinical experiments I have made use of the fluid extract, which resembles sherry wine in color, has an aromatic odor, and a bitter taste. It is, however, not unpalatable when mixed with syrup.

"The chief therapeutic value of cocillana is in the treatment of the diseases of the respiratory tract. In epitomizing my experience with this drug, I deem that I can not do better than to relate briefly the histories of a few cases in which it was employed with notable advantage. Bronchitis is the malady to which it is the most applicable, and it is particularly beneficial in the subacute or chronic stage. Cocillana stimulates the capillary circulation of the bronchial mucous membrane, and thus relieves inflammatory congestion. The secretions of the respiratory tract become more notable in character; thick and tenacious sputum is liquified, excessive expectoration is restrained, and cough is allayed.

"The amelioration of the cough allows the sufferer to obtain more sleep. The stomach likewise gains in tone under the use of medicinal doses of this drug. I have employed it in the bronchitis of children as well as of adults. I have, in some cases of chronic bronchitis, found it fully as efficacious as iodid of potassium, and it is usually better borne, and can be used for a longer period continuously than the iodid. Cocillana should, therefore, be esteemed a very welcome addition to our therapeutic resources. In the doses which I have named, it is totally free from nauseating or depressing effect. In beginning my clinical experiments, I gave the drug alone. When I became acquainted with its properties, I combined it with some syrup for the purpose of increasing its palatability, assisting its action, or fulfilling other indications of the case."

[1] H. H. Rusby, M.D., in the Therapeutic Gazette, August, 1888. David D. Stewart M.D., in the Medical News, of August 24, 1889. Reynold W. Wilcox, M.A., M.D., in the New York Medical Journal, Dec. 28, 1889.

[2] John V. Shoemaker, A.M., M.D., in the Medical Bulletin, February, 1893.

THE SINGLE HYPOPHOSPHITES IN DEFECTIVE NUTRITION OF BONE AND NERVE TISSUES.

BY LEWIS G. PEDIGO, A.M., M.D.
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Of all the varied uses of the hypophosphites, none are more interesting to me than their employment to meet certain faults of nutrition in the osseous and nervous systems. I group these two departments of the human organism roughly together here, because my attention was directed to them in this connection, by certain rational considerations. In the chemic constitution, the growth and the maintenance of both, phosphorus plays a very important part. So it was inferred, that in certain pathologic conditions of either, especially when characterized by defective nutrition, the use of phosphorus in some convenient and easily assimilable form, is the primary and essential indication of treatment. The various clinical trials of this opinion in practice for several years, have amply justified and sustained the inference. My readers are probably familiar with the use of these remedies in cases of delayed teething in children. Aside from this familiar use, my cases have embraced instances of defective bone development in children, and a certain low type of sub-acute and chronic inflammation, occurring in the bony and periosteal tissues of scrofulous or badly nourished patients, as the result of a blow or injury. It must be borne in mind, in these cases, that the predisposing cause is the state of defective or perverted nutrition. The same traumatism which in such a constitution would cause a troublesome, tedious and prolonged inflammation, would produce very slight local effect in a vigorous healthy subject The course of such a case under the usual treatment is very unsatisfactory. The periostitis shows little tendency to recover, and the bony tissues, so dependent on the healthy action of the periosteum, manifest a tendency to disintegrate. As a result we have a case of hip-joint disease, or Pott's disease, or some other orthopedic affection, with the prospect of a *long special* treatment, and an endless array of plaster jackets, splints, etc. Recognizing and appreciating all the good to humanity and to science that has been accomplished by the modern orthopedic surgeon, (and it is much), it is plainly the duty and province of the general practitioner, to arrest the progress of these cases in the earlier stage if possible. In my own experience, the hypophosphites offer the best means of relief in this incipient period and, in some cases, almost the only hope of resolution of the inflammatory process. If I might be pardoned the presumption of making a suggestion to a specialist in his own field, I would say to the orthopedic surgeon, that he could not do a better thing, even after this ugly inflammation has reached that stage in which

the tissues break down and deformity results, than put his patient on hypophosphite of lime, as adjuvant to his special surgical measures. Judging by its effects in other fields, and in the first stages of the class of cases under consideration, it would impart more vitality to a failing system, furnish some much needed elements to the organism, and promote healthier action and a *tendency to repair* in the affected tissues. For obvious reasons, the hypophosphite of *lime* is the particular salt to be used in all injuries and inflammations of bone and periosteum. With no intention of entering into elaborate review, I recall one case sufficiently typical to exemplify my meaning. A girl 13 years of age was thrown from a horse, falling on the side, so that the left thigh struck the apex of an angular rock. Some lameness resulted —obviously associated with an injury to the femur, near the great trochanter. A slight depression in the bone could be felt at this point. Inflammation, swelling, redness followed, with considerable deep-seated tenderness and pain on walking. This condition was temporarily improved by counter-irritation—use of iodids, and various other measures. But there was a constant tendency to relapse, especially in damp depressing weather, with east winds.

The case was becoming chronic, the general health failing, the affected parts threatening a chronic abscess, with more or less disastrous effects upon the integrity of the bone and the future usefulness of the limb. The parents were justly and reasonably alarmed, because one bad case of hip-joint disease had occurred in the family as a result of a similar injury. A scrofulous taint was suspected.

The patient was directed to take a teaspoonful of Gardner's syrup of hypophosphite of lime, three times a day, with no other treatment except rest, suitable diet and hygienic precautions. Improvement began with surprising promptness, considering the peculiar nature of the tissues affected and the usually slow processes which characterize them. The most striking feature was the *control of the pain* which the remedy seemed to exercise. Of course this was not a *direct* anodyne influence, but was effected through a modification of the inflammatory processes. The case went on pretty steadily to a good recovery. It is significant that the patient observed the pronounced change in the case as coincident with the change of treatment, and expressed herself as feeling safe so long as she was taking this remedy.

As to the other class of cases alluded to above, I shall present the essential history of only one, which is sufficiently typical of a large number, to answer the purpose of illustration:

A child, male, age 6 months, was suffering with diarrhea and indigestion, associated with difficult and delayed dentition. The gums were red and swollen; teeth were developing slowly which should have appeared about the seventh month. The anterior fontanelle was very large, relatively larger even than it should have been at birth, showing retarded and defective development of the parietal and frontal bones, and indicating a general faulty nutrition, especially of osseous tissue, both in fetal and infantile periods of life. The general appearance of the child was extremely bad. It was ill-nourished, emaciated, pale, feeble and irritable, with loose, easily wrinkled skin, and a bad complexion. A treatment was adopted for the temporary relief of the dental irritation and diarrhea, and a prolonged course of syrup of hypophosphite of lime was directed, with no other medicinal treatment. I did not see the patient again for six months; (the family lived some distance away). At the end of that time, the mother brought the child to me, not for any professional service (which was obviously not needed) but for *exhibition*. The improvement was beyond all anticipation. The fontanelle was almost entirely closed; the teething process had gone on without irritation of any consequence and had progressed much more rapidly, and the general condition was so much better, that no one could have identified the child. It was plump, well nourished, of good, clear, rosy complexion, and evidently felt comfortable and in a good humor with the world—a symptom of great significance in these cases.

I have spoken of this case as a *typical* one—meaning that it represents a *class* of cases which in my experience have been conspicuously benefited by the use of the hypophosphite of lime. I must say, however, that the *brilliant results* of treatment in this instance, must not be expected in every case. It is *somewhat* above the average in this respect, and therefore not strictly typical in this sense. But its history exemplifies and illustrates principles of treatment that will hold good in all of the class of cases to which it belongs.

Under the second division of my subject, viz: the use of the hypophosphites as nerve nutrients, it is my purpose to confine myself to one case, a specific gummatous tumor of the brain:

The patient a bright mulatto, age 26, stout and generally healthy in appearance, gave a distinct history of syphilis. At the time he came under my observation he was troubled with aphasia, with partial paralysis on the right side, walked imperfectly, scraping the floor lightly with the sole of the right shoe. He could be sent to take a note (not a verbal message), could go to any portion of the town, and find his way without difficulty, but could not remember the names of the streets. He was sent after the cows on the commons, and would get the right ones, but could not tell their names, and if he attempted to throw a stone at one of them, it dropped within two or three paces of his feet. The left hand and arm were much stronger than the right; he was obstinately constipated.

The case was vigorously treated with large doses of iodid of potassium, and small doses of mercury biniodid, with some attention to the digestion and state of the bowels. The iodid was given in increasing quantities until a dose of 60 grains three times a day was reached. This was continued for periods of about a week or ten days, alternating with short periods of suspension of the remedy. The effect was good and improvement began and continued for months. The paresis was better, the mind was clearer and more vigorous, the strength and power of endurance increased and the aphasic symptoms yielded perceptibly. After some months of this treatment, the case seemed to come to a standstill; the improvement reached a limit. Now it was considered safe to begin a *restorative* treatment—on the theory that the iodid had done its work of liquefaction and absorption of the tumor faithfully and well. The patient was placed on a small dose of tincture of nux vomica, (10 drops) thrice daily before meals and the effect carefully watched. It produced some irritation of the brain—cerebral hyperemia and evident aggravation of all the symptoms. It was withdrawn promptly and the former treatment resumed for another month, with a few doses of bromid of sodium at first, to control the untoward effect of the nux vomica. After a month the nux vomica was again cautiously tried, and this time with good effect. The symptoms—mental and physical—all improved somewhat, and no irritation supervened. After a few days another measure was added to the treatment, viz: the use of a teaspoonful of syrup of hypophosphite of lime, thrice daily, *after* eating. The effect of this step was perceptible in the decided improvement of all the symptoms. I continued the use of the hypophosphites in this case for several months, watched the effects carefully and with intense interest. I had dispensed from my office only two ounces of the syrup of the lime salt in the first place, so it was soon exhausted. When the patient returned I found I had no more of that preparation, but had a remnant of syrup of hypophosphite of manganese. I substituted this and found, to my surprise, that it seemed to act much more favorably than even the hypophosphite of lime. When this remnant was exhausted, I returned to the use of the lime, however, and the patient *noticed the difference* in his condition. He insisted that I give him the "same medicine he got the other time," which I did, and with the same result. His neighbors and friends remarked upon the mental improvement. The family reported that he could begin

to work better, remember messages more accurately, and the patient said he could "learn and recite his Sunday-school lesson better." I had ample opportunity to watch this case closely, and to differentiate the effects of the various remedies used at different times, and my conclusion is that the single hypophosphites were decidedly efficacious in the latter stages of this case.

The theory which led me to their use may be stated as follows:

In cases of gummata of long standing, the contiguous parts of the brain are subjected to constant pressure, interfering seriously, not only with their functional activity, but with the nutrition of the cells and fibers which enter into their structure. After the gummata have been partially or fully absorbed under the influence of the heroic doses of iodid of potassium—so that the brain tissue has the opportunity to expand again to something like its normal size and shape — these compressed, starved and dwarfed fibers and cells need some restorative remedy, some special nerve *nutrient*, to assist in this development. Nothing so naturally suggests itself to the medical mind for this purpose, as phosphorus in some available form.

As the single hypophosphites are my favorite preparation of phosphorus for almost all its uses, I prescribed them in this case, with the results recorded above. I have reason to believe the effects can be duplicated in other similiar cases. In an old case, as this was, even when it first came to me, the physician must not expect too much of any remedy. Parts of the brain structure have been absorbed under the long-continued pressure. Other parts, even though remaining, have been so damaged, that their integrity can not, probably, be fully restored, or their functions rendered strictly normal.

In conclusion, let me warn my reader who feels sufficient interest to test the matter, not to begin the restorative treatment too early in the development of the case.

THE PHYSICIAN AND THE PHARMACIST.

A Volunteer Paper read in the Section on Materia Medica and Pharmacy at the Forty-fourth Annual Meeting of the American Medical Association.

BY L. CH. BOISLINIERE, M.D.

ST. LOUIS, MO.

A few words of protest and advice are herein offered from an old practitioner. I believe in the profession of pharmacy and I highly respect the pharmacists. They are the hand-maids of the physicians and our best friends, often our useful advisers. The two professions should work in harmony, one not encroaching upon the specialty of the other. Therefore the pharmacist should not tolerate any counter-prescribing, and the physician should not dispense his own medicines. I therefore most strongly protest against the custom, lately too frequently resorted to by physicians, of distributing among their patients any of the potent triturates, or dosimetric granules, so elegantly put upon the market by otherwise reliable wholesale dealers. This practice is enticing, but it is often dangerous.

This protest applies chiefly to the city physicians; an exception should be made in favor of the country practitioners. For them it may be sometimes absolutely necessary and is often very convenient; they are so placed that they can not do otherwise; but it is a practice fraught with danger.

This practice, in cities especially, may be followed by suits for malpractice in case of any accident. The prescriptions on file with the pharmacist are a strong protection to the physician, as they can be referred to, and, if necessary, brought into court in case of a suit for damages. While serving as Coroner of St. Louis County, several cases of this kind came under my official notice for investigation. One was the case of a woman, for whom a most reputable physician had prescribed a mild cough mixture. The husband, at the inquest, stated that his wife walked in the garden, after taking a teaspoonful of the medicine, and dropped dead, as if shot. Happily, the bottle of medicine was in the house, properly numbered, and came from a very good pharmacist. The prescription from the file was brought to the house of the deceased and shown to the jury to be a harmless mixture. This, however, did not entirely satisfy the husband. In order to convince him, I opened the deceased's chest and showed him the heart; the pericardium was enormously distended; puncturing it, I received in a cup nearly a pint of serum. The woman had died of acute pericarditis. This amount of serum, pressing on the heart, had caused its sudden stoppage and the patient's death. The husband was satisfied and the physician discharged.

Upon another occasion, an old man had had a weak solution of morphia prescribed for nervousness. The next day I called at the house and found the front parlor full of people and crape at the door. On my inquiring about the patient his sister rushed in, in a fury, and exclaimed to me: "You dare inquire about my brother! You killed him! He walked to the mantelpiece, took a teaspoonful of your infernal mixture and dropped dead!" He died of paralysis of the heart, as was afterwards ascertained. The pharmacist, an excellent one, was requested to come immediately with the prescription, which he had on file, and which called for one grain of sulphate of morphia, of which the patient had taken one teaspoonful, equivalent to one-eighth of a grain, which certainly is not a poisonous dose. The family was finally satisfied that the fatal result was not connected with the medicine.

From these cases is seen the great advantage of filing, dating and numbering prescriptions.

In another instance, there was prescribed for a young woman a one-eighth grain dose of morphia; but, through the accidental misplacement of the bottles, she took one teaspoonful of strong sulphuric acid, and would have died had it not been for copious draughts of water, mixed with plaster scraped from the walls of the room. For several months, she could swallow nothing but milk, as she had an extensive inflammatory stricture of the esophagus.

Here the pharmacist was called in to show that the prescribed mixture was a weak solution of morphia and not sulphuric acid, which it was subsequently learned had been left carelessly in the room to acidulate a battery. I could relate more cases, but these are sufficient to illustrate my position, that often the pharmacist is the best protector of the physician.

Another point to be considered is this: Quite a reprehensible custom is that of pharmacists, on demand of patients or their friends, repeating prescriptions without the order of the physician. This is done generally because it would be impolite to refuse; moreover, they have nothing to gain by it. This indefinite refilling of prescriptions should not be

done, because it makes the patient his own prescriber, often to his own detriment, as no two patients or diseases are alike. It is a dangerous practice, and should be abolished by a mutual agreement with the pharmacists. This practice is often resorted to by designing persons for mercenary purposes. I will briefly recite a case to illustrate:

I once prescribed a mild but efficient cough mixture. What was my amazement when I ascertained that the formula had been printed and sold to many acquaintances for twenty-five cents a copy. Let, then, physicians and pharmacists live in perfect harmony, following their useful and noble professions, each respecting and protecting the other.

RETRO-PHARYNGEAL ABSCESS—WITH REPORT OF CASE.

BY REVERE H. HERROLD, M.D.
CHICAGO, ILL.

Miss T; age, 22; native of Sweden; occupation, clerk; left the land of her nativity in August, 1893, in good health as far as can be discovered. August 29 I saw her for the first time, and received a history of previous good health, except that a week before, she was seized with choking and pharyngeal spasms. These symptoms passed away and none appeared again until the day of my visit, when I found the spasms and choking present, with cyanosis, greatly increased during the pharyngeal spasms. Examination of the throat with the finger revealed no pathologic condition, leaving thus a doubt as to what caused the spasms and choking. Anti-spasmodics were administered, which only partially relieved. The patient having stated that no passage from the bowels had occurred for several days, a cathartic was prescribed and the patient left for a time. In less than an hour I was again called, and found that the cathartic, which was a powder, was being expelled from the mouth by what at first appeared to be mucus but later was found to be pus. The attempt to swallow the powder caused the rupture of abscess, which was located very low. The patient became unconscious and remained so to the time of her death. Continuous symptoms were manifest here for about thirty-five hours. The symptoms a week previous were of such short duration that no physician was called.

There is a feature of this case which deserves mentioning. The deceased left her native land to meet and marry her lover. Having no means of her own, the lover paid for her physician and saw that she received a respectable burying.

In making a brief review of this subject it may be said that a retro-pharyngeal abscess is the result of a suppurating cellulitis in the areolar tissue between the pharynx and the vertebræ, and frequently not in the median line. It is primary or secondary according to its previous pathologic state. The cause, if primary, is atmospheric or due to some irritating substance lodged in the pharynx. The secondary form may occur after measles and scarlet fever. The inflammation of the pharynx common in those diseases extends to the subjacent connective tissue and becomes suppurative. Caries of the cervical vertebræ is, however, the most frequent cause of the secondary form. When it originates in this manner it is similar to a lumbar abscess except that its proximity to the air passages renders the symptoms more urgent and dangerous. Erysipelas, syphilis, inflammation of the inferior maxilla, cerebritis and scrofula have been followed by a retro-pharyngeal abscess. Small lymphatic glands which lie in the connective tissue external to the pharynx, are undoubtedly the original seat of suppuration in a majority of cases. Often the abscess may be seen or fluctuation felt by the finger, but when, as in the case reported, the abscess is low, it can not be positively diagnosed. It may be said, however, that when it is due to caries it is preceded by deep-seated pain, greatly increased by movements of the head. The symptoms usually described are those of restlessness, mouth dry and hot, deglutition more or less difficult, the tongue furred. After suppuration there may be alternations of rigors and fever. The tissues chiefly involved are the submucous, and the degree of redness of the mucous surface is less than where the mucous membrane is chiefly involved. Chilliness and convulsions occasionally occur, but embarrassment of respiration is the chief cause of danger, frequently beginning early, and becoming more and more prominent as the abscess increases. Dysphagia is present, and is sometimes so great that solid foods are refused, and drinks taken with difficulty.

The disease may be mistaken for protracted laryngitis owing to the resemblance in the respiratory symptoms; the voice is feeble or indistinct from the pressure of the tumor, and the respiration sometimes whistling and impeded. Dyspnea increases as the abscess enlarges, and imperfect oxygenation of the blood follows unless the abscess is opened or it ruptures spontaneously. Paroxysms of dyspnea may occur so as to threaten suffocation. The pulse is frequent and rapid, the head is thrown back, the tongue protruded, and the patient is forced to remain in a semi-erect posture. The limbs become cool, livid. Finally death results from dyspnea. Even if the abscess rupture, life may not be saved in all cases, as the case herewith submitted illustrates. If the trachea and bronchial tubes are deluged by the purulent discharge, suffocation follows. Another example of this is found in the records of the Bellevue Hospital. In May, 1871, a boy, age two and a half years, having symptoms of an abscess for three months, was brought before the Hospital class. The patient's head was carried sidewise, and rotation of the head caused pain. A laryngeal râle accompanied respiration. In this case the upper part of the tumor could be detected by the finger, but its location was so low that it could not be opened with a bistoury. Dyspnea came on and death being imminent, the class physician, Dr. Swezey, broke the abscess with his finger and pus was ejected, but death occurred almost immediately. Most of the cases reported are of infants and children. The case submitted by me occurred in a lady 22 years old. It can not be precisely ascertained when an abscess begins to form, nor can its duration be foretold. The duration will depend upon the rapidity of growth, and the direction in which it points; a lateral or downward extension not being so immediately dangerous to life as an anterior.

We should not lose sight of the fact that the thickness and the density of the wall of the abscess varies greatly. Thus Dr. W. C. Worthington reported a case in 1842 in the *Provincial Medical and Surgical Journal*, in which the case occurred from exposure to cold. The patient was a child and was treated for croup. It died from suffocation. In this case the anterior wall of the abscess was very thin. On the other hand, Dr. E. O. Hocken relates a case in the same journal and the same year, where the abscess seems to have been present from birth, the infant dying at the age of 9 weeks. It had always thrown back its head as if suffocating when taking the breast

The walls of the abscess were thick, firm, almost cartilaginous.

The treatment of retro-pharyngeal abscess needs no comment. It must be opened early. Where it has ruptured spontaneously speedy recovery has followed by the use of codliver oil and the syrup of the iodid of iron. Spontaneous ruptures, however, do not always mean a speedy recovery.

253 E. Ohio Street.

OBLITERATION OF CONGENITAL PIGMENTATIONS.

Read in the Section on Dermatology and Syphilography at the Forty-fourth Annual Meeting of the American Medical Association.

BY B. MERRILL RICKETTS, PH.B., M.D.
CINCINNATI, OHIO.

Abnormal pigmentations of the human skin have always existed and are always more or less objectionable, especially where they occur upon the exposed parts of the body. I say always objectionable, meaning the congenital ones, and I might say the artificial ones sooner or later are objectionable.

In order that we may be able to more thoroughly understand the character of the various pigmentations, I have made the following classification, which I have found to be very convenient, and which I believe answers ordinary purposes. It is as follows:

1. Elevated pigmented surfaces.
2. Non-elevated pigmented surfaces.
3. Red, elevated or non-elevated, pigmented surfaces.
4. Brown, elevated or non-elevated, pigmented surfaces.

In the elevated pigmentations, I have found obliteration much easier than in any of the other three I have mentioned. Those that are non-elevated and have a brown color, are the hardest to obliterate, and require a greater length of time for treatment, and the results are not so good.

On the other hand, the red ones, elevated or non-elevated, are removed with greater ease, especially if elevated. I believe that this classification answers every purpose in the treatment of congenital pigmentations. As to the acquired ones, I do not care at present to have anything to say. When we consider how little progress has been made in the successful treatment of these lesions, and the great number of persons possessing them together with the demands which association brings, we can not help but look with regret upon the present status of treatment. It is with horror that I look upon these deformities, and with great chagrin that we stand handicapped in giving relief to those who so often approach us with so many regrets. I believe it is the duty of every person to rid himself, so far as possible, of every characteristic that may be objectionable to his associates—warts, moles, cicatrices, tumors of various kinds, superfluous hairs, deformed nails, fingers, ears, lips, eye-lids and nose, are all of equal importance. The dentist prides himself in giving to his patient a set of teeth that is not only useful, but possessed of great beauty; the barber becomes noted in applying his artistic skill to the hair of both the head and face. With all these standing out in bold relief, we must admit our shortcomings. Possibly the remedy lies in the extirpation of these pigmentations, followed by skin-grafting, as suggested by Thiersch. It may be that it is something less severe, but who is to present it? I firmly believe that where the pigmentations are large and can not be excised, and the edges brought together without deformity, that the Thiersch method offers the best results. Surely the grafts, together with the attending cicatrices, would be less objectionable than the discolored or elevated surfaces, and I am thoroughly convinced that I, myself, would resort to them, taking my chances, in preference to carrying one of these birth-marks.

If the lesion is supplied with a great amount of blood, there is but little difficulty in destroying the vessels with electrolysis. This is the treatment which I offer as the best means, so far discovered, in destroying the elevated or non-elevated red pigmentations, also where the elevations are brown, unless it be by the Thiersch method. But, where the surface is brown, so far I have been unable to lessen the deformity to any great degree by electrolysis. Thinking, perhaps, that I might be able to obliterate this discoloration, I selected a few upon myself and various patients for experiment. I decided to use finely powdered feldspar and flint. These are ground for fifty hours and used extensively in the manufacture of fine pottery. I selected needles as fine as could be had, and with great care tattooed several lesions as carefully as I could, some with flint and some with feldspar. The result was an inflammatory process, which destroyed not only the color, but also the epithelium and part of the papillary layers. In each case there was a fine white cicatrix remaining, which was smooth and a little lighter than the surrounding skin. I am not sure that either the feldspar or flint was the least beneficial. I make the statement to show what *could not* be done with them. Where the lesions are small I have had better results with electrolysis and excision than by any other procedure. If excision is to be resorted to, it should be with the greatest care, the sharpest knife, and aseptically. I have not found it necessary to use but the lightest sutures, silk-worm gut being the best; often these are not used unless there is great tension to be overcome, usually having found rubber adhesive straps sufficient to keep the walls of the wound together until primary union could take place.

I have tattooed with all remedies so far suggested, and I am free to confess that not one of them is satisfactory in my hands. Possibly the fault lies within myself, more perhaps in the application than in the prolonged treatment, for I have been faithful in their application.

There is one procedure that I value above all others in cases where any congenital pigmentation, whether elevated or non-elevated, red or brown, involves any great amount of surface. It is in the use of Thiersch's skin grafts. The great trouble is in overcoming the fear of both the operator and the patient that the grafts are not always certain. This is a very great desideratum, but one which must not be overlooked. If the operator is fearless, clean and skilful, there is no reasonable doubt but that the skin will become adherent and that the surface will become smooth and lose the objectionable deformity. Even though the grafts should not become adherent, the resulting cicatrix is far less objectionable than the condition for which the operation was made. My own experience has taught me that these lesions

when found upon the face or hands, can be removed and without any risk, unless it is in taking the anesthetic, especially where chloroform or ether is used. I do not believe that grafting is so successful when done upon surfaces which have been anesthetized by subcutaneous injections of cocain. It seems to me that the capillary supply upon which we must necessarily depend for nourishment to the graft is greatly lessened by the influence of cocain. It lessens the congestions of mucous surfaces, and why not the normal capillary blood supply to the papillæ? I would not, therefore, hesitate to use either chloroform or ether where the lesion is extensive, in preference to the subcutaneous injection of cocain. Then, too, the amount of cocain requisite to produce local anesthesia, would in all probability cause constitutional disturbance of an unpleasant character. I have now used cocain subcutaneously almost one thousand times, and with but two or three exceptions have never had any unpleasant results from it. So that, so far as the use of this remedy is concerned, I, myself, would not hesitate to use it even in the larger lesions. Then, so far as the administration of chloroform and ether are concerned, fortunately it is not necessary to prolong their administration, as the operation requires but a very short time if detail is looked after in the beginning. In removing the objectionable tissue, hemorrhage is sometimes to be encountered, especially in the red ones where there is a great amount of blood supply. This, however, can be overcome with the application of hot water containing chlorid of sodium in the proportion of one-half of 1 per cent. If this should not control the hemorrhage, and if found impossible to apply the grafts with certainty, the surface may be allowed to granulate and grafted upon later on.

The knife to be used should be the sharpest, and the tissue removed with one bold stroke. The skin to be substituted should be from the thigh or arm, which has previously been cleansed and made ready for the operation. The shavings should be as thin as it is possible to make them, there being but little capillary hemorrhage. If the surface is two, three or four inches square, the grafts should be as few in number as it is possible to cut them. If three or more inches square is required, it is best to remove the cuticle from the abdomen where the surface is flat, and the knife allowed to make one broad cut. If it is found necessary to wait several days before applying the graft, the granulated surface may be mowed down with a curette, the hemorrhage checked and the grafts then applied; however, I have made it a rule to apply my grafts at the time of the primary operation, thus giving me two opportunities to secure their growth. Any surface upon which grafts should fail to become attached at the primary operation, can be covered at the second sitting.

So far as the dressings are concerned, they should be simple but firm. I have found nothing better than as fine quality of cheese or tobacco cloth as I could procure, which enables the secretion to become absorbed, leaving the grafts as free as possible from other influences.

So far as the use of these grafts goes, I have nothing in the way of improvement to offer on the Thiersch method. He has described in detail the conditions, operations and care of them, so I feel that it would be useless to speak further upon this, the most ingenious and useful plan of skin grafting.

In conclusion, I will say that I believe this is the only available means we have of obliterating these birth-marks, unless it be electrolysis, on which I do not place so much value.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

SECTION ON ORTHOPEDIC SURGERY.

(*Continued from page 67*).

DR. WHARTON SINKLER read a paper entitled

THE TREATMENT OF SPASMODIC TORTICOLLIS BY CONIUM.

The treatment of spasmodic torticollis is most unsatisfactory. The pathology of the affection is so obscure, that rational treatment is all the more difficult of application. Dana, speaking of wry neck says: "In rare cases is it cured, in many others it can be ameliorated, but it generally reaches a certain stage, and then remains chronic." Drugs of all kinds have been recommended in the treatment of this affection, and splints and mechanical appliances are of no benefit, but usually aggravate the affection. From the fact that frequently the muscles principally involved are the sterno-mastoid and the trapezius, the affection has been supposed to be due to disease of the spinal accessory nerve, and treatment has been directed to this nerve.

Counter irritation, galvanism and actual cautery, applied as near as possible to the origin of the nerve have been used, but with far from satisfactory results. Surgical measures, such as stretching this nerve, and the excision of a large portion of it have been resorted to but in only a small proportion of cases has relief followed the operation. It is, therefore, evident that the disease, except in rare cases, involves the deeper muscles of the neck, as well as the sterno-mastoid and trapezius.

LEZYNSKI recommends the use of belladonna, given in increasing doses almost to the point of toxic influence, and keeps this up for four or five weeks. He has had marked success from this method, and Grey says that since he has followed Lezynski's plan, he has cured eight cases of spasmodic torticollis by the use of belladonna. I have used this remedy myself, but without success. The best results which I have seen from drugs in this disease, have been from the use of conium. This drug was recommended by Harley many years ago in the treatment of spasmodic affections, but it never has been used extensively. G. M. Hammond reports the successful treatment of a case of painless facial spasm by the use of this drug, and Rockwell of New York, recommended it in the treatment of chorea. The text-books, however, do not speak of it favorably. Hare, in his work on "Therapeutics," remarks: "That conium holds an unimportant place in the drug list of to-day." I have found in my own experience, however, that it is decidedly useful in many forms of muscular spasm, when not due to central causes.

From experiment, it has been found that conium causes paralysis of the motor nerves when given in physiologic doses. There are drooping of the eyelids, staggering and inability to walk, showing its influence upon the muscular system. It is, therefore, reasonable to expect that in the treatment of muscular spasms, when peripheral in origin, that the remedy would prove useful.

HARLEY recommended the juice of fresh leaves, but this is difficult to obtain, and the fluid extract is a reliable preparation. The dose in which it is recommended in the text-books is entirely too small to be efficacious. I usually begin with 15 or 20 drops, three times a day, and frequently increase the dose to 60 drops. There are two fluid extracts in

the market: one of the leaves, and the other of the seeds. I usually give the latter. I have seen several cases of spasmodic torticollis which were relieved by this remedy; and two or three cases of painless facial spasm which were distinctly benefited by its use, in one of which the spasm entirely ceased. I will relate two cases to illustrate the successful employment of conium in spasmodic wry neck:

Case 1.—Mary C., age 26, a shirt maker by occupation. Her general health has always been good, and there is no history of special interest in connection with her present trouble.

She applied for treatment at the Infirmary for Nervous Diseases, Dec. 12, 1887. She stated that two weeks previously there began a sense of trembling in the neck, and a heavy feeling in her head. At the same time the head began turning continually to the left side. On examination the head is found to be rotated strongly to the left shoulder. It can be turned to the front but can be held there but a few moments, when it is again rotated to the left. If the head be held by force in a straight position there are felt strong spasmodic contractions of the sterno-mastoid and trapezius muscles. She can not turn her head as far to the right as to the left. There is no pain or tenderness over the vertebræ, soreness in the sterno-mastoid muscle or sensitiveness over the point of emergence of the spinal accessory nerve.

A blister was applied over the point of origin of the spinal accessory nerve, and galvanism was used quite faithfully for four months; codliver oil was administered, and the patient was advised rest. But little change took place during this time, except that there were two brief periods of improvement, once after the treatment had been changed to the iodid of potassium. At this time the sterno-mastoid and trapezius had become more rigid, and the head after being voluntarily rotated to the front would be drawn to the left within a few seconds, by the spasm of the muscles.

The patient was now ordered the fluid extract of conium in ascending doses, beginning with 5 drops, three times a day; and the maximum dose was 20 drops three times a day. This treatment was pursued for twenty days, when the improvement was so great that the head could be held straight for several minutes. The conium was continued until the patient was well, and when seen a few months later, the patient said she was entirely relieved of her trouble. A year later there was a slight return of the spasm for a few days, but this again yielded, in a short time, to conium.

Case 2.—Miss G. M., age 44 years, was admitted to the Infirmary for Nervous Diseases August 28, 1893. Family history unimportant. She has always been well until four years ago. In November, 1888, while at work she became dizzy and fell, remaining unconscious for a few moments. It was found afterwards that her shoulder had been dislocated by the fall. The dislocation was reduced by a physician within a short time, but there was partial loss of sensation in the arm, and this has continued ever since. The head was turned towards the left, immediately after the fall. The left ear almost touched the shoulder, and the head was so much rotated that the chin reached the point of the shoulder. The head remained in this position for two or three days, when it gradually came back to the normal condition. After the first fall she had dizzy attacks every two or three weeks. She did not become unconscious, but for a few moments she could not see and would then fall. The head would assume the position above described after each attack, and would remain turned to the left for a few days, and would then regain the proper position. While the head was drawn to the left shoulder, she could place it in other positions with her hands, but it would immediately return to position of rotation to the left from the spasm of the muscles. After a time the attacks of vertigo became as frequent as two in a week.

In February 1893, she had a severe attack, in which she did not fall, but saved herself by sitting down in a chair. She was not unconscious, and could talk, but became rigid for half an hour. The head was drawn down until it reached the left shoulder. After this attack she was in bed for six weeks, and during this time she states that the whole left side was somewhat contracted. She had had no falling attack since February, 1893. On admission the patient was found to be a well nourished muscular woman; digestion normal; heart and lungs healthy; and the urine free from disease. There is no paralysis of motion, and sensation is normal, except in the right arm and shoulder, where it is delayed and diminished to tactile and thermal sense. The knee jerks are normal on both sides. The elbow jerk is exaggerated on the right side, but normal on the left. When sitting up the head is drawn to the left and rotated so that the chin is turned towards the shoulder. All the muscles which turn the head towards the left seem to be involved, but especially the right sterno-mastoid and left trapezius. She can turn her head to a normal position, but can not hold it there for more than a few seconds, when it is again rotated violently to the left. When she is lying down, the head becomes almost straight, and the spasm of the muscles does not occur. There has been, at times, a sharp pain in the left side of the neck in the trapezius muscle, but it is now a dull and dragging sensation. The facial muscles have never been affected. If the patient places her right hand on the side of her head, so as to rest the head upon it, the head will turn to an erect position. The patient was ordered rest in bed, with general massage, faradism to the neck muscles, and the fluid extract of conium, 20 drops, three times a day to be increased. On September 7, that is nine days after the patient had begun, she was taking 30 drops of the fluid extract of conium, three times a day and it was noted that the head was decidedly better, that she could hold it straighter, and that when sitting up it did not so frequently rotate to the left. On September 14, the patient was still improving. She could hold her head perfectly straight, without support, for a few minutes. She has less of the dull feeling and dragging sensation in the left side of the neck. The improvement continued, and on October 5 the patient was able to hold her head absolutely straight, without any pain whatever. She was discharged from the Hospital, October 16, entirely relieved of the spasm of the neck muscles, and seemed to be in perfect health otherwise.

Some of the attacks from which this patient suffered were undoubtedly hysterical, and it is probable that the spasm of the neck muscles was also of hysterical origin. The trouble had lasted for over four years, and was not relieved until she was placed under treatment by the use of conium.

Dr. H. Augustus Wilson exhibited a patient, age 5 years. Two years and four months ago, patient is said to have had quinsy. Mother says the child suffered continuously for four months, which appears to cast a doubt upon the correctness of the above diagnosis.

The following history was obtained from the mother: At the very beginning of her complaining of sore throat, her neck was stiff so that she could not move it in any direction. There was decided pain throughout the chest and arms. Her sleep was disturbed. Upon rising in the morning it was necessary for the patient to support both sides of head with her hands on account of severe pain. This condition lasted for four months. Four months after she first noticed the crooked head the patient came under observation at the Jefferson Hospital.

The diagnosis of caries of upper cervical vertebræ was arrived at four months after the first appearance of wry neck, by the pressure of most marked muscular rigidity around the neck. The muscles in the upright position were tense, and yielded only upon the patient being placed in a recumbent position or when the head was well supported by the surgeon. The sterno-cleido muscles were in a state of relaxation when the patient was recumbent.

A brace was applied which not only supported the head, but maintained immobility and afforded protection, which she wore continuously until one month ago, when it was removed. During the last two months of the use of the brace, it was modified so as to permit beginning motion of the head, but restrained the tendency of the head to turn to right side.

At this time the following observations were made: Head turned to right side one and one-half inches from symphysis of lower jaw to line of mid-sternum. Flexion and extension now easily performed, rotation of head easily to the right side, but motion to left impaired by right sterno-cleido-mastoid. When the head was so turned without effort on the patient's part, there was but slight over-action of right sterno-cleido-mastoid. When the head is thrown backward both sterno-cleido-mastoids appear alike, and the same obtains when the head is bent forward on to chest. Left shoulder carried a little higher than right. There is a slight lateral curvature, principally noticeable in dorsal region.

No movements are apparent in second, third, fourth and fifth cervical vertebræ, which are less prominent than normal, while the sixth, seventh, and dorsal vertebræ move freely. The brace was adjusted towards the last so as to allow a little freedom of movement before it was taken off —about three months' time was permitted from the time it was rigid to its removal.

Since the discontinuance of the brace, light gymnastic movements have been permitted in order to develop the muscles that had become atrophied from disuse while the brace was rigidly applied. Since the head apparatus was made movable, the patient has noticed a crepitus which was only of periodical occurrence and is now very much less marked than formerly, and appeared to be of the nature of fibrous adhesions.

DISCUSSION.

DR. J. K. MITCHELL—I have very little to say this evening, but should like to report two cases of spasmodic torticollis which present features somewhat different in character from the condition as it usually appears in children, although they were both in young people. My experience has been that this condition is more common in adults, and in them it is exceedingly obstinate to treatment. In children the fixed form is more common, and either form is much more amenable to all remedies. Operation is more likely to be effectual in children than in grown persons, and this is true likewise as to treatment by mechanical measures. Apparatus alone will sometimes effect a cure, as is well illustrated by the interesting case just shown by Dr. Wilson.

My two cases were both in young people; one a man, about 20, whom I saw in St. Mary's Hospital. He had refused operation and come into the medical ward for treatment. He had been handled in all sorts of ways, with drugs and various mechanical measures, without much benefit; nor at first, can I say that he improved at all, notwithstanding everything that we could do for him, until finally I gave very large doses of gelsemium, with decided improvement —which, however, was not permanent until ice was applied. I did not try conium, which Dr. Sinkler found so effectual in some of these cases; but an ice-bag was kept upon the neck day and night, extending from the anterior border of the sterno-cleido-mastoid muscle back to the cervical spine, as low down as the origin of the nerve supplying the affected muscles. This was constantly worn, as I say, and by it the man was much relieved, the pain and spasm both diminishing very much.

The second case was in a young girl and was undoubtedly of an hysterical character, a number of symptoms pointing, as you will presently see, in that direction. She came of a nervous family, and had persistently overstudied at school, which she was obliged to leave on account of the occurrence of a violent headache and a general run-down condition, with the exhibition of uncontrollable fits of temper. Her first complaint was of pain on the right side of the nose, which extended into the eye, and for some time at first was limited to this area. It came on in paroxysms, with some twitching of the muscles of the face and, after it had lasted a few weeks, extended through the side of the face and neck as far back as the spine. It presently began to be accompanied by spasmodic movements of the sterno-cleido-mastoid and trapezius muscles, with great pain in both face and neck. These spasms occurred ten or twelve times a day, and every treatment entirely failed to relieve her. Massage, electricity, drugs—nothing had any effect. I put her to bed, and on a milk diet, and for the first two or three weeks she grew better. Then the spasmodic movements began again, and during the succeeding months increased in their extent so that she had many times a day general convulsions, usually opisthotonic. During the attacks, and sometimes between them, she had double strabismus, complete amblyopia, and pupils rigidly fixed in dilatation. At one time in an access of despair I bled her, having seen on one or two occasions bleeding do good in hysterical convulsions. We drew some eighteen or twenty ounces, and for a week she was much better. Then she relapsed again, and finally, when her family was worn out, and two or three nurses had been used up in the service, I took her to the Infirmary for Nervous Diseases, left her there with a strange nurse and under the most rigid rules of isolation, and from that day she had no attack of convulsions, the pain rapidly diminished, and she is now perfectly well.

The case, as I have said, was of course of an hysterical nature, but at least one distinguished physician, who saw it in consultation with me, was of opinion that she had meningitis at the base of the brain and would certainly die.

DR. J. K. YOUNG—The subject of torticollis has been so thoroughly discussed this evening that there remains but the mechanical treatment to be considered. A great many mechanical appliances have been proposed, but most of them are unsatisfactory when applied.

Torticollis is divided into two classes—congenital and acquired. Congenital cases are those which depend upon deficiency of the cervical vertebræ, malformation, uterine pressure, and adhesion between the amnion and the skin of the face, as suggested by Peterson. The acquired cases may be traumatic, tetanoid, paralytic, compensatory, cicatricial or idiopathic. It is obvious that in paralytic and tetanoid cases no operation is of service. The simplest form of apparatus is that used by Dr. Ashhurst, and as originally suggested by Little. It consists of a piece of adhesive plaster about the head, another one about the upper part of the thorax, and a firm muslin roller bandage from the chest region on the side opposite the chest and front. After the operation the head may be placed in the corrected position by means of plaster-of-paris bandage. The bandage which I prefer in all operations upon the head and neck is the starch bandage which may be strengthened by strips of a wood bandage and strips of aluminium.

Another form of apparatus is the Minerva collar pattern, which may be made of felt, leather, or other material. The apparatus of Barwell, referred to under the title of "a cheap and simple apparatus for the treatment of torticollis and cervical caries," is the butterfly pattern. It may be made of felt, cut in shape and adapted to the head and neck.

Of the more elaborate forms are those on the principle of Jörg. Of this pattern there are several; the best one is that used by Dr. Schaffer of New York. It consists of an apparatus applied to the back from which is erected a head piece, a chin rest, and which is attached by a universal joint which admits of its being placed in position. Sayres' apparatus is made upon the same principle.

Dr. Davis' appliance consists of a broad piece of stiff material fitted to the back, with a peculiar shaped head piece which is attached by means of a screw. Other good examples of this appliance are found in St. Germaine's work, page 239, under the title, Minerv De Bouvier and Ernst of London.

Extension of the head is now used both abroad and in this country in the mechanical treatment of this condition. For this purpose, Hilliard's appliance is more elegant than the ordinary extension head piece. The one I exhibit is the apparatus used by Dr. Willard in the treatment of cervical caries. When used for torticollis it must be longer upon one side so as to make more pull upon the affected muscles.

To render the subject more complete, I should perhaps refer to the method of DeLore of the forcible correction of posterior wry neck. The patient is placed under ether on the edge of a bed, and forcible correction of the deformity is then made. In cases where this operation is employed it is necessary to positively exclude cervical caries. I had related to me by a country practitioner a case in which fatal results occurred in attempting to perform this operation.

I have seen many cases of torticollis follow cold, and in such, medical treatment has been effective in a few days. After tenotomy I strongly urge the use of massage and gymnastic exercises.

Finally, I wish to refer to a number of cases of torticollis ocularis, which I have seen in the past two years. These are due to some loss of equilibrium of the ocular muscles, and they are usually corrected by the application of the proper prisms, the superior or inferior rectus being the muscle usually affected.

When torticollis is due to cervical caries, as it sometimes is, manipulation may produce serious results.

I think I can reply to the question of Dr. Wharton in regard to the occurrence of mastoid tumor. There are two varieties of cases; in one there is simple hematoma, in the other, rupture of the fibers of the muscle. In the latter variety of cases torticollis occurs. Previous to Whitman's paper, all statements upon this subject were without foundation, in fact, and were simply the quotations from the writings of Dieffenbach.

DR. H. R. WHARTON—I agree with Dr. Willard in believing that good results follow operation in cases of fixed wry neck. I have had some experience in the treatment of wry neck both in children and in adults, and I have seen marked benefit result from simple division of the sterno-cleido-mastoid muscles. Dr. Dercum mentions asymmetry of the face in connection with this disorder. I saw this well illustrated in a boy recently under my care at the Children's Hospital, in whom there was marked asymmetry of the face and skull. I think the want of success in a good many operations is due to the fact that many of them are left without after treatment by apparatus, gymnastics, muscle stretching, etc. If this is not done a relapse is sure to follow; in my opinion it is as important as the operation itself. I should like to ask whether any of the gentlemen present have ever had any experience

with wry neck following congenital mastoid tumor. These tumors are often due to the rupture of some of the fibers of the mastoid in labor, and we might, therefore, look for wry neck in connection with the accident. A few of the cases I have seen of such tumors have not been followed by the development of wry neck.

Dr. Benj. Lee—I came here this evening expecting to be simply a hearer and to be instructed, and I need hardly say in reference to the latter expectation, I have not been disappointed. Both the papers and the discussions have been of deep interest.

The only point which occurs to me to refer to is Dr. Wilson's case, concerning which I think we may say that we accept his diagnosis without hesitation. It recalls to me a case which I saw early in my practice, some twenty-five years ago. It was a very marked case of wry neck in a child about 4 years of age. On my first examination I pronounced it to depend upon cervical caries. I employed suspension by means of a ratchet apparatus attached to the child's high chair and in a few days marked improvement resulted. Suspension was kept up constantly during the day; she was never allowed to sit up except when the head was supported. In the course of a few weeks I applied a brace with a head support. The wry neck entirely disappeared and the case eventually recovered.

This leads me to say that I believe that in every case of wry neck in a child we should examine carefully to see whether there is not caries present. I believe the former is frequently an early symptom, and that long before any deformity of the bones can be detected, we may find wry neck, resulting from pressure on the nerves at the point of emergence, or from inflammatory irritation of the cord.

The attempt to overcome the muscular contraction in either spasmodic or spastic torticollis by the sheer force of mechanical appliances, I believe to be very rarely successful.

In this connection I would say, however, that in many cases I have had good results from suspension, carried on systematically and persistently, and have attributed the improvement to diminished irritation of the nerve trunks. Contracted muscles, I think, almost invariably depend upon a central irritation existing at least as far back as the point of emergence of the same from the vertebral column. Dr. Mitchell's case is very instructive and, to me, interesting. I have been accustomed in all such cases to look for irritation in the pelvic region reflected to the upper portion of the cord. A rectal or vaginal examination will often reveal a source of irritation of some form, either rectal, uterine or ovarian in the pelvis. If this is relieved we shall occasionally find to our great surprise and delight a diminution of the central irritation with complete relief of the reflex affection.

Dr. F. X. Dercum—I do not deprecate tenotomy in *fixed* wry neck; in clonic torticollis, however, it is certainly little more than a makeshift expedient. In regard to the tumor noted in the sterno-mastoid muscle in infants, at birth, it is sometimes due to hematoma, sometimes to tear and inflammation of the muscle. When tears occur, fixed wry neck is very apt to ensue. I think that we ought to be more careful in speaking of our results; in cases of spasmodic torticollis, cases are often reported as cured when they are only relieved. Very often indeed we find a case reported as cured and find that the account ends by stating: "In six months a slight return of the spasm occurred," or "a slight movement of the head only could be observed," and other expressions of like purport. Certainly, while drugs such as gelsemium, conium, and various surgical measures give marked relief, they generally fail to cure absolutely.

Dr. J. Hendrie Lloyd—In discussing the pathology of wry neck it seems to me that it might be wise to pay more attention to the condition of the muscles; I know that it is not the fashion to look for the possibility of this disease in the muscles, either in the fiber or in the sheath. I have no scientific data upon which to found a statement that wry neck is a myopathy, but it seems to me reasonable, from the fact that this disease is not associated with any particular nerve trunk, but is distributed through irregular muscle groups. It is popular to attribute all muscular involvement to central disease, which necessarily eliminates myopathia. I do not myself believe that we are on sufficiently firm ground to positively assert that all these troubles are located in some form of meningitis, or irritation of the nerve centers. In recent years it has been found necessary to remove several diseases from the groups of central diseases and to place them among the myopathics. This may yet have to be done with wry neck.

I was much interested in Dr. Mitchell's case because it exhibits a not unusual form of hysteria. Hysterical torticollis has been described by French authors. It is simply one of the varieties of hysterical contracture. In his case the convulsive phenomena, the contracture, the fact the patient was cured by isolation, are all very characteristic of hysteria.

Dr. DeForest Willard—Dr. Dercum has spoken of the unsatisfactory results of myotomy of the sterno-cleido-mastoid muscle. While I grant that in a considerable number of cases myotomy does fail, yet in many instances it gives permanent relief. I have seen cases in which there has been no return of spasm for fifteen or twenty years, and this may be called permanent cure. There are a certain number of spastic cases which can not be relieved by this operation, but in inflammatory troubles excellent results can be obtained from myotomy. I advise first medical treatment; if that fails, then mechanical measures and myotomy; then neurectomy.

In regard to the question of subcutaneous or open section; at the present time we are much more inclined to the open method since there is less fear of sepsis than formerly. In a female, however, a large scar is annoying and in girls I perform subcutaneous tenotomy when it can be done with absolute safety. I make the puncture with a small oculist's knife so as to avoid the entrance of the air even, should a vein be wounded.

In many cases if the sterno-cleido-mastoid is firmly stretched, and if a very blunt tenotome is carried along the posterior face of the muscle, there will be no injury to the vein and the muscle can be entirely severed without danger to the other structures. If such division is not sufficient, the mastoid insertion is also divided and abundant correction is secured. Gymnastics and muscle stretching should be practiced for a long period. I recently saw a patient, a young girl upon whom I operated three years ago; her neck was in absolutely straight position, and it was very difficult to decide on which side the operation had been performed. She had had continued gymnastics.

I have never seen the pleura injured except in one case. It was in a case of Dr. Agnew's, and the patient died from septic pleurisy. I believe this is the only case in this city where death has occurred from such cause.

I think we ought to insist upon gymnastics being carried on after myotomy. Without it there little use of tenotomy or of nerve stretching. When medicines, hypodermics, electricity, myotomy fail, I think it far better to excise a considerable piece of the nerve. It is better to attack the spinal accessory nerve high up, before it reaches the sterno-mastoid, as then there is no reunion. Dr. Rhein recently collected for me forty cases of neurectomy and nerve stretching on record, and his figures give 80 per cent. of cases which have remained cured. There was but one death, and that from erysipelas. Thorough excision is an operation abundantly justifiable in these cases of spasmodic contraction.

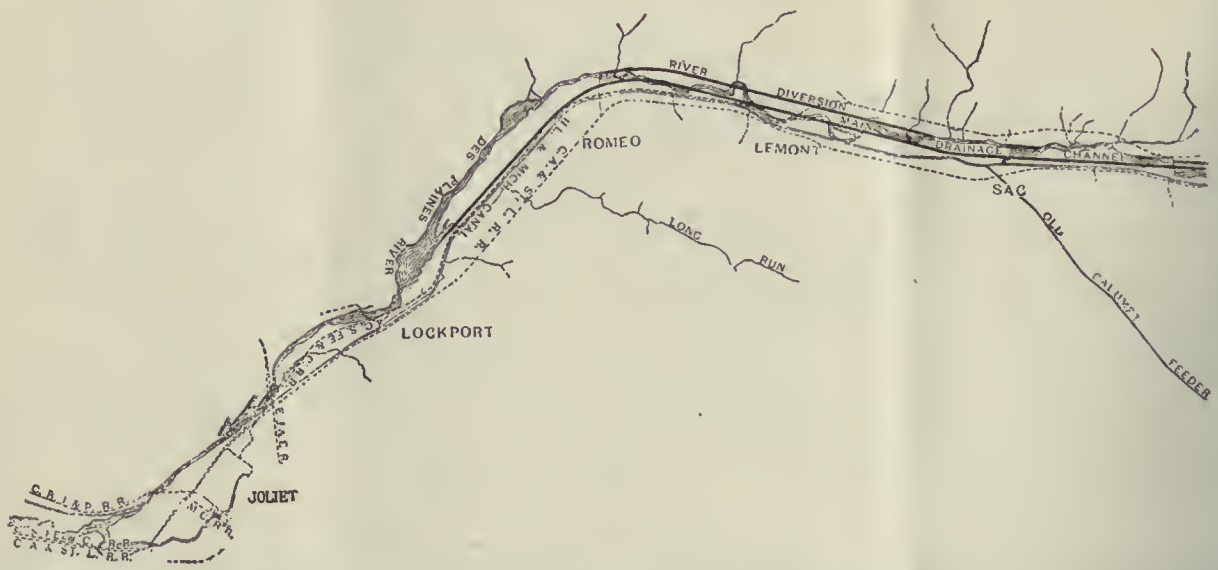
In rotary cases, division of the spinal nerves is the only operation which promises much hope. Simple division of the spinal accessory would not be of much service, but I do not think excision of all the nerves should be attempted when all other means have been exhausted.

If we are positive that spinal caries exists, forcible reduction should be excluded.

THE DRAINAGE CANAL OF CHICAGO.

ONE OF THE GREAT SANITARY WORKS OF THE AGE.

As Chicago is just tasting the first fruits of the work being projected by the sanitary district, the time is propitious for a review of the work on the drainage canal to date, with some account of the relation of the canal to the city's drainage problem. The purpose of the work under way is the construction of a main channel adequate to the disposal of the sewage in the Chicago Valley. The undertaking was immense in its conception and involved the construction of a navigable channel from Chicago to the Desplaines River at Joliet, with a carrying capacity of 600,000 cubic feet of water per minute, and fed from Lake Michigan. It meant the re-linking of two great water systems by a commercial waterway and the solution of a sanitary problem the most intricate of the century. In the course of its prosecution it was necessary to divert the tortuous bed of the Desplaines



River in a straight stretch seventeen miles long, through a channel capable of caring for the flood water from 633 square miles of territory which aggregates at times a volume of nearly one million cubic feet a minute. It is the latter part of the work which is now complete, and it is estimated relieves Chicago of 75 per cent. of the trouble formerly experienced from pollution of drinking water due to backing of sewage in the river.

For the purpose of an intelligent understanding of the drainage problem, as presented by Chicago, and the eventual attempt at solution by means of a drainage canal capable of receiving the total waste, and connecting with the Mississippi system, it is necessary to know something of the topography of the country affected and the peculiar relations of the Desplaines and Chicago Valleys.

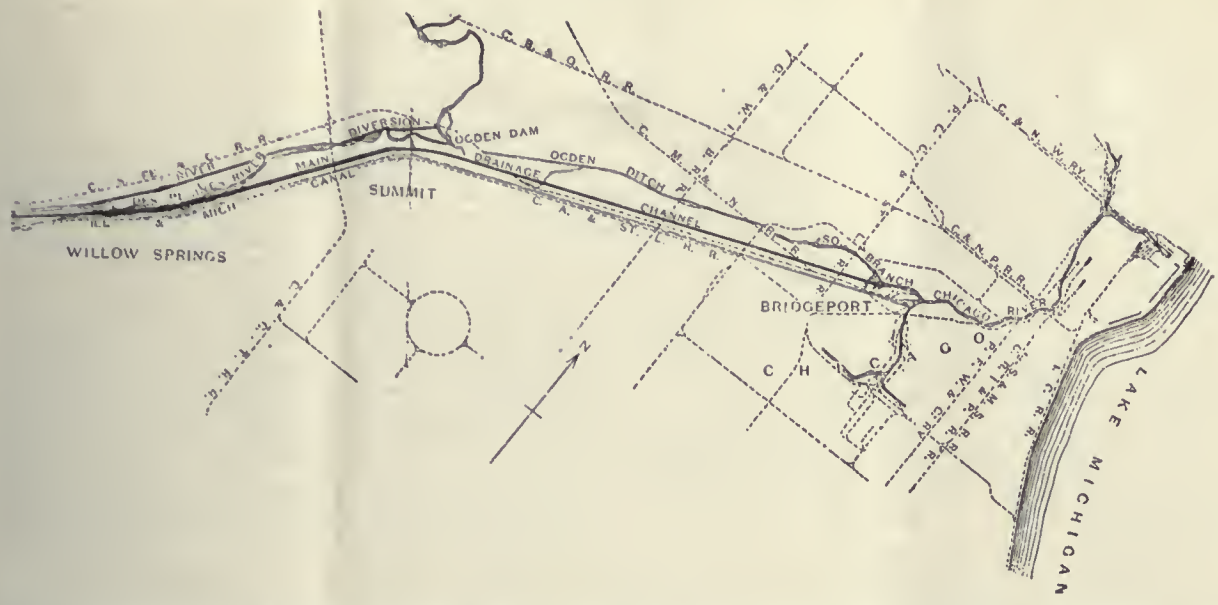
The site of the city is the interior of the low loam and sand ridge which surrounds the southwestern bend of Lake Michigan. This rim or ridge is the lowest point of the great continental water shed which separates the St. Lawrence and Mississippi regions. It trends southward opposite the lake shore about four miles inland at the Wisconsin State line, and gradually diverges until at a point on a line with the mouth of the Chicago River it is ten miles distant. On the east side of this ridge, and between it and the lake, lies the basin containing Chicago, through which run the north and south branches of the river, meeting, and forming a short, common outlet to the lake. On the west side of the ridge and running almost directly south to a point opposite the origin of the south branch of the Chicago River, then trending to the southwest just above the town site of Summit, lies the bed of the Desplaines, an elementary branch of the Illinois River. The watershed of the Desplaines includes a territory of 633 square miles, the north boundary of the oblong tract drained extending into Wisconsin about fourteen miles. The ridge is lowest at the point opposite the Bend in the Desplaines, it here rising but twelve feet above Chicago datum, or the surface of Lake Michigan. Sloping away to the east is a low, marshy tract through which runs what is known as the Ogden Ditch, a drainage trench constructed in the early days of the city and affording an outlet to a swamp region known as Mud Lake. The ditch discharges into the south branch of the Chicago River. South of it is the old Illinois and Michigan Canal connecting the Chicago with the Illinois River at Peru. This canal cuts the watershed above described and follows a course parallel to the Desplaines.

As the city developed in extent and population it was found that the sluggish Chicago River, into which most of the sewage was thrown, had become an almost stagnant cess pool inimical to the civic health not only from the putrescent gases exhaled, but also from its pollution of the lake and consequently the drinking water supply. Heavy rains but aggravated the condition, as the sewage was flushed into the contiguous portion of the lake where for lack of a dispering current the mass of waste lay slowly throwing off its putrid vapors to be carried by the winds through the city.

In 1879 much the same condition of offensive stagnation prevailed in the Illinois and Michigan Canal. At that time this narrow channel had a flow of but 9,000 cubic feet per minute. It held sewage in the proportion of about one to four, and thirty miles below Chicago, where the water fell over a dam, the odor thrown off, it is said, was comparable to that from an emptying privy vault. This nuisance proved so absolutely intolerable to the residents of the interior that Chicago was compelled to erect pumping works at Bridgeport with the object of increasing the velocity and volume of the stream with a view to dilution and more rapid oxygenation. The station was established six miles from the mouth of the Chicago River on the south branch and when completely equipped was capable of throwing a stream equal to 40,000 cubic feet a minute, and the maintenance of a six-foot head. This resulted in an amelioration in the condition of the canal contents, though the nuisance was by no means entirely abated. Its effect at Chicago was to set a current from the lake through the six-mile strip to the south branch, to the pumping works sufficient to effect a complete change in the water once in forty-six hours. This short strip was practically all that was affected. The Stock Yards section with its two and one-half miles of putrescent filth was unprovided for, and the north branch, with the drainage of 172 square miles of urban and tributary territory, lagged with barely current enough to force its slimy length lakeward. Added was the constant menace of sewers belching directly into the lake north and south of the river mouth. Around each exit hung a heavy bank of filth that with every wind off shore was driven to the water-works crib. Thus the city was continually confronted with the manifold dangers incident to drinking its own waste, with the dangers to public health increasing in regular ratio with the progressive growth of the city.

Floods invariably had their issue in great exacerbations of the evil. All the accumulated surface filth was washed onward and, joining with the sluggish sewer way which was the result of the river's evolution, sent a torrent of thick, murky fluid through the channels, stirring up the putrid sediment, and finally casting a disease bearing pall over the Michigan reservoir for miles.

The treacherous Desplaines was a potent factor at times in aiding this distribution. Whenever its volume increased to 50,000 cubic feet a minute the river surged out of its bed and over the Chicago divide, then through Mud lake and along the line of Ogden's ditch to the south branch. Here the sewage current would be turned and the foul mass seek the vicinity of the city water intakes. If the volume of the inundation equalled the amount being worked off by the Bridgeport pumps, the latter were forced to close down,



when the old Illinois and Michigan canal would resume its slow descent as would be evidenced by the complaint wail sent up along its route. These manifold causes of annoyance and uneasiness were evidences of the urgent necessity for a radical change in the city's drainage.

Many schemes of sewage disposal were suggested and considered. That of land disposal was impracticable from its great cost and from its being inapplicable to the stagnant Chicago River. No means of lake disposal could be suggested that secured immunity of the water supply. Chemical precipitation was expensive and did not meet the requirements of the case.

The plan of sanitary dilution was finally settled on as meeting the logic of the situation. The peculiarly advantageous location of the city almost astride the continental water shed with the practically inexhaustible waters of Lake Michigan on one side and the feasibility of a discharge by way of the Illinois and Mississippi Valleys on the other were suggested by the freak of construction left by nature's own hand. At a time not remote geologically the great lakes had found a partial outlet across the Chicago divide. It was purposed to re-establish this connection between the two great water ways. The economical and commercial possibilities of the scheme were almost unlimited as the drainage channel could be constructed of such depth and breadth as to provide transportation for craft of any size, in conjunction with necessary improvements in the channels below. To Chicago however, the great incentive was the desire to work a permanent adjustment of her drainage difficulty. In the projection of the scheme to a successful conclusion the city had to guarantee immunity from pollution to the towns on the route below. The channel was to be of sufficient capacity to afford the dilution necessary and also care for any possible volume of flood water to prevent backing sewage to the lakes. The disposal of the sewage was to be complete and rapid and in as fresh a state as possible; and dilution at the point of discharge of such quantity and character as to procure rapid oxygenation, and immunity to aquatic life.

To meet the requirements the channel had to be of a capacity of 300,000 cubic feet of water per minute for immediate needs, and so arranged that its capacity with a current velocity of 1½ miles an hour could be increased to 600,000 cubic feet a minute. The latter volume would. it was estimated produce sanitary dilution in the sewage from a population of 3,000,000 and was anticipatory of the city's development. Such a channel flushed with the well aerated and oxygen loaded water of Lake Michigan, in conjunction with auxiliary works to meet the peculiar local conditions, gave the city the promise of efficient drainage for all time. It is thought that by the institution of special devices for the destruction of the solid organic waste, the city will be able to send from its doors a sewage stream that will stand a comparative analysis with any natural stream in the State. This last statement refers to pollution only as concerns what a chemical examination will reveal. Biological analyses under these circumstances are as yet so meager in results that the possibility of pollution with pathogenic germs is still a matter largely problematic in its relation to residents some distance from the source of infection.

For the purpose of prosecuting this drainage scheme the Sanitary District of Chicago was organized, Jan. 18, 1890, under a special act of the Illinois Legislature which gave the district power to raise the necessary funds, condemn a right of way, etc. Ground was broken Sept. 3, 1892, not far from the town of Lemont. Since then the work has been progressing satisfactorily and the district is fully expecting to see the completion of the main channel by the expiration of the time set—April 30, 1896.

The main channel is thirty-three miles long and extends from Bridgeport south-west parallel to and north of the old Illinois and Michigan canal. Its objective point is the Desplaines river at Joliet. About ten miles of the route is through clay, ten miles in glacial drift, and the rest in solid rock with only a slight covering of earth. In rock the channel will be cut 160 feet wide at the bottom with almost vertical sides. It will give a current depth of 22 feet. In the dirt cutting the channel at bottom will be 202 feet wide sloping to 290 feet at the top. The first work here will give a water depth of but four feet which, it is estimated, will give a flow of 300,000 cubic feet a minute, a volume sufficient to meet the immediate drainage need. As the population increase demands it, the dirt work may be dredged to the rock work level and eventually provide for the full flow of 600,000 cubic feet a minute.

As the line of the main channel was laid out without any reference to the bed of the Desplaines the latter intersected the route at many points. Taking advantage of the necessity for diverting the river from its course a straight and deeper channel was given it which did away with the obstructing tortuosities of the old bed and increased the capacity to a point sufficient to care for the total flood water from its water shed. For the purpose of more effectively providing against an overflow into the main drainage channel the high water line is raised by a protecting levee throughout the seventeen miles of low marshy country from Summit to Romeo the latter point within eight miles of Joliet. This bank of earth begins nearly two miles north of Summit on the crest of the water shed. At Summit it trends to the south-west closely hugging the left bank of the diversion to the terminus.

The drainage board thought it inadvisable to turn the total flood water into the diversion for fear of damage at points below. To meet this contingency, and also protect Chicago a spillway was constructed at the ridge portion over which the flood habitually flowed. The spillway is a fine piece of masonry 400 feet long and rising 16.25 feet above Chicago datum. It intercepts any flood to a volume of 250,000 feet, five times the amount formerly held back by the water shed. This will protect Chicago from any but the most extraordinary caprices of the Desplaines. The spillway will be brought up to the general height of the levee when the proposed improvements have been completed in the Desplaines bed at and below Joliet.

It is the practical utility of this spillway that Chicago now realizes and its work is the first material evidence of what the Sanitary District is doing for Chicago's relief. Before the completion of the river diversion the Desplaines periodically overflowed its water shed, forced its flood through the Chicago, compelled the stoppage of the Bridgeport plant and in the usual course led to the pollution of the drinking water. That dire consequences were the resultant may be demonstrated by a reference to the heavy mortality in typhoids following the floods of 1892. During this year heavy rainfalls occurred in the early part of May followed by an overflow from the Desplaines lasting twelve days. The flood swept through the Chicago river driving the sewage to the crib. In the latter part of the month the water subsided but June 1 it rose again and until July 6, with the exception of four days in the middle of June, the Bridgeport works were compelled to shut down. When the flood was at its height the volume of overflow was 600,000 cubic feet a minute and the intake at the water works crib was drawing in sewage almost pure and undiluted. In the district supplied by this intake typhoid fever soon became epidemic. The health department's records show that during July, 211, August, 179, and September 138 fatalities resulted from this disease, as against an average of sixty-six deaths in preceding months. In the district directly supplied the number of typhoid cases increased almost five-fold.

During this flood period the Bridgeport pumps were useless forty-three days. Had the spillway been in operation that year the pumps would have been overcome but seven days altogether. The flood scale at Riverside shows that even this would have been distributed at intervals of two or three days each and could not have led to a widespread pollution. The volume was not more than sufficient to neutralize the induced current in the Chicago river, not enough at least to back the sewage to the crib.

Relieved from the evil ensuing from deluges of flood water from the Desplaines valley Chicago has to contend with no flood water but that from its own valley. This comprises the scourings from a shed 272 square miles in extent. The completion of the main drainage channel will, *per se*, care for this.

While this drainage channel is competent to do the work claimed for it, it is really but the lever which those conversant with all the facts in the case expect to use in securing coöperation in solving the rest of the problem. In itself the channel is not practically available until after a vast amount of auxiliary work has been prosecuted. The present work, it is estimated, will cost between $25,000,000 and $30,000,000. As much more will have to be expended before Chicago obtains her ideal of drainage. The general expectation has been that the water supply from Lake Michigan is to be fed through the Chicago River and its south branch. In its present state the river channel is so narrow as to render it physically impossible for the south branch unaided to feed the amount of water required in the canal. The expense in condemnation proceedings incident to sufficient enlargement of the river bed is practically prohibitive, as row after row of valuable manufacturing and other plants would have to be sacrificed. Even were the improvements carried through regardless of the expense to be incurred, it is freely acknowledged by competent engineers that the physical features are such that perfect drainage could not then be secured without a further immense outlay in lateral branches and pumping works. These adjuncts to the main channel are required to overcome the difficulties presented by, 1, the Stock Yards district; 2, the large territory whose sewers discharge directly into the lake; and 3, the thickly populated district through which the north branch descends.

The proposed canal inlet from the Chicago River strikes the west fork of the south branch almost directly from the southwest. The east fork of this branch strikes the main body at an acute angle coming from the south. This latter fork is two and one-half miles long, including the Stock Yards slip, and is what is called a "dead end." There never has been a sufficient circulation through it, and as it receives the heavy Stock Yards sewage, beside several square miles of urban drains, it lays the year round a stagnant mass of foul, stench exhaling, disease germinating filth, reaching its mephitic influence over the densely populated district adjacent. Its constant power for evil is indicated by reference to the disease statistics of this section, showing a remarkable prevalence of diarrheal and miasmatic diseases, with a mortality rate for these troubles the highest in the city. In no other portion of the city does the principle of survival of the fittest work its ends more demonstrably. Only the most strongly constituted babies survive their babyhood in this neighborhood. The infantile mortality rate excels that of any other portion of the city, which may be minus its cesspool, though as densely populated. The Stock Yards cesspool will have to be drained. The drainage channel as now contemplated will not give the circulation needed. Two suggestions for auxiliary works have been made. One is to run a lateral channel from the main canal through the district to the lake. This channel would drain directly and beside help to feed the diluent wanted for the central drainage system. The other scheme contemplates a large feeder to the lake from a point further down the river. Then the Stock Yards sewers would be centered at a point from which their contents could be pumped into the canal. In this instance the "dead end" would be filled in.

The sewers now discharging directly to the lake would be headed toward the canal, an artificial circulation to be established where necessary.

For the solution of the North Side problem the concensus of opinion seems to favor the extension of the north branch, by a navigable channel, to the north and possibly around the suburb of Evanston to the lake. This would secure a continuous natural flow without the necessity of pumping works.

One other phase of the drainage question may be noticed in passing. South Chicago is a rapidly developing, thickly populated section on the lake shore at the mouth of the Calumet River. The latter stream empties its drainage contents about twelve miles from the mouth of the Chicago River. It may some day complicate Chicago's drainage scheme by pollution of the lake. In anticipation of this it is thought possible that an additional channel may be constructed which will drain the Calumet region into the main canal.

In connection with the inquiry into the status of the drainage canal work the JOURNAL representative spent three days among the workmen's camps with a view of learning the sanitary and hygienic condition prevailing. In many instances the state of affairs is deplorable. Health regulations are disregarded entirely and the housing of the men more like that of neglected swine than of human beings. This seems due entirely to the culpable indifference of the contractors. The latter are bound by clauses in their agreement with the Sanitary District to observe the sanitary regulations. The latter are issued by the drainage board and if lived up to would secure everything healthful and disease preventive. With the lax methods in vogue no arrangements are made for disposal of sewage, shacks and shanties are located on the surface of soggy and marshy pieces of ground, insufficient privy accommodations are provided and only the scantiest provision made for conveniences of personal cleanliness.

As consequences of this rough go-as-you-please, slops and kitchen refuse are thrown on the ground from the kitchen doors, through gaping cracks in poorly laid floors arise the noxious gases of decomposition from the sewage impregnated soil, and surrounding the houses are circles of human excreta.

On comment being made the answer is that regulations are impossible of enforcement among the class of men employed on the work as it is impossible to compel them to use privies and dispose of the slops at a distance from their shanties. The excuse carries as far as concerns the personal habits of the men as most of them are the scum of immigration. It makes no defense however against the lack of drainage facilities and the failure to elevate the shanties to admit free circulation underneath them. In the neighborhood of Romeo where the laxity is most noticeable there is an abundance of stone which might be used for foundation purposes. It could be used at little extra expense.

Coming east from Romeo there is a much better condition. In the camps at the Chicago end of the route the contractors heartily coöperate with the health authorities. Ditches for drainage are put in, the men are comfortably housed, slops are collected in barrels and hauled to points remote from dwellings, and privies are so constructed that they may be flushed occasionally.

Dr. William Martin, the health inspector for the Sanitary District, with the aid of the sanitary police does all that is possible for the relief of the men. The great difficulty encountered is the impossibility of enforcing the health laws of Illinois. They entail no penalty in their breach and observance can not be compelled. Under the circumstances the most that can be done is to secure pure water by driven wells with impervious casings, keep close watch of the food and condemn bad meats and secure by diplomacy as much else as the greed of the contractors will admit.

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SATURDAY, JANUARY 20, 1894.

THE ANNUAL HOSPITAL ACCOUNTING.

"I'll jest a twelve month in a hospital."—*Love's Labor's Lost.*

The annual crop of hospital reports is now ripe; as the news columns of the JOURNAL this week bear ample testimony. The reports, many of which are filled with details which only interest their respective localities, are yet unfailing indexes of the great charitable impulses of our country. They show in general that the hospitals are growing more and more useful to the communities in which they are placed, and that the equipments are vastly superior to those of even a decade ago. Nor is it uninteresting to the metropolitan physician to learn that the miners of Cripple Creek are to build a cottage hospital fitted with modern appliances and constructed in accordance with the latest principles of hospital construction. The great school of experiment and clinical observation from the earliest times to the present, with exception hereinafter noted, has been held in the hospital amphitheater and at the bedside. There were Asclepiades before there was a Hippocratic era, and the "handwriting on the wall" in the days of Hippocrates was the clinical notes thereon recorded of the patients treated therein.

It is thus apparent that the science of medicine was redeemed from mysticism through hospital observations. Wise, in his interesting history of medicine among the Asiatics, says that in the time of the great ASOKA, B.C. 220, "the Buddhist priests formed themselves into companies, to make pilgrimages from town to town, and from temple to temple, with the object of conversion and for the propagation of their benevolent schemes, among which was assistance to the sick.

"To South Behar, people repaired from all the provinces where the delegates remained in towns, and each establishment had a *medicine house* of happiness and virtue; more particularly in the west of India where the Banians and Jains were numerous. The poor and the orphan, the lame and the sick of the provinces repaired to these houses where they had all that was necessary for their wants. Physicians instructed in the ancient Hindoo medical sciences, examined and treated their complaints, and they were provided with food and drink according to their experience of what was right, and proper medicines were administered to them. Nothing was omitted that could contribute to soothe and gratify them, and to cure their diseases. At the same time the utmost liberty was given them, so that they could leave the hospital whenever they desired."

The exceptional humanity of the Buddhists induced them as well to build hospitals for animals, and at Surat there still remains an animal hospital which is now nearly two thousand years old.

"This curious institution," says WISE, "is supported by one anna per cent. on the rupee of the merchant's clear gain, to which is added the fines for certain venial offences, under the supervision of the chief Banians. In 1770, when trade had decayed, the revenue was upward of £600 a year, and so careful were they of animals, that bread and milk were provided for two which could not crop grass. The hospital consisted of twenty-five acres, surrounded by a high wall, divided into courts, and defended by sheds and wards for the accommodation of the animals." "If proper inquiry were directed to this building," writes PRINSEP, "I dare say it would be discovered to be a living example (the only one that has braved twenty centuries) of the humane acts of ASOKA, recorded at no great distance, on a rock in Guzerat."

In the days of Roman ascendancy the hospitals were regarded as an asylum offered by charity to the sick poor, and no longer as in the Hippocratic period, schools for young physicians. The oldest hospital of our era was the hospital founded by Saint Simon, in Constantinople between the churches of Saint Irene and Saint Sophia. In the time of Justinian the hospital was embellished and rebuilt.[1]

Much could be written on the history of hospitals, as recorded by historians, but to us we think that very much of the knowledge of the day, and that which has placed our time in possession of so many scientific facts of use to human kind, has come from hospital observations. Some of the humblest of them may furnish material wisdom of the highest character.

THE WHOLESOMENESS OF SUBSOIL WATERS.

PROFESSOR ROBERT KOCH, in his paper on "Water Filtration and Cholera," a translation of which has been published in some of our journals, attributes the preservation of Altona from cholera at the time when Hamburg was so severely affected to the use of properly filtered water. These two cities (and a third, Wandsbeck, which like Altona owed its preservation from the epidemic to the purity of its water) are contiguous, forming a single community, yet hav-

1 Sprengel.

ing separate systems of water supply. That of Hamburg is taken unfiltered from the Elbe above the city; that of Altona from the Elbe below the inflow of the sewers of Hamburg. Cholera restricted its ravages to the districts of the Hamburg water supply. In one street which for a long way forms the boundary between the two cities, cholera prevailed on the Hamburg side but did not cross to the side supplied by the Altona water works. The filtration at these works removed the germs poured into the river with the Hamburg sewage. The conditions of an efficient filtration such as that at Altona are stated to be a layer of sand at least thirty centimeters thick, the restriction of the filtration to a rate of 100 millimeters per hour, and the freedom of the filtered water from germs in excess of 100 per cubic centimeter. The slime deposited from the water is the true filtering medium, the sand layer constituting merely the basis on which it is formed. The value of artificial filtration having been thus premised, PROFESSOR KOCH points out the vast stores of naturally filtered water that are to be found in the subsoil, even in a soil which has been much and for a long time contaminated, as in that of the city of Berlin. "All liquids," he argues, "even those most strongly contaminated, must, before reaching the depth from which the water is raised, pass through thick and efficient filtering layers by which they are rendered absolutely free from infectious matters. Especially is this the case if the boring goes through an upper impermeable layer into deeper sand or gravel layers containing the waters."

In the last sentence he recognizes the distinction which in this country we make between shallow wells and deep wells. Our sanitarians do not question the purity of water brought from beneath an impermeable stratum, but they have no faith in the wholesomeness of the water derived from shallow wells. PROFESSOR KOCH attributes all epidemics from wells to contamination from unfiltered inflow from the surface by cracks and fissures, and proposes to remedy this by inserting an iron pump into the well and filling up around the pump with gravel and sand so as to ensure the filtration of all inflow to the lower end of the pump. Many of our municipal health officers have during the past fifteen or twenty years closed up all shallow wells within their jurisdiction, and it is doubtful if even on the dictum of the distinguished bacteriologist they would authorize their reopening. The filtration of subsoil water into shallow wells may be efficient against cholera in view of the experience at Altona; but it was the danger of the propagation of typhoid fever which led to the closure of our shallow wells in thickly settled localities. This action was suggested by the occurrence of many instances of the propagation of typhoid by subsoil water, and the subsequent lowering of the typhoid rate proved the wisdom of the measure. The life history of the bacillus of typhoid has not yet been written in full, nor has the efficiency of the natural filtration through the upper layers of the soil been demonstrated satisfactorily as regards this bacillus. We confess, therefore, to the same fear of its presence in the water of shallow wells, that led our health officers to prohibit the use of such local supplies.

YELLOW FEVER.

The raising of the quarantine at Brunswick on November 30 was truly a day of Thanksgiving for that stricken community. For more than three months the inhabitants were practically isolated from the rest of the world, with the means of livelihood cut off, and the impending danger of contracting the disease before the anxiously looked for frost should make its appearance.

The probabilities are that if an efficient State health organization had existed in Georgia, the splendid record made by the State Boards of Gulf and South Atlantic States, and the Marine Hospital Service, in the prevention of the introduction and spread of yellow fever for a number of years past, would not have been broken.

Under the stimulus of the AMERICAN MEDICAL ASSOCIATION, Georgia was one of the first States to pass an act creating a State Board of Health, but unfortunately no money was appropriated to give effect to the law.

The suffering and loss caused by the Brunswick visitation can not be estimated in dollars and cents. Georgia is one of the few States in the Union that has not made provision to protect the lives of its citizens from pestilence. Will the Empire State of the South longer remain under this stigma? There is a movement now being made to secure the necessary legislation, but it meets with opposition. Some of the opponents seem to think that quarantine alone is necessary, and that that can be better performed, and with no expense to the State, by the National Government. This is true to a certain extent, but quarantine is only one of the sanitary agencies necessary to protect the public health of a State. Under our form of government, to provide proper sanitary protection, the municipality has a duty to perform, and if, as frequently occurs, the jurisdiction of the municipality is too limited, then the duty of the State comes in, and in like manner that of the National Government, when the State system is inadequate.

It is very important, in the interest of epidemiology, that the true history of the introduction of yellow fever at Brunswick, and its subsequent breaking out after it was thought to be stamped out and so declared officially, should be known to the public. The disadvantages under which the Marine Hospital Service labored were many, and taking everything into consideration, the officers of that Service deserve credit for limiting its spread.

CONTRIBUTORY NEGLIGENCE OF PATIENT AS DEFENSE TO CHARGE OF MALPRACTICE.

One of the most interesting decisions rendered for some time in a malpractice case, is that of the Appellate Court of Indiana in YOUNG v. MASON (decided Nov. 22, 1893, and just reported, 35 Northeastern Reporter 521). In this case the jury returned a general verdict for $1,000 in favor of the party claiming injury, and also returned answers to forty interrogatories submitted on behalf of the physician sued. Now answers to interrogatories override a general verdict when both can not stand together, but not where they can be reconciled.

It was clearly shown by the answers in this case that the physician possessed fair and ordinary knowledge and skill, also that the manner in which he dressed and treated the injuries of this patient was, with one exception, such as is approved and followed by the most skilful surgeons in that vicinity, and which is approved by the standard authors and text-writers upon the subject of surgery. The exception was that the answers did not conclusively show that he exercised due skill and care in reducing a fracture near the wrist joint. This act, with other acts of alleged negligence, it was charged, caused a certain stiffness of joints and the loss of the use of the arm, for which damages were sought. But the answers also showed that the patient took her injured arm out of the sling, contrary to directions, and placed it on her lap, window sill, and table, and that she also refused to allow the physician to use passive motion at the times, and to the proper extent.

Indulging every reasonable presumption and intendment in favor of the general verdict, and granting that the party who brought the action established to the satisfaction of the jury every fact put in issue, except when the answers to the interrogatories affirmatively and conclusively showed to the contrary, and giving a fair and reasonable construction to the facts, which were clearly, specifically, and without conflict or contradiction found in the answers, the court concludes that the negligence of the physician in failing to reduce the fracture near the wrist, and the refusal of his patient to allow him to subject the injured joints, at the proper times, to passive motion, concurred in producing the injuries for which recovery was sought.

The authority of other courts is quoted to the effect that, "the law has no scales to determine in such cases whose wrong doing weighed most in the compound that occasioned the mischief." "It is the duty of the patient to submit to the treatment prescribed, and to follow the directions given, provided they be such as a physician of ordinary skill would adopt or sanction A person can not recover from another for consequences attributable in part to his own wrong."

In consequence of the answers to the interrogatories showing, as stated, that the injuries complained of were certainly aggravated by the misconduct of the patient, the trial court, upon motion made in behalf of the physician, set aside the general verdict of the jury against him, and rendered judgment in his favor. This the Appellate Court affirms.

The law on this very important subject is further illustrated and summed up, by the Appellate Court, as follows: Suppose a man fractures the bones in his leg below the knee, and calls a surgeon to treat the injuries, and the surgeon negligently fails to properly reduce one of the fractures, but in all other respects gives proper treatment, and the patient, in disobedience of the directions of the surgeon, negligently removes the bandages used as a part of the proper treatment by the surgeon, or is otherwise guilty of contributory negligence, and such combined negligence of the surgeon and patient unite in producing a shortness and stiffness of the leg, for which injuries an action is brought against the surgeon, can the patient recover? The patient is certainly not responsible in such case for the original negligence of the surgeon in failing to properly reduce the fracture, but this negligence of the surgeon unites with the subsequent contributory negligence of the patient in causing the shortness and stiffness of the leg. Now it seems clear, under such circumstances, and the authorities cited, that the patient can not recover for the consequent shortness and stiffness of the leg.

Where both the surgeon and patient are free from negligence, or where the surgeon and patient are both guilty of negligence, or where the surgeon is free from fault and the patient is guilty of negligence, no recovery can be had against the surgeon in any case. It is only where the surgeon is guilty of negligence and the patient is without negligence on his part contributing in any degree to such injuries that the patient can recover damages of the surgeon.

SOCIETY NEWS.

The Minnesota Academy of Medicine met January 3 at the Ryan Hotel, St. Paul. The program submitted was: "Neurological and Psychological Freaks," a paper by Dr. W. A. Jones and a discussion led by Dr. R. O. Beard; paper, "Brain Lesions—The Result of Injury Without Apparent Fracture," Dr. C. H. Mayo, and a discussion led by Dr. W. A. Jones; "A Consideration of the Subject of Ovariotomy," with report of thirty-three cases, by Dr. A. McLaren.

Proposed Medical Society Building.—The Hartford Medical Society held its annual meeting at the residence of Dr. Gurdon W. Russell January 1. By the terms of the will of Mrs Mary C. Hunt the Society will receive $20,000 for a new building, providing a lot is secured within two years. A subscription for a lot was started, Dr. G. W. Russell heading it with $1,000, and Dr. G. P. Davis following with $500. A canvass will be made and it is expected that the balance will be easily raised. After the meeting refreshments were served.

These officers were elected for the ensuing year: President

H. P. Stearns; Vice-President, A. W. Barrows; Secretary, Gideon C. Segur; Treasurer, C. D. Alton; Librarian, E. K. Root; Censors, S. B. St. John, G. R. Shepherd, W. M. Hudson; Trustees, G. W. Russell, M. Storrs, A. W. Barrows; Executive Committee, Gideon C. Segur, C. D. Alton, E. K. Root; Building Committee, G. W. Russell, M. Storrs, G. R. Shepherd.

Baltimore Medical Association.—The annual election of officers of the Baltimore Medical Association was held Jan. 8 at the rooms of the Medical and Chirurgical Faculty, and resulted as follows: President, Dr. David Street; First Vice-President, Dr. H. H. Bredler; Second Vice-President, Dr. E. D. Ellis; Recording and Reporting Secretary, Dr. Eugene L. Crutchfield; Corresponding Secretary, Dr. J. D. Farrar; Treasurer, Dr. J. Ingle; Executive Committee, Dr. John I. Pennington, Dr. Steven Crowe, Dr. J. Edwin Michael; Committee of Honor, Dr. George J. Preston, Dr. Chas. H. Jones, Dr. John W. Chambers. After the meeting the physicians adjourned to Tierney's where supper was served.

New Haven Medical Society.—The 91st annual meeting of the New Haven Medical Society was held at the residence of Dr. S. Hartwell Chapman, on Church Street, January 3. There were thirty members present. Reports of Secretary and Treasurer were read and officers were elected as follows: President, Dr. Henry L. Swain; First Vice-President, Dr. J. W. Seaver; Second Vice-President, Dr. T. M. Cahill; Secretary, Dr. J. H. Townsend; Credential Committee, Drs. Francis Bacon, T. E. Beckwith; Finance Committee, Drs. H. Fleischner, C. A. Lindsley.

Dr. Gustavus Eliot, the retiring president, then read a paper on "Reciprocal Duties of the Senior and Junior Members of the Medical Profession."

Kansas Medical Societies.—The joint sessions of the Eastern Kansas and Golden Belt Medical Societies were inaugurated at Topeka January 4, and concluded in the evening. Fifty members attended. Among others: Dr. W. S. Pickard, Burlingame; Dr. L. Reynolds, Horton; Dr. L. H. Murphy, Minneapolis; Dr. A. B. McCandless, Horton; Dr. Wm. B. Dewees, Salina; Dr. H. H. Sutherland, Herington, Kan.; Dr. J. N. Ketchersid, Hope; Dr. J. H. Wetherbee, Hutchinson, Kan.; Dr. B. E. Fryer, Kansas City, Mo.; Dr. J. F. Binnie, Kansas City, Mo.; Dr. Jas. Haigt, Wetmore, Kan.; Dr. T. M. Zane, Osage City; Dr. A. H. Cordier, Kansas City, Mo.; Dr. Geo. Halley, Kansas City, Mo.; Dr. J. W. Felty, Abilene, Kan.; Dr. J. Block, Kansas City, Mo.; Dr. O. C. McNary (Surgeon Soldiers' Home), Leavenworth; Dr. W. S. Bunn, Lawrence, Kan.

Dr. Jas. Haigt of Wetmore, Kan., advocated the electrical method of curing consumption, using the galvanic current. On the electrodes which he uses he places iodin; this is "driven" into the lung tissue, and by this means a cure is effected. He cited a number of cases in which he had brought about remarkable cures.

Dr. W. B. Dewees of Salina, in his paper on "Proper Diagnosis," said that the best position to make an examination is in the erect posture and not the recumbent posture.

Dr. J. Block of Kansas City, Mo., presented a paper on "Some Practical Observations on Strictures of the Urethra."

Dr. J. L. Gilbert of the Kansas Medical College, read a paper on the subject of cancer, in which he advocated the theory that its growth and development is due to a germ.

American Electro-Therapeutic Association.

The Third Annual Meeting Held in Chicago, Sept. 12, 13 and 14, 1893.

AUGUSTIN H. GOELET, M.D., President.

(*Continued from page 70*).

On motion of Dr. Hayd, seconded by Dr. Newman, the papers of those not present were ordered to be read by title.

A paper by DR. DANIEL B. D. BEAVER, of Reading, Pa., was then read by title, entitled

NOTES UPON SOME USES OF GALVANISM IN SURGERY.

A respectably large experience with electricity, covering a period of thirteen years in public and private practice, in the treatment of nearly all the diseases to which this remedy has been commonly applied, would suggest comparison of methods and results, but as there is an abundance of material for discussion at this meeting it seems more desirable to present, as my triennial contribution to the transactions, a brief summary of observations which are comparatively new.

These notes, then, will invite your attention to the use of galvanism in a few surgical affections only, in which it has heretofore not been used, or of which so few cases have been reported that the value of its application has not yet been determined; and they are: goitre, coccydinia and ulcers.

In the treatment of goitre, my experience with electricity is limited to two cases, but as I did not employ it until after iodin and iodoform internally, and compound solution of iodin and carbolic acid injected into the enlarged gland had failed, these are exceptional ones and therefore of themselves worthy of record.

Case 1—was in the person of a man, aged 73, a frescoer by trade, whom I was called to see December, 1891, and of whose case I have these notes:

He noticed the presence of a small tumor on the right side of the neck nine years ago, which had attained the size of a walnut a year ago. From that time it grew rapidly, so that it is now the size of a large fist. It occupies the right anterior third part of circumference of the neck, extending from the sternum and clavicle to the lower maxillary bone. Below, it covers the sternum and inner half of the clavicle, and above dips behind the ramus of the jaw. Laterally it displaces the common carotid artery backward and outward, so that it can be seen beating in a line dropped from the prominence of the mastoid bone. This vessel is considerably larger than the corresponding one on the left side, and sends a large branch from its middle third to the growth. The superficial veins over the tumor are dilated. The tumor is hard, slightly elastic, and smooth on the surface. It has displaced the trachea and larynx toward the left so that the prominence of the thyroid cartilage is directly under the left angle of the lower jaw, and the trachea can be felt distinctly for an inch below the larynx in this abnormal position. The left lobe of the gland is about the size of a hen's egg, but lacks the hardness of the other.

He seeks relief because for the last month he has been taken twice or thrice a week with what he calls choking spells, every one of which he and his wife feared would be fatal. The description they give of these spells indicates them to be due to spasm of the vocal bands. His voice is variable and uncertain at all times. Occasionally it is full and sonorous, but generally of a loud whisper. He is barely able to swallow solid food, and must take liquids very carefully to prevent them entering the larynx. He has lost flesh and strength.

The indications for treatment in this case were very distinct. It was very evident that nothing but removal of part or all of the growth would give relief. Extirpation with the knife in a person of his age and condition was out of the question. My previous success with preparations of iodin, in the treatment of goitre, led me to try iodoform in 3 grain doses, thrice daily, although I belived the hypertrophy to be of the fibroid variety. This was continued a month with apparent benefit, and during this time three injections of a 7 per cent. solution of carbolic acid into the growth were made. Then the patient was taken with the grippe, and was very sick for two weeks. This left him with intense neuralgic pains in the right face, neck and shoulder. The tumor, which had become smaller under the effect of the injections and iodoform, now increased in size and became painful, and tender to pressure on the anterior surface. A week later a fine aspirating needle was driven into the tender area and a drachm of blood and pus withdrawn from a depth of one inch. The patient's dread of operations of any sort would not permit me to lay open the suppurating cavity, but the relief which galvanism gave to his painful face, neck and shoulder induced him to accept my proposition to apply electricity to it through a small opening. So then I punctured the overlying tissues with a bistoury and introduced an insulated steel needle attached to the negative pole of a 50-cell Barrett dry battery.

From this on, to February I, electrolysis was performed once a week, for ten minutes, with the anode on the neck behind the tumor and the kathode in it. During the seance the needle was pushed into and withdrawn from three places and the current interrupted with each withdrawal and gradually increased to the full strength of the battery with each puncture.

The disintegration of the growth was so rapid that in four

weeks it lost one-half in size. By this time the patient was able to take all kinds of food and gained much in strength and appearance.

On April 21 my notes say: Electrolysis has been performed once a week since the last note, with the needle inserted to a depth of one to two inches in different directions from the initial opening. During the last three weeks it has been apparent that a large portion of the tumor has been dissolved and has left in its place a cavity, for a probe can be pushed in to a depth of three inches and the point moved quite freely in all directions without obstruction. There has been a constant oozing of purulent fluid from the opening through which the needle is introduced. Although a number of large arteries are seen coursing over the surface of the tumor, indicating a free supply of blood, the electrolysis has never been followed by hemorrhage. The patient has taken no medicine except elixir of iron, strychnia and quinin.

June 12. Electricity was applied last on May 12, since which time he has passed through an attack of inflammatory rheumatism affecting the right wrist and shoulder.

August 8. The tumor is now the size of a hen's egg. The enlargement of the left lobe has disappeared entirely, and the trachea and larynx have returned to their normal positions. The voice and deglutition have become normal. The distended right carotid artery, which had been displaced backward and outward by the growth, has receded entirely out of sight. The circumference of his neck has been reduced from eighteen and one-half to fourteen and three-quarter inches, and he says it is about its natural size. His appetite is good, his strength and appearance improved, and he says he is in better health now than he has been for many years.

I saw him last on April 13, 1893, when he told me that he was enjoying good health and had resumed his work during the winter. There was then still a small opening over the remains of the tumor, from which a little blood-stained fluid oozed occasionally. He has since then died of what was reported as an affection of the heart.

The diagnosis of fibroid disease in the right lobe is confirmed by the rapid disintegration of the growth. The disappearance of the hypertrophy of the left lobe under the influence of local treatment of the other side would indicate that it was of a different character. It is not probable that it would have thus vanished if had it been of cystic or fibroid character. It was vascular or parenchymatous, or both. That these two types are often mixed, or at least indistinguishable is quite probable. The purely vascular can be differentiated from the other forms by its greater compressibility, and by its sudden decrease in size upon puncture with a needle. The latter feature was very marked in two cases in young women, which I treated with injections of carbolic acid.

In this case the choice of treatment lay between injection, the use of a seton and the method pursued, which was a combination of injection and electrolysis.

Electricity with antiseptic precautions, with a view of absorption of the morbid tissue would have been too slow. The necessity for rapid removal and relief, and the patient's objection to anything with the appearance of a surgical operation, decided against the seton on the one hand and antiseptic electrolysis on the other. Electricity was selected for its direct resolvent and destructive action on the tissues. It may be said that the suppurative process, which was undoubtedly started by one of the injections of carbolic acid, would have continued without the aid of galvanism, but my observation of that process under other conditions convinces me that it would not have been as speedy nor as safe. There would probably have been openings in several directions, with burrowing between the overlaying structures. This would have increased the danger of septic infection and constitutional irritation. With the use of the needle, one passage through the superficial tissues was kept patulous, and the destructive punctures made within the tumor all radiated from that passage, thus securing drainage in that direction, and in the greatest possible degree preventing it in other directions.

The same objections can be fairly urged against the seton, especially in the case of so large a growth. Two openings would have been necessary from the beginning; they could not have been kept as free from obstruction because of the presence of the seton itself; the destructive action could not have been directed at will to any particular part of the interior, and the wound could not have been kept so clean as was done with the use of the needle.

Aside from the time when the patient suffered with the grippe, and later with rheumatism, there was practically no constitutional irritation present.

The result was very satisfactory, and in my judgment was due to the use of galvanism.

Case 2—of goitre occurred in a woman aged 50; had been of slow growth, and affected the right lobe of the gland. The tumor was the size of a pullet's egg, with smooth surface, and so elastic that this feature, in connection with the fact that she had taken iodin for two months without benefit, led me to regard it as one of the cystic variety. Accordingly a medium-sized aspirator needle was plunged into it and the barrel of the syringe exhausted while the needle was slowly withdrawn. The result was the extraction of about two drachms of blood. The tumor was not compressible like the vascular growth, nor did the presence of the needle contract it momentarily. It must have been of a parenchymatous or mixed character.

One week later, and once a week thereafter for two months, galvano-puncture was applied, with a steel needle for the negative electrode, and from fifteen to twenty-five milliampères for five minutes, with antiseptic precautions. The sèances were not followed by any unpleasant reaction. At the end of the two months the tumor was reduced fully one-third in size, and harder to the touch. She was then advised to discontinue treatment, with the prospect of seeing further decrease in size.

Of coccydinia I have only two cases to report, not because I have not seen more, but because they are the only ones in which other and more convenient remedies failed. In my experience this disease has never appeared in the male, and in women could only be traced to rheumatism, lithiasis, uterine disease or derangement of the nervous system, and remedies suitable to these disorders were always tried before electricity, because the latter requires much more time on the part of both patient and physician, and consequently is more expensive and objectionable to both.

Case 1—presented itself in a lady of 20 years, who had been ill upward of a year with "pain in the lower end of the spine and soreness in the mouth of the womb," as she termed it. One attendant had given her Mitchell's rest treatment three months without benefit, and his successor had her wear a Sayre's plaster jacket eight months with equally poor effect. There was tenderness over the lower dorsal region of the spine, with the symptoms of spinal irritation, slight tenderness of the ovaries, excessive tenderness of the coccyx, and a peculiar and rare condition of the mucous membrane at the os vaginæ, which I had met only twice before, and have not yet seen described in print. The papillæ on the inner surface of the nymphæ were hypertrophied into the form of villi, so long that they could have been cut with scissors, and so excruciatingly sensitive that the least touch made her writhe with pain. Previous experience induced me to sear the whole affected area with a red-hot electric cautery knife. This remedy brought prompt and complete relief. Attention was next directed to the ovaries, to which galvanism, positive pole in the hands or on the nape and negative in vagina, was applied once a week, in association with bromid of potassium, arsenic, phosphorus and strychnia in succession. After six months' treatment her condition had improved very much. All the aches except that at the end of the spine had disappeared—the coccyx was still tender.

The galvanic treatment was now confined to the spine with the anode to nape and kathode over the coccyx, and applied by an assistant for two months without any apparent benefit. Then the most tender spot on the coccyx was sought and found and a steel needle attached to the kathode driven into it, and as strong a current as she could bear turned on for five minutes. At intervals of a week, two more punctures were made, and at her next visit for the fourth she reported herself well, and said the needle had cured her. Two years have elapsed since and she is still in good health.

The other case is of recent occurrence and is just about getting well after one month's galvanism with cotton-covered kathode over the coccyx and anode on the nape, which was preceded by two months' medication by her family physician. As the improvement is too recent to permit a positive opinion as to its permanence, only the progress of the cure thus far can be reported.

In the treatment of ulcers, I have used galvanism, as in goitre and coccydinia, only after other and less laborious methods had failed, and hence my experience embraces only a small number of cases, too few indeed to serve as a basis for generalization. Two of the cases, however, were so unique in character, and were so remarkably influenced

by galvanism that it seems desirable to report them:

Case 1—occurred in a young man who in June, 1892, in falling off a horse, dislocated the right hip. The injury was followed by paralysis of the muscles of the leg, and sensation in the foot and lower third of the leg. In the early part of last January he frosted this foot, and the frost bite led to ulceration of the heel, and several small areas on the sole. On the 8th of April he called on me for relief from the "weakness of the leg." There was then complete paralysis of the extensors of the foot and toes; while the muscles of the calf of the leg could be contracted just enough to produce visible motion of the foot. All the muscles were atrophied. Sensation was impaired over the foot and anterior surface of the leg. All the muscles of the leg presented the reaction of degeneration. On the sole near the heel there was an indolent ulcer the size of a dime, with overhanging edges. The capillary vessels in the skin of the outer aspect of the foot were dilated, giving the part a livid appearance from the heel to the small toe.

Galvanism was applied to the foot and leg, and the muscles gradually improved in response to the interruptions of the current. But the first marked improvement occurred in the chilblain on the outer surface of the foot. In the course of six weeks the dilatation of the capillaries disappeared, leaving the skin normal in color. During these weeks and for a month longer, various stimulating powders, salves and caustics were applied to the ulcer, and the edges pared several times, without salutary effect. Then galvanism, ten to fifteen milliampères, with the kathode on the sore, was applied twice a week for three minutes and all medication stopped. The third application brought very distinct improvement, and a month later the ulcer was closed. The muscles did not show a corresponding gain during this time, so then the healing of the sore can not be attributed to general improvement in the nutrition of the leg.

Case 2—was presented in an iron worker, a strong, healthy man, in St. Joseph's Hospital. He had been admitted with a burn of the second degree, covering the sacrum, buttocks and back of the thighs down to the knees, the result of a fall upon hot cinders. Two months and a half after admission he came under my observation, with a granulating surface seven and one-half by ten and one-half inches on each thigh. The ulcers had been dressed with petrolatum. The surfaces were elevated, the granulations exuberant, not abnormally sensitive to pressure, and the edges were indurated. Oxid of zinc ointment was applied to both ulcers for a week. Then a dozen small skin grafts were placed upon the left, and to the right galvanism was applied daily for a week and then on alternate days. The ulcer was covered with a piece of wet muslin and the ordinary sponge electrode pressed gently upon it, at first over the edges, and after they manifested improvement, over the whole surface. The strength of current was regulated by the patient's sensations, the desire being to avoid pain, and was continued ten minutes. After four applications the granulations along the edges were visibly reduced, and the bluish-gray line between them and the cicatricial tissue around them was widened. Two weeks later the ulcer was reduced to five and one-half by eight and one-half inches in size, while that of the other leg had made no notable progress, although the edges had been touched several times with lunar caustic. During these two weeks both sores were dressed with oxid of zinc ointment, and in every respect kept as nearly as possible under the same conditions.

The next week brought decided changes. The grafts on the left leg were then growing in every direction, so that the granulating surface was divided into strips and small patches between them, and markedly diminished in area, while in the other the healing process seemed to have been arrested. The surface of this ulcer became deeper red in color, sank to the level of the surrounding parts, was uneven and granular, abnormally dry, extremely sensitive to touch, and painful. It was then an irritable ulcer, and had been made so by over-stimulation with electricity. A week before these changes were noted, the patient stated that the resident physician was applying the electricity stronger than formerly, or at least it was more painful—so much so, indeed, that he could hardly bear it; and during this week he objected to its use each time. It was now ordered to be discontinued until after the subsidence of the irritation, but a few days thereafter his wife persuaded him to leave the Hospital, and so ended our observations.

In their etiologic relations the ulcers in these two cases represent two extremes; the one having been caused by excessive cold and the other by heat—two extremes which meet, and in the human body produce like pathologic conditions. Both were indolent, exhibiting deficient vitality and the proverbial intractability to treatment. One became irritable under a weak galvanic current from three to six acid, zinc carbon cells, while the other healed promptly under a current of fifteen to twenty-five ma. Such differences seem to indicate that the dose of electricity, as of drugs, can not be measured by any stiff rule or precise instrument, when given as a stimulant or sedative, but should be regulated by the patient's sensations.

This is confirmed by a limited number of observations of the effects of galvanism in chronic ulcers of the leg, so common in advanced life, which will be reported later. The best results were obtained when the current strength was kept just short of giving pain.

It may be said that the case of frost bite bore a stronger current without pain and irritation, because sensation in the foot was impaired, but such criticism would be incorrect, for sensation had improved by the time galvanism was applied to the ulcer, so that in other parts of the foot and leg the same current became painful after the electrodes were stationary for a few minutes. Then the impairment of susceptibility to the current was confined to the area of the ulcer, as indolence and irritation are in others which are uncomplicated by more central disturbance of the functions of implicated nerves, and consequently was a feature of its own character.

The favorable effect of galvanism in several cases of chronic eczematous ulcer of the skin seems to point to a large field of usefulness for this remedy in localized chronic eczema, especially in cases with infiltration and hardness of the tissues, for which Hebra's soap is now considered one of our best therapeutic agents.

DR. MARGARET A. CLEAVES of New York City, Instructor in Electro-Therapeutics, New York Post-Graduate Medical School and Hospital, read a paper on

METALLIC ELECTROLYSIS.

M. le Docteur Gautier, a distinguished French physician, and one of the Honorary Fellows of this Association, during the prst three years has called attention by his published experiments and clinical observations to the decomposition, at the positive pole, of medicated solutions in contact with diseased tissues, whereby there was obtained the local action of the drug thus newly born. To this method, Gautier has given the name of insterstitial electrolysis or medicamental electrolysis. Under the same nomenclature he now includes the use of soluble metallic electrodes. As interstitial or medicamental electrolysis deals with the use of binary compounds, such as iodid potassium, as well as soluble metallic electrodes, and as in this paper I shall only deal with the latter, I have preferred to use the term, "Metallic Electrolysis," a term for the invention of which I am indebted to Dr. W. J. Morton of New York.

By metallic electrolysis is meant a method which makes use of the chemic action of the positive pole both upon foreign substances—that is metals, such as copper, zinc and iron—and the tissues at the same time.

Prior to the observations of Gautier, M. Onimus [1] of Paris, and M. Prochovnick of Hamburg, among others worked with soluble metallic electrodes. Prochovnick [2] is recorded as having used 80 to 100 ma. with a copper sound, positive, in blennorrhagia of the uterine cervix. Three to six sittings were given. The gonococci disappeared, and the purulent discharge became serous.

Steavenson [3] very closely outlines the use of zinc in the conjoint work of Steavenson and Jones on "Medical Electricity," with the following paragraph: "If the electrode is made of zinc, chlorid of zinc is formed, which exerts its own specific action on the tissues, in addition to the oxidizing effect of the liberated oxygen."

But it is to Gautier we are indebted for systematizing this method into a scientific therapeutic measure. This he has done by a series of laboratory experiments and clinical observations, which have appeared from time to time in the *Revue Internationale D' Electrotherapie* during the past year, and which have also been embodied in his "Technique D' Electrotherapie." With two years' experience in the use of soluble metallic electrodes, Gautier [4] believes that the results will justify the confidence which he has in this form of electro-therapy.

A personal experience, extending over a period of twenty months, has demonstrated that in metallic electrolysis we

[1] Revue Internationale D' Electrotherapie. July, 1893.
[2] Gautier, Electro-Chemistry, Archives Gyn. Obst., and Pediatrics, August, 1891.
[3] Steavenson and Joues, Medical Electricity, page 367, Chapter XV.
[4] Revne, July, 1893.

possess a therapeutic measure of great activity, but I feel that we have only just begun to appreciate its value.

Ordinarily, in galvano-caustics, chemicals are manufactured by electrolysis out of the tissues themselves—at the positive pole, acids; at the negative, alkalies—which are in turn directed against diseased states. In metallic electrolysis, however, there are formed certain new salts which are utilized in the treatment of disease.

The following laboratory experiments of Gautier[5] form the basis for this method of treatment.

In making a study of the electrolytic reactions effected by contact of the positive pole with a pure stick of red copper, the subject was considered from two points of view: one was as to the production of a copper salt, and its nature; the other, its action on the living tissues.

To establish the one and elucidate the other, the following experiments were made in connection with M. Favier, a distinguished chemist attached to L' Ecole Polytechnique de Paris:

First, experiments were made to show that there was an actual decrease in weight of the copper electrodes. Two copper needles, "A" and "B," were carefully weighed by means of the most delicate optical balances. A weighed O gr. 34912; B weighed O gr. 34645. The needles were then thrust into the muscles of a rabbit's leg, attached to the positive pole of the battery, and a current of 5 ma. passed for ten minutes. They were then withdrawn, carefully wiped with filter paper, and weighed again. The first, "A," was found to weigh O gr. 34900; the second, "B," was found to weigh O gr. 34625, showing a loss for "A" of O gr. 00012, and for "B" of O. gr. 00020. This loss represented the exact amount of copper deposited in the muscles of the rabbit.

Experiments were next made to prove whether the salts thus deposited were toxic. As the serous fluids are composed half of chlorids of sodium and potassium, a 1 to 2 per cent. solution of artificial chlorid of sodium was made, and subjected to electrolysis, using copper as the positive electrode.

There was obtained as a result, an oxychlorid of copper, insoluble in water. This in turn, was placed in suspension in water, in the proportion of 1 to 2 per cent. and these latter solutions were used for intra-muscular injections in three rabbits.

In the first experiment, one cubic centimeter with 1 per cent. of the oxychlorid of copper was injected. No symptoms of intoxication were noticed in the three animals, and three days later, ten cubic centimeters of the same solution were injected. The animals remained normal. Subsequently, a third experiment was made with three cubic centimeters of the solution. Two months later there was no change whatever in the animals.

Next, in order to find out the nature of the copper salt produced in contact with the tissues. a current of 10 ma. was passed into a solution of sodium chlorid with copper for the anode. The copper used was from galvanic deposits, and its purity assured. After the circuit was closed, a green deposit was seen forming around the positive pole. This precipitate, washed and dried, became black at 110 degrees C., and analysis showed that it corresponded to the formula, Cu Cl 2Cu O. This was the same salt formed when muscular tissues or mucous membrane were submitted to the action of a copper anode.

Next, experiments were made to show the action of this copper salt upon the uterus of a rabbit. The experiments were made upon a rabbit six days after delivery.

Forty intra-uterine applications were made. The sittings were at intervals of three days, and were ten minutes in length, with five minutes for reversal of the poles. The current strength was 20 ma.

After the forty applications, the uterus and ovaries were removed without killing the animal. No lesion whatever was discovered. There was no congestion; the mucous membrane lining the cavity was soft and white, and the orifices normally dilated. After making these microscopic observations, a similar application to the preceding, was made upon the removed uterus, and after half an hour's interval it was demonstrated that there was, 1, an appreciable deposit of copper salt on the entire surface of the mucous membrane; 2, complete penetration of these salts into the tissues, the green color being apparent both internally and externally; 3, there was found one salt, oxychlorid of copper, which was insoluble, and another, an organo-metallic salt which was soluble.

Experiments were then made to establish the comparative microbicidal action of the oxychlorid of copper and the positive pole of the constant current with an unoxidizable electrode.

The bacillus *pyogeneous* was subjected to the action of the positive pole. It was found that while a C.S. of from 130 to 180 ma. was sufficient to attenuate after forty-eight hours the bacillus of anthrax, a current of 200 ma. applied for five minutes gave no appreciable results with the pus bacillus. On the other hand, the oxychlorid of copper at the positive pole influenced strongly after seven minutes the pus bacillus in its pigment-secreting function, and feebly in its multiplication. After a quarter of an hour with 40 ma. the function was totally suppressed, and life was almost extinct.

These experiments show conclusively that the copper salt is much more effective in its action upon the bacilli than the galvano-caustic method.

Additional observations were made to show the difference upon the uterine mucous membrane of the action of the positive pole with a platinum electrode and with one of copper.

In the first instance, with the platinum electrode, and a C.S. of 50 ma. it was found that in the uterus of a rabbit, the mucous membrane became congested, and that the positive pole was surrounded by dilated vessels, which failed to contribute to the work of reparation, and gave place to a retractile cicatrix. This polar property of the current is associated with a contemporaneous intra-polar action, concurring secondarily to the same end. The atresia to which the tissues are subjected by the chemic action serves to arrest the hemorrhage. On repeating the same experiment, however, with a copper electrode, and the same current strength, and duration of application, there could be found on a level with the soluble copper electrode no traces of destruction, or of inflammation in the vicinity. The mucous membrane was soft, infiltrated in its entire surface and profound depths with this new apple-green colored salt, the oxychlorid of copper.

In metallic electrolysis, the properties of the current which are constantly active are the electrolytic and the cataphoric.

So far as conductivity is concerned, the human body may be regarded as a 2 per cent. solution of sodium chlorid. By electrolysis of the tissues in contact with the positive pole, there are set free oxygen, acids and chlorin. These, in turn, attack the soluble metallic electrode, whether sound or needle, and we have formed as a result, an oxychlorid of copper, zinc or iron, as the case may be.

But no less important is the cataphoric property of the current, which after the formation of the salt electrolytically, causes it to penetrate the tissues rapidly in a zone around the sound or needle to a greater or less extent, according to the C.S. and duration of application. This is exceedingly easy of demonstration with either a piece of meat or a hard boiled egg into whose substance a copper needle has been thrust. This needle is attached to the positive pole, while a steel or platinum needle attached to the negative pole completes the circuit. A current of 40 ma. for five minutes will cause a diffusion of the copper salt to a distance of one-third of an inch in every direction from the needle.

(To be Continued.)

[5] Technique D' Electrotherapie, Gautier et Larat, page 169.

CORRESPONDENCE.

As to "Nostrum" Advertisements in The Journal.[1]

To the Editor:—About a month ago, I addressed you a letter replying to one of your editorial articles. As that letter has not yet been printed and as I have not heard further in reply to my query concerning it, than that search would be made, I presume it has been lost, and I therefore beg to again communicate its substance, in the hope that it will receive an early insertion, together with this preface explanatory of its apparent tardiness. I wrote at first and again write because I desire to see the JOURNAL a perfect representative of the best in American medicine.

In your editorial you animadverted on the fact that some of your Eastern cotemporaries "lectured" the JOURNAL on the sale of its advertising columns to nostrums, and you replied that, 1, there was an attempt to make a difference

[1] Published by order of the Trustees.

between a "physicians' journal" and a "publishers' journal," which you thought unfair; and 2, that no one had ventured to explicitly name the objectionable advertisements.

At this lapse of time I have had to repeat your argument as above, in order to make my answer intelligible.

While I have no concern in the question between you and your cotemporaries as to which is "pot" and which "kettle," and whether or not the etiquette that should prevail among culinary utensils has been violated by cries of "Blacky" from a soot-covered vessel, I have very much concern with the main issue, and on it I beg to respectfully differ with you in both your contentions.

1. Is a "physicians' journal" bound by more stringent rules than a "publishers' journal?"

Let me answer this by an apt illustration: At the time I brought to the attention of the Philadelphia County Medical Society the question of nostrum advertising in medical journals, I had some correspondence on the subject with a friend, an honorable gentleman, a member of a well-known publishing house. His answer to my request that his house should decline nostrum advertising was about as follows: "So long as the journal of which you are part owner sets the example of receiving such advertisements, you have no grounds on which to criticise us. When THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION declines to advertise secret preparations, we will likewise take the matter into consideration."

So you see, there is a very important difference between a physicians' journal" and a "publishers' journal." I am "part owner," to quote my friend, and every other member os the AMERICAN MEDICAL ASSOCIATION is likewise "part owner" of a journal which persists in a course of conduct that we believe to be wrong and that we seek to prevent in others. Our reform must "begin at home."

But even if this argument were not so forcible, there is one that you have persistently ignored. The Code of Ethics, which is not yet repealed, and which will not, I trust, be repealed, prohibits not only the use of nostrums by physicians, but *any action that tends to increase their use.* Surely, advertising them "tends to increase their use!" Were it otherwise, the "enterprising proprietors" would not waste their money on advertisements.

Furthermore, even if you ignore this special provision of the Code, there is the resolution adopted at the instance of the Medical Society of the State of Pennsylvania at the Detroit meeting of the AMERICAN MEDICAL ASSOCIATION, which expressly forbids the Trustees of the JOURNAL from advertising secret preparations.

The ingenious evasion by which the Trustees have sought to nullify this resolution, and which they must be aware is only laughed at by intelligent men, does more credit to their acuteness than to their straightforwardness. Nor does the fact that their action was passed over in silence at the Milwaukee meeting, render it any the less blameworthy. The fact apparently is that the Trustees have deliberately decided to disobey not only the spirit but the letter of the Code and of the Detroit resolution. They do not even "keep the word of promise to the ear, to break it to the hope," but break it to ear and hope alike. On the surface, their action seems to highly deserve a vote of censure; I will be very glad to learn that there is some justification for it, not apparent. If it be said that without the money received for this prostitution the JOURNAL could not exist, it would be very difficult to answer such a plea in respectful terms. I have no doubt that you can elicit a similar plea from nearly every strumpet. We can pity the strumpet, but surely the JOURNAL does not wish to be an object of pity!

2. Has no one explicitly pointed out the objectionable advertisements?

A number of them were mentioned in my paper before the Philadelphia County Medical Society, "Shall Physicians become Sales-Agents for Patent Medicines?" which was reprinted in the JOURNAL, and editorially commented upon. The *Pittsburg Medical Review* has frequently named them. In my letter mislaid by you I ventured to give you another list. In this communication I will content myself with naming only one—the one which is very properly headed "An Affront to the Medical Profession." But you need no other rule than that of the Code—which makes *secrecy* the sign and test of a nostrum. Yours very truly,

SOLOMON SOLIS-COHEN.

The Prevention of Pauperism.

OTTAWA, OHIO, January 8, 1894.

To the Editor:—Dr. Bryant's paper is to the point and timely, but he does not prescribe the right remedy, in my opinion. And I am sorry to see so many eminent and erudite men, in the discussion of his paper, laboring under the same delusion—*educate them to labor.*

My experience and observation corroborates Dr. Lloyd. The early settlers of this country were not paupers, but the introduction of a foreign element diseased with crime, immorality, etc., has given issue to not only paupers, but criminals. The inter-marriage of criminals and paupers not only begat criminals and paupers, but it has a contagious effect upon others not strongly endowed with energy and self-protection.

Not to give a lengthy dissertation of my convictions, I would castrate every male and female who proved non-self-supporting, caused by their own vicious habits, be such a character or habit acquired or hereditary; after a final judgment rendered by an expert jury of twelve free-born American citizens. Further, I would recommend the same punishment, if it could be so classified, for crimes, as homicide and grand larceny. I am morally sure, if such were the laws, three to five generations hence, jails and penitentiaries as well as almshouses would be of the past, and remembered only as monuments of the world's ignorance in the selection of the fittest, as we now remember the Spanish Inquisitons, or of the burning of witches at Salem.

C. E. BEARDSLEY, M.D.

Dr. Howle Replies to Dr. Lewis.

"How to manage criminals"—Howle. "How to encourage criminals."—Lewis.

Doctors are better judges of disease than are laymen but not necessarily better versed in criminal law. I did not "define crime" because it was unnecessary. Your definition of criminal is incorrect by having "knowingly" inserted. I had no intention to defame our law-makers. I approve of "laws made by majorities." A "riot" may result in great good but to say that a "riot is lawful" is a contradiction of terms. I do not believe that the "absence of all human laws" "would destroy all force," nor do I believe that "law causes riot and justifies stealing," but I do believe that the object of the law is to "prohibit riot and other crimes." "Being imperfect in organization and training" would not be a satisfactory excuse for crime. "Malformation of the brain" is difficult to diagnose in a strong *healthy* criminal. The "inability to adjust one's self in complete harmony with his surroundings" is a calamity that befalls most of the human race, but is not necessarily criminal. The word "fad" may not be euphonious nor a "philological" success, but it is very expressive and easily understood. "Emotional outburst of fury" is oftener met with in the criminal than in the judge.

"Judicial revenge" is another contradiction of terms. Jokes aside, Doctor, the JOURNAL is not the place to discuss politics. If you really believe that "crime is the result of disease," say so, but don't poke fun at me.

Respectfully, W. P. HOWLE, M.D.

NECROLOGY.

Thos. B. Wheeler, M.D., Chicago, January 11.

Dr. Patton of Silver Cliff, Col., January 2.

W. T. Bowker, M.D., of Kansas City, January 9.

Joseph Lee, M.D., Roseville, Ill., December 23.

R. S. Harvey, M.D., Spokane Falls, Wash., January 9.

Melville Bryant, M.D., of Brooklyn, N. Y., December 24.

J. H. Blue, M.D., of Montgomery, Ala., January 8, in New York.

David Wilson, M.D., Robinson, Ill., January 11. He was over 80 years of age and left an estate of over $130,000.

George Adam, M.D., who died at Canaan, Conn., last week, aged 81 years, was born and lived under the same roof all his life.

Alexander Stewart, M.D., died at Shippensburg, Pa., December 6, from pneumonia, aged 84 years. He was for twenty-one years President of the First National Bank of that place.

O. A. Willard, M.D., Lowell, Mass., January 7. He was 28 years of age and a graduate of Bellevue Hospital Medical College, N. Y. He was a member of the Middlesex Medical Society.

C. E. Tupper, M.D., formerly Superintendent of the Toledo Ohio Asylum for the Insane died January 10. He was at one time director of the Dayton Insane Asylum and for many years a Pension Examiner in Putnam County.

Lucius A. Smith, M.D., Brooklyn, N. Y., January 5. He was born in Connecticut, July 11, 1831. He was graduated at the Medical Department of Yale College in 1852. He was subsequently Assistant Physician at the State Asylum for the Insane at Hartford. Of late years his attention had been given to marine architecture.

George Schloetzer, M.D., died on December 5, at Carlsruhe Germany. He was a graduate of the University of Bonn, and for many years a resident of Chicago. When the Eightieth Regiment of Illinois Volunteers (Col. Hecker's) was organized he was appointed Surgeon, and served in that capacity during the war. In 1870 he succeeded Dr. Wagner as a member of the Chicago Board of Health.

Jas. R. Freeman, M.D., Exalted Ruler of the Minneapolis Lodge of Elks, and one of the best known and most popular residents of that city, died of pneumonia January 4. Dr. Freeman was born in Biddeford, Me., and was 38 years of age at the time of his death. He was graduated from Dartmouth College with honors, and afterwards studied medicine, removing to Minneapolis about eleven years ago, where he has since resided.

Wm. L. Leonard, M.D., Winterset, Iowa, December 19. He was a graduate of Ohio Medical College, 1852, and later of Jefferson Medical College. He was Assistant Surgeon Thirty-ninth Iowa Volunteers 1862, and in 1863 Surgeon of Seventh Illinois Volunteer Infantry, and for a time served on General Dodge's staff. He was a member of the Madison County (Iowa) Medical Association and of the Iowa State Medical Society. He was an active Mason and a Presbyterian.

Jas. F. Gayley, M.D., died at Philadelphia January 9, in the seventy-sixth year of his age. He graduated at the University of Pennsylvania in 1848, and continued in the practice of his profession until a short period before his death, enjoying during that time the warmest confidence of a large *clientele* of families in all ranks of life. He was the author of a history of the Medical Department of the Jefferson College, and also contributed to many medical journals during his career. He was a leading member of the Presbyterian Church, a kind and sympathetic physician, and his loss will be mourned by all who knew him, not alone for his skill, but for his charity, his attention to the suffering, and his deep religious fervor,

David Raymond Fox, M.D., aged seventy-one years and two months, died at his residence at Jesuits Bend, La., Dec. 29, 1893.

Dr. Fox was born Oct. 14, 1822, at Woodville, Miss., and was the third son of the Rev. Jas. A. Fox and Sarah Otis. He received his education at home, under private tutors, and in 1842 entered the medical department of the University of Louisiana, graduating March, 1845. He at once began the practice of his profession, first locating in Warren County, Miss. During the summer of 1847, he spent several months at Dead-man's Bend, Concordia Parish, La., where he treated the cholera of that year.

The following season he was engaged as Surgeon on board the S. S. *Pacific* plying between New Orleans and Central America, where he acquired much experience in the treatment of tropical fevers. In 1852, he located in the parish of Plaquemines, La., where he has since remained.

He has always been an active member of his profession, being one of the founders of the Louisiana State Medical Society, in which he has taken an active interest, serving several times as Vice-President, and once as President in 1886, at the annual meeting held at Alexandria, La. In 1887, he served as Vice-President of the Ninth International Medical Congress held at Washington, D. C. He has always been an interested member of the AMERICAN MEDICAL ASSOCIATION, and a liberal contributor to medical literature.

A loving father, a devoted husband, a beloved and skilful physician, he leaves a bereaved family and a host of friends to mourn his loss. T. B. F., in *New Orleans Picayune*, December 30.

Charles Gilman Smith, M.D. of Chicago, died January 10. Dr. Smith was born at Exeter, N. H., Jan. 4, 1828. At 16 he passed the examination at Harvard College, and was accepted as a sophomore, graduating in 1847 in the literary department. Soon after he began the study of medicine in his native town, taking his first course of lectures at the Harvard Medical School in 1848–49. Afterwards he went to Philadelphia and continued his studies at the University of Pennsylvania, from which he graduated in 1851. He then went to Boston, where for two years he was Attending Physician at the Almshouse Hospital. In February, 1853, he came to Chicago, and began what soon developed into a highly prosperous and successful practice. During the war he was one of the six physicians placed in charge of the prisoners at Camp Douglas in this city. In 1868 Dr. Smith went abroad to study in the hospitals of France, Germany, and England. On his return he lectured in the Woman's Medical College for some time. He was next made Consulting Physician at the Women's and Children's Hospital and at the Presbyterian Hospital. He was also a Trustee for several years for the Peck Home for Incurables, in which he took an active interest. Dr. Smith, in addition to his private practice, served a number of the more important insurance companies as their examining physician, a line in which he had an extensive experience.

Dr. Smith had a wide acquaintance among men of letters and enjoyed the confidence of many noted authors, being a personal friend of Oliver Wendell Holmes. He was President of the Harvard club and of the Chicago Literary club. He was an excellent presiding officer, and one of the best toastmasters in the city. Dr. Smith was married in 1873 to Harriet G., youngest daughter of Erastus F. Gaylord of Cleveland, O., who, with a sister, Miss Elizabeth Smith of Exeter, N. H., survives him.

He was Chairman of the Committee of Arrangements for the ASSOCIATION meeting held in Chicago in 1887.

Ralph Lesslie, M.D., of Toronto, December 20, on the Island of Dominica. He was a graduate of the University of Toronto, and had a romantic history; served as Surgeon-Major with the Turkish army during the Servian war, and was present at the siege and capture of Alexinatz; accompanied the victorious army on its march from Alexinatz to the Danube across the Balkan Mountains.

During the Russo-Turkish war served with the Red-Cross ambulance attached to Dervish Pasha's army covering Batoum, where he saw some hard fighting, and with his colleague, Surgeon Hope, accompanied the attacking column on one occasion, attending the wounded under heavy rifle fire. For the services they rendered in this battle they were publicly thanked by Field Marshal Dervish Pasha and recommended for the Order of the Medjidie, which they afterward received.

After two months' services in the Georgian Mountains, and witnessing various unimportant skirmishes, Dr. Lesslie was ordered to Kars and rode from Trebizond to Erzeroum over the road by which the 10,000 Greeks retreated. At Erzeroum he received orders to return to Constantinople, whence he was again ordered to the front to join the army of the Shipka Pass, where he again saw hard fighting and rendered good service. Thence he was sent to join the army for the relief of Plevna and was present at the battles of the Kamarli Pass and Taskeshan, where Baker Pasha, with a small force, kept Gourko's army at bay until the retreat of the Turkish army was secured.

From Taskeshan he accompanied Suliman's army on its memorable retreat, in the depth of winter, across the Rhodope Balkans to the Ægean Sea, and finding the medical service of the army disorganized, attached himself to the rear guard and attended the wounded under fire during three of the actions in which the rear guard was engaged.

At the close of the war Dr. Lesslie was appointed medical officer to the Turkish Compassionate Fund (organized by the Baroness Burdett-Coutts), and for three months was in medical charge of 7,000 refugees in the mosques of St. Sophia and Sultan Achmet. He afterward served with the English army during the Zulu war, but was not present at any of the engagements. He accompanied Clarke's column on its march to Ulandi and return to the coast, and was attached to Major Martyr's party of dragoons during the first portion of their chase after Cetewayo.

For the next two years he held resident hospital appointments in London and Trinidad, and after a visit to India, China and Australia, went to the Congo with Major-Gen. Sir F. Goldschmid on a special mission for the King of the Belgians. On his return to Europe he was thanked by the King for his services and was sent out to Africa again with Sir F. de Winton as principal medical officer of the Congo Free State.

After two years' of traveling and hard work in the heart of cannibal Africa, varied by occasional fighting with hostile natives on the Upper Congo and its tributary, the Kasai, Dr. Lesslie was again thanked by the King for his services and personally decorated by His Majesty with the Order of Leopold. A year later he received the Congo Star, an order instituted by the King to reward special service in Africa.

After five months' study in Berlin, and seven months' travel in Italy and Austria in medical charge of Sir R. Burton, the great traveler and orientalist, he went for a tour around the world, visiting India, Siam, China and Japan en route. He afterward visited Chili, in South America, and made a voyage up the Amazon.

PUBLIC HEALTH.

Measles.—The epidemic of measles is prevailing in New York.

Smallpox at Reading, Pa.—It is announced that for the first time in eleven months no smallpox signs are to be seen, although there are still a few cases in the hospital.

Diphtheria.—Recently the remains of a patient that had died of diphtheria was taken into a church at Buffalo. The undertaker opened the coffin so as to give an opportunity to see it. Since, seven have died of the disease as the result of this exposure.

International Sanitary Congress.—The President has appointed Edward O. Shakespeare of Philadelphia, Stephen Smith of New York, and Preston H. Bailhache, M. H. S., as delegates to represent the United States at the International Sanitary Congress, which meets in Paris January 24.

Department of Public Health.—The Ramsay County (St. Paul) Medical Society at their monthly meeting held January 7 recommended the establishment of a Department of Public Health. They urge the bringing of that department on a footing with other Departments, with a Secretary at its head who shall be a member of the President's Cabinet.

Lecture by Surgeon General Sternberg.—A course of lectures to be given under the auspices of the Sanitary League of Washington, D. C., was commenced January 8 by Dr. Sternberg, the Surgeon General of the Army. The subject of the discourse was disease germs, the object of the lecturer being to show to his audience how easy it is to prevent the spread of certain dangerous diseases when they fasten on a household or neighborhood. Photographs of pathogenic micrococci, bacilli and spirilli were thrown on the screen to illustrate his remarks. Moist heat in the form of steam or hot water was represented as the best germ killer or disinfectant. Boiling was a sure germicide; at 212 degrees F. all spores perish. A heat of 140 degrees F., continued for ten minutes suffices to give safety, but it is better to increase the heat and prolong its duration. Milk, water or soup that has recently been boiled is free from infection but if allowed to stand for some time in the vicinity of danger, germs may alight upon it and breed with amazing rapidity. The germs of cholera and fevers multiply wonderfully in milk and soups. Articles of food are often infected through the instrumentality of flies. These alight on contaminated surfaces and their feet become soiled with germs which are afterwards transferred to substances prepared for table use. Sunlight is deadly to germs. Those of cholera are unable to resist an exposure of three or four hours to the rays of the sun. Drying, also, is efficient against cholera; but desiccation will not destroy the germs of consumption, diphtheria or typhoid fever, which are capable of living for months in the dried state. Lime wash or common whitewash is valuable as a disinfectant. It destroys the germs in the excretions of cholera patients. A solution of carbolic acid, five parts in a hundred parts of water, is also a good disinfectant for excreta. The products of coal tar are new and valuable agents for the same purpose. Little boxes of chlorid of lime, (bleaching powder), hermetically sealed and quickly used after being opened are suitable as a disinfectant for household use. Six ounces of the powder in a gallon of water makes an excellent disinfectant solution, but it must be used shortly after it is prepared as exposure to the air destroys its efficiency. Burning is the best method of disposing of expectorated matters. The germs of cholera and typhoid fever in the excreta and of influenza, diphtheria, pneumonia and consumption in the expectorations can be destroyed easily; but as regards the eruptive fevers, the germs of which are not fully identified, the only sure method of dealing with infected matters such as soiled clothing and exfoliations from the surface of the body is to burn them.

Minnesota State Board of Health.—The new State Board of Health met at the Governor's office January 9 to organize under the new law. The members were all present, as follows: Doctors Perry H. Millard, St. Paul; Charles N. Hewitt, Red Wing; Franklin Staples, Winona; C. F. McComb,

Duluth; K. Hoegh, Minneapolis; W. J. Mayo, Rochester; W. H. Leonard, Minneapolis; Edward Boeckman, St. Paul; W. L. Beebe, St. Cloud.

The report of the Secretary, Dr. Charles N. Hewitt, as being the report of a board now passing out of existence, was made very comprehensive, and covered practically the history of the Health Service during its twenty-two years of existence. The methods of coöperation now pursued by the State and local boards of health are the result of ten years of trial of different methods and of legislation gradually adopted. In 1885 the Service was given charge of infectious diseases of domestic animals, the control of offensive trades and the oversight of water supplies. In 1887 monthly collection of statistics of births and deaths was made obligatory, and the secretary of the State Board became registrar of vital statistics. The Service consists numerically of the State Board and 1,638 local boards. The entire population of the State, except in a few sparsely settled districts, is now provided with local sanitary service. There are in the Service 232 physicians serving as health officers. In many cases chairmen or clerks of township boards represent the service, and 70 per cent. of the reports of infectious diseases come from them.

Dr. Hewitt says that the time has come for the recognition of public health as a subject of instruction in educational institutions, and that it should be provided for at the normal schools by lectures and laboratory work. Dr. Hewitt has devoted a good deal of time and study to the culture of virus for vaccination. He uses the calf lymph produced by the London Board of Health. Since he introduced it it has been used in over 7,000 cases in the State.

After the reading of Dr. Hewitt's report came the election of a president and secretary. Dr. Staples as President and Dr. Hewitt as Secretary were reëlected for the present year.

Meeting of State Board of Health, Lansing, Jan. 12, 1894.—The State Board of Health held its regular meeting at its office in the Capitol, Jan. 12, 1894. The meeting was called to order by President Frank Wells of Lansing; Dr. Gray of Pontiac, Prof. Fall of Albion and Dr. Baker were present. The regular business of auditing of bills and accounts was transacted.

Prof. Delos Fall of Albion, Committee on Water Supply and Purification of Sewage-contaminated Water, made a preliminary report. Prof. Fall has undertaken an analysis of the uncontaminated spring waters throughout Michigan in order to ascertain the normal amount of chlorin. Ten parts per million has been considered the maximum amount of chlorin which should be found in good spring water, but he thinks that the standard will have to be raised somewhat for Michigan, as most of the samples that he has examined contain over ten parts of chlorin per million of water. Prof. Fall proposes to continue this analysis of spring waters, and would be glad to get samples of such spring water as is not contaminated by leachings from barns, stables, residences, etc. He wants a half-pint of such water in a perfectly clean bottle, with a new cork, with reliable statement of source and surrounding conditions. His address is, Prof. Delos Fall, Albion, Mich. The State Board voted to aid Prof. Fall in his work, and his report will be looked for with interest, as it will supply a standard by which to judge of the extent of sewage contamination of waters hereafter examined chemically.

The Secretary presented an invitation from the leading citizens of Menominee for the State Board to hold one of its Sanitary Conventions in that city. The Board will accept the invitation, and appointed Prof. Fall a committee to make arrangements for such a convention.

The subject of the further continuance of the Michigan inspection of immigrants was discussed. Secretary Baker thought that the Michigan inspection of immigrants which has been in progress for some time has done much to prevent the introduction and spread of dangerous communicable diseases. He also thought that the stand the Michigan State Board had taken had been the means of raising the standard of quarantine in this country, tending as it has toward the disinfection of the baggage of all immigrants coming into this country. It is not improbable that the inspection at the border has been the means of keeping Michigan free from smallpox, and it is probable that it has lessened the introduction of other diseases. The Michigan inspection rules for disinfection were carried out during the summer at Levis, near Quebec, and are now being carried out at Halifax, under the direction of Dr. Wickwire, Port Health Officer at Halifax. Smallpox is now quite prevalent in several States, but it is hoped that Michigan will not be visited by this disease. Owing to the depression in mining, lumbering and other business, immigration will probably be much lessened. The recent judicial decision was discussed, and a resolution adopted as follows:

"*Resolved*, That in view of the adverse decision of the Hon. Joseph H. Steere of the Eleventh Judicial Circuit, declaring the penalty portion of the Michigan Quarantine Law unconstitutional, the immigrant inspection at the Michigan border is hereby suspended from and after Jan. 13, 1894."

It is understood that legal measures have been taken to obtain a decision on the subject by the Supreme Court.

The Secretary presented a letter from Supt. Clarke of the School for the Deaf, at Flint, in which Mr. Clarke requested the State Board to send an expert to aid the local physicians in stamping out the outbreak of scarlet fever in that institution. The Board voted to send an expert.

Secretary Baker had received an invitation to read a paper before the Wayne County Medical Society on the "Prevention of Pulmonary Tuberculosis or Consumption as a Disease Dangerous to the Public Health." In view of the recent action on this subject by the State Board, and the proposed coöperation of the Detroit Board of Health in the same direction, the State Board requested the Secretary to accept the invitation.

The subject of a Chair of Sanitary Science at the State Normal School, and at the State Agricultural College, was presented by Dr. Baker. He mentioned that the State Board of Agriculture had already been memorialized by the President and other members of this Board and himself, to establish a chair of hygiene; but he thought the Board as a whole should continue to exert influence. He argued that the State law compelled the common schools of Michigan to devote time to the teaching of hygiene, but that there was not much provision for the proper education of those teachers who are compelled to teach hygiene. The State Normal School is devoted to the training and education of teachers, and the State Agricultural College has its vacation in the winter in order that its students may teach, yet neither of these institutions has a Chair of Sanitary Science. The State Board of Health had already put forth its efforts for such a chair at the Michigan University, and a Laboratory of Hygiene had been established and is now doing great good. Dr. Baker thought that the youngest pupil in our schools should have an idea of how the most dangerous communicable diseases are spread, and that it would be just as practicable to teach them the restrictive measures, as it is to teach them all about the bones, muscles and nerves, as is now attempted. Each pupil should also know just what disease causes most deaths in Michigan and just how it may be prevented or avoided. But how are these pupils to be taught such subjects, when there is practically no adequate provision for the education of the teachers? Prof. Fall said he was very glad to say that Albion College was teaching sanitary science. A large class of the best students in the College have this course of training.

On motion of Prof. Fall, the Board voted that a committee of three be appointed by the President to memorialize the State Board of Education to establish a chair of sanitary science at the State Normal School. Prof. Fall of Albion, Dr. Baker and Dr. Milner of Grand Rapids were appointed to act as this committee.

On motion of Dr. Baker, it was voted that Dr. Gray of Pontiac act as chairman of a committee to memorialize the State Board of Agriculture to establish a chair of sanitary science at the State Agricultural College. It was also voted that President Wells and Prof. Vaughan of the University be the other members of this committee.

Considerable other business was transacted, and the Board adjourned at a very late hour.

MISCELLANY.

Philadelphia Notes.

An exceptionally mild winter thus far has prevailed in this section of the country, which, though doubtless a great boon to the poor, is regarded as of questionable benefit to the entire community; since the general impression is that the prevailing humidity is in some way etiologically related to the present epidemic of influenza, or epidemic catarrhal fever. A twelvemonth ago, we had the coldest January on record for over twenty years in this locality; but this year, no evidence of cold weather is yet to be seen in the streets, and fears are expressed of an ice famine next summer. The first week of the new year showed an increase in the city mortality, directly due to grip and its results. Thus, there were 63 deaths specifically charged to this disease, besides 109 of pneumonia, and 39 of heart disorders, which were also ascribed to the grip. While the total number of deaths from all causes during this week was 613, an increase of 3 since the preceding week, and of 63 as compared with the same week of last year, there was a decrease of 40 from the rate of the same week of the year 1891, when the present epidemic began. Of the total number above stated, 188 were children under five years of age. There is also a moderate increase in the mortality from diphtheria, scarlatina and typhoid fever, which, however, are not prevailing in epidemic form. There were no deaths during this period from smallpox or typhus, and no cases of these forms of zymotic disease are now believed to be present in the city. It may be of interest to note that, during the first week after the holidays, 22 persons died of old age in Philadelphia. No epidemic of senility, however, is anticipated.

Several cases of acute, confusional insanity accompanying or due to influenza have been recently reported. One case was a medical student at Jefferson College who became violently insane during an attack of influenza and had to be removed to Jefferson Hospital. Some cases have delusions with homicidal tendencies. Thus, a professor in the High School, while suffering from what was thought to be a mild attack of grip, escaped from his room at night, and climbing by means of a veranda into a neighbor's house, he there created much excitement by flourishing a big knife and threatening to kill the neighbor, who he thought had abducted his wife. He finally came into the hands of the police, who required much explanation before they would believe that no crime had been committed, and the escapade nearly cost the patient his life. In another case the result was even more tragical, but the agency of the grip in its causation is less manifest. Professor Shortlidge until recently was the Principal of a well-known academy for boys at Media, near this city. He had been depressed by financial troubles and by an attack of grip, and had recently given evidences of some mental alienation with suicidal tendency. On New Year's day, he walked out of the house and his wife (to whom he had been recently married, having been a widower for years), went after him to bring him back. Pistol shots were heard, and the first to arrive at the grove where the occurrence took place, found Mrs. Shortlidge on the ground, dying from several wounds, and her husband leaning over her with the recently discharged pistol in his hand. He was taken to the jail, constantly asking for his wife, and only occasionally realizing for a brief moment the awful nature of the deed that he had committed. A Commission in Lunacy, consisting of Drs. Chas. K. Mills and Dr. Chas. S. Trumbull, is now investigating his mental condition, but there is no one entertains a doubt as to the result of their examination. There is a question, however, as to whether this could be properly charged to the account of the grip or not, since the patient had made a railway journey to this city a few days before, in order to purchase the pistol, which he had kept secreted until he used it with such fatal effect. This does not look like the delirium of an acute disease, but more like homicidal insanity, in producing which the depressing effects of grip may have been an incidental factor.

Last fall, a ship came to this port from India, manned entirely by Lascars, a number of whom were sick with a disease which Port Physician Brenning pronounced beriberi. Several deaths occurred from the disease during the voyage. About a dozen of the sick were taken to the hospital and isolated and the ship quarantined. No further deaths occurred and no new cases developed. It is believed that this is the first time that this disease has been recocnized in this city.

The annual meeting of the College of Physicians for the election of officers was held January 3. Dr. S. Weir Mitchell was rëelected President. Dr. I. Minis Hays has resigned from the Library Committee. Dr. Frederick P. Henry is Honorary Librarian.

The County Medical Society will hold its election next week, but as there is no other nomination for President, Dr. De Forrest Willard will be unanimously reëlected to this office. Dr. Willard has just finished a very valuable course of lectures on the "Mütter Foundation on the Surgical Pathology and Surgery of the Spinal Cord," at the College of Physicians.

Prof. J. M. Da Costa, who has just recovered from an attack of grip, will deliver one or two special lectures on some topic not yet definitely determined upon, before the students of the medical department of the University of Pennsylvania in response to a very flattering invitation from the Trustees and Faculty. He continues his weekly clinical lectures at the Pennsylvania Hospital on Saturdays as usual for the winter months, during his term of service as Attending Physician.

The "Standing Committee on Cholera" of the College of Physicians, sent out 800 letters to physicians in and near Philadelphia requesting their assistance in the work of sanitation of the city during last summer, and to those who consented to act with the Committee blanks were sent, for reporting of nuisances in the form of dirty houses, yards or streets, bad paving, neglect of duty by the cleaning and paving contractors and so on. During the summer about sixty complaints of the condition of various streets and houses were received, mostly as to accumulation of filth or garbage or foulness and overfilling of privy vaults. These were referred by the Committee to the Director of Public Safety and to the Board of Health for action. Some of the members of the Committee investigated for themselves besides, and without exception the complaint so examined proved to be well founded. The authorities seem to have received the complaints addressed to them in the proper spirit and to have done what was possible to remove the causes.

A large number of complaints of the manner in which streets were torn up for miles and left so torn up during many weeks were made, and much sickness of the nature of low continued fevers was attributed by the Committee's correspondents to this cause, but in spite of their efforts to get this state of things done away with, a similar condition exists even at present, and no attempt has been made by the authorities to prevent it.

Hospital Notes.

The Woman's Christian Association Hospital at Omaha, was slightly damaged by fire January 4.

The Trustees of the Santa Fe Hospital have decided to erect a building in Topeka this year, and work will be commenced in the early spring. The building and grounds will cost $100,000, which sum is on hand.

German Hospital in Philadelphia.—This institution according to its annual report is now supplied with water from two deep wells in the hospital enclosure. 2,485 patients were admitted during the year.

The Annual Report of the State Hospital for the Insane at Warren, Pa., shows 890 patients in the institution, representing 36 counties of the State; 276 were admitted during the year, and 206 discharged; 63 were restored and 57 died. The cost of maintaining these was $165,000.

Amphitheater Condemned.—The Building Inspector has condemned the clinical amphitheater of the City Hospital at Indianapolis. The building was constructed about thirty years ago. The same authority also discovered that the Hospital was without fire escapes, as required by law for all buildings over three stories in height.

St. Mark's Free Hospital and Dispensary of Chicago for rectal diseases. A charter has been secured for the above named institution by Dr. Joseph B. Bacon, Dr. Isabel Fish Taylor, and E. D. Stevens, and arrangements are being made to give Chicago a free hospital patterned after the well-known St. Mark's of London.

The Trenton Gazette in speaking of a new hospital to be constructed at Trenton says:

"One of the chief requisites is absolute freedom from dust, a quantity imperceptible to the human eye, entering the incision, often producing fatal results. To secure this important condition a room is being built with enameled brick, making it dust proof."

The conclusion is sound, if the premise is startling.

Hospital for Cripple Creek.—Mother Superior Baptiste of the Sisters of Mercy has purchased a large ten-room house between Third and Fourth Streets on Bennett Avenue, Cripple Creek, Colo., and is now busily engaged, with the aid of three sisters, in getting it ready for hospital use, and on Saturday next hopes to be able to receive patients. The camp is sorely in need of a place where the sick and injured can be cared for, and the miners generally consider themselves fortunate that so competent a nurse as Mother Superior Baptiste is to be at the head of the hospital.

Officers Elected.—The following officers of the West Philadelphia Hospital for Women were elected January 8: President, Dr. Anna P. Sharpless; First Vice-President, Miss F. B. Peirce; Second Vice-President, Miss Mila F. Smith; Treasurer, Miss E. Haslem; Secretary, Miss M. Sellers.

The following constitute the Board of Advisers: B. B. Comegys, J. Roberts Foulke, Thomas Scattergood and William DeCou; Solicitor, William C. Stoever. The District Physicians are Dr. Helena Goodwin, Dr. Elizabeth W. Griscom, Dr. Adelaide W. Packham and Dr. Elizabeth A. Ryder.

Harper Hospital.—The Trustees of Harper Hospital, Detroit, held their annual meeting January 8 and the following officers were elected: President, S. M. Cutcheon; Vice-President, J. L. Hudson; Secretary, Bryant Walker; Treasurer, C. A. Black; Chief of Staff, E. L. Shurly. M. C. Strong was reappointed superintendent and Mrs. L. E. Gretter principal of the Farrand Training School. The following additions to the medical staff were made: consulting physician, Dr. Charles Douglass; attending physicians, Drs. D. S. Campbell and J. J. Mulheron; consulting oculist, Dr. L. Connor; attending oculist, Dr. G. E. Frothingham, Jr.; neurologists, Drs. C. W. Hitchcock and David Inglis; assistant laryngologist, Dr. C. D. Anderson; gynecologist, Dr. N. P. Manton, in place of Dr. Helen F. Warner.

Insane Hospital Report.—The Indiana Central Hospital for the Insane made its annual report to the Governor January 8. The estimated value of the buildings and real estate is $1,450,000, and the appraised value of the personal property is $202,696.59. The financial statement shows the expenditure for the year $259,924.19, or $75.81 less than the amount appropriated. The hospital has turned $2,191.45 into the State treasury during the year.

The number of patients treated in the twelve months was 992 women and 912 men. Deaths to the number of 105 occurred, and 286 patients discharged. The superintendent has made many permanent improvements, including several thousand feet of cement walks, the building of a new kitchen, the renovating of buildings, tunnels and cellars, and the sinking of three driven wells. He has made changes in all the departments, has built sewers, a new barn and torn out old buildings. He recommends that a pavilion for contagious diseases be erected, also a cold-storage room, and a furnace for destroying rubbish.

Wilkesbarre, Pa., City Hospital.—The annual election was held January 6.

Medical Staff—consulting physicians, (ex-officio directors,) Dr. I. E. Ross and J. B. Crawford; attending physicians, Dr. J. A. Murphy, Dr. G. W. Guthrie, Dr. R. Davis, Dr. O. F. Harvey, Dr. L. I. Shoemaker, Dr. A. G. Fell.

Associate Physicians—Dr. W. S. Stewart, Dr. Charles Long, Dr. J. T. Howell, Dr. Ernest Buckman, Dr. W. G. Weaver, Dr. J. T. Matlack.

Ophthalmologist, Dr. L. H. Taylor; registrar, Dr. G. Maris Gibson; resident physician, Dr. Walter C. Kyte and Dr. J. E. Robins; committee on nurses' training school, Mrs. C. M. Conyngham, G. M. Reynolds, Dr. Lewis H. Taylor, Dr. O. F. Harvey; head nurse and principal of training school, Miss C. B. Wicks; lecturers, nurses' training school, Drs. Harvey, Shoemaker, Fell, Guthrie, Taylor and Stewart.

The Building Committee reported that the new building was proceeding as fast, if not faster than the contract calls for, and unless something unseen comes, the contractor will turn over the wards to the officers a month ahead of time. There are ten pupils in the nurses' training school, and a cooking school is to be opened this month, with a skilled nurse-cook from Boston.

Dr. Rutledge of West Indianapolis, was severely injured by being thrown from his buggy January 13. He sustained a severe fracture of the knee.

The Kentucky School of Medicine began its 38th annual session January 3, with 208 matriculates. The faculty propose the erection of a hospital building 100 by 60 feet four stories in height, adjoining the College.

Are Now Weeklies.—The *Kansas Medical Journal* and the *Philadelphia Polyclinic* are now issued weekly, instead of monthly as heretofore. Their courage and enterprise should be rewarded.

The Washington State Board of Medical Examiners held the regular semi-annual meeting in Seattle on January 2, at which time twelve of the twenty-three applicants who appeared for examination were rejected. The Board has revoked the granting of temporary permits to practice until the regular dates for the examinations.

National Dispensatory.—Our readers will be interested to learn that a new edition of the National Dispensatory by Lea Brothers & Co., is announced. It will include all the changes made necessary by the new Pharmacopœia. Professor Charles Caspari of Baltimore, succeeds the late Professor Maisch in the section of the work heretofore prepared by that *savant*.

Smallpox Cadaver.—A smallpox cadaver was discovered in the dissecting room of the Bellevue Hospital Medical College January 9. The body proved to be that of a man who died at Blackwell's Island Charity Hospital January 2. It was carried to the Bellevue Hospital morgue instead of the contagious disease morgue and when unclaimed, was turned over to the Hospital authorities as a suitable subject for dissection.

A Four Years' Course at Jefferson Medical College.—At a meeting of the Faculty of Jefferson Medical College held on Jan. 8, 1894 it was unanimously resolved to institute a compulsory four years' course with the session of 1895–96. This step was taken in order that the large clinical service of the Jefferson College Hospital (350 cases a day) might be utilized to the fullest extent in carrying out the desire of the Faculty to provide advanced medical education of practical character.

Dr. Louis E. Atkinson of Mifflintown, Pa., for ten years a member of the House of Representatives from the Eighteenth Congressional District, will be a candidate for the nomination for Governor at the next State Republican Convention, and will shortly make a formal announcement of his candidacy. The Doctor is a cripple and walks on crutches. He was defeated for the nomination for Congress in his district two years ago by Congressman Mahon of Chambersburg, and has since been quietly at his home in Mifflintown.

Chemic Glassware.—The Board of General Appraisers at New York have decided, in the matter of the protest of Eimer and Amend, heard Oct. 25, 1893, that 1, crystallizing dishes made of thin, Bohemian glass and used for crystallizing salts, chiefly in laboratories; 2, glass beakers, or dishes with glass covers, used exclusively for growing bacilli germs therein; and 3, glass mortars and pestles, such as are chiefly used in laboratories, are commercially known as "chemical glassware," and when for use in laboratories, are dutiable at 45 per cent. ad valorem.

National Guard.—Dr. Joseph D. Bryant, Surgeon-General of the National Guard of the State of New York, has reported to National Guard Headquarters a list of the medical equipments and appliances which he recommends are needed for fully supplying the surgeons, hospital stewards and the members of the recently organized Hospital Corps with practical apparatus.

The list represents an expenditure of about $5,000. Adjutant-General Porter states that the various instruments will be purchased as soon as possible, though there may be some delay, owing to manufacturers not keeping such a large stock on hand.

The organization of the Hospital Corps is in active progress. The Corps takes in eight men from each regiment, four men from each battalion and one man from each separate company, battery or troop.

The College of Physicians of Philadelphia, held a special meeting on the 12th inst., to consider the expediency of the compulsory reporting of phthisis pulmonalis by physicians as cases of contagious disease. The question was brought before the College at a previous meeting by Dr. Flick, who is an enthusiastic advocate of the contagiousness of tuberculosis, and who endeavored to get a resolution adopted similar to that which the County Medical Society recently passed at his instance, petitioning the City Board of Health to place pulmonary consumption upon the list of diseases, cases of which physicians must report under penalty for neglect, and also calling for a system of espionage of consumptives and the disinfection of the premises which had been occupied by fatal cases of the disease. The subject was referred to the council of the College whose report after a full discussion was adopted and the following minute made, at the special meeting: "The Council to which the resolution and the amendment, with reference to the proposed action of the Board of Health concerning tuberculosis has been referred, offers this resolution to the College:

"*Resolved*, That the College of Physicians believes that the attempt to register consumptives and to treat them as the subjects of contagious disease, would be imposing additional hardship to the lives of these unfortunates, stamping them as the outcasts of society.

"In view of the chronic character of the malady it could not lead to any measures of real value not otherwise attainable.

"That strict attention on the part of physicians in charge of the individual cases, insisting upon the disinfection of the sputum and of the rooms, on adequate ventilation, and on the separation of the sick from the well as far as possible, will meet the requirements of the situation so far as they practically can be met and better than any rules that, for diseases so chronic, can be carried out by a Board of Health.

"That the College of Physicians respectfully requests that no official action be taken in the matter by the Board of Health, except the insisting upon the disinfection of rooms in which consumptives have lived and died, in instances in which such procedure is not likely to have been adopted under the direction of the attending physician."

The discussion was opened by Dr. Owen J. Wistar and was participated in by Profs. DaCosta, Osler, Wood, Tyson, Roberts, Walker, Mays, S. Solis-Cohen and others. It will appear in an early issue of the JOURNAL, through the courtesy of the Philadelphia College of Physicians.

THE PUBLIC SERVICES.

An Army Medical Board will be in session at Washington City, D. C., during April, 1894, for the examination of candidates for appointment to the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before March 15, 1894, for the necessary invitation, giving the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal acquaintance, from at least two reputable persons, as to his citizenship, character and habits. The candidate must be between 22 and 28 years of age, and a graduate from a regular medical college, as evidence of which his diploma must be submitted to the Board.

Successful candidates at the coming examination will be given a course of instruction at the next session of the Army Medical School, beginning in November, 1894.

Further information regarding the examinations may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

GEO. M. STERNBERG, *Surgeon-General, U. S. Army.*

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from January 6, 1894, to January 12, 1894.

Capt. CHARLES E. WOODRUFF, Asst. Surgeon U. S. A., extension of leave of absence granted is further extended one month and twelve days.

First Lieut. CHARLES F. KIEFFER, Asst. Surgeon U. S. A., is granted leave of absence for two months, on surgeon's certificate of disability, with permission to leave the Department of Dakota.

First Lieut. EDWARD L. MUNSON, Asst. Surgeon U. S. A., is relieved from duty at Jefferson Bks., Mo., and will report in person to the commanding officer, Ft. Assiniboin, Mont., for duty at that post.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending Jaanuary 6, 1894.

FRANK C. COOK, Washington, D. C., commissioned an Asst. Surgeon in the Navy, Jan. 4, 1894.

LETTERS RECEIVED.

(A) Ancker, A. B., St. Paul, Minn.; Adkinson, L. G., New Orleans, La.; Atkinson, W. B., Philadelphia, Pa.

(B) Blodgett, F. Jr., New York, N. Y.; Bates & Morse Adv. Agency, New York, N. Y.; Bowman, F. C., Duluth, Minn.; Bassett, M. F., Quincy, Ill.; Beebe, E. W., (2) Milwaukee, Wis.; Bigelow, J. M., Albany, N. Y.; Boynton, M. E., Pelham, Mass.; Battle & Co., St. Louis, Mo.; Brown, E. J., Minneapolis, Minn.; Bates, J. H. Advertising Agency, New York, N. Y.; Brown, C. F., St. Peter, Minn.

(C) Cushing, H. K., Cleveland, Ohio; Coates, T., Russelville, Chester Co., Pa.; Castle, Wilmot & Co., Rochester, N. Y.; Clark, E. S., San Francisco, Cal.; Cochran, Jerome, Montgomery, Ala.; Carter, J. M. G., Waukegan, Ill.

(D) Dios Chemical Co., St. Louis, Mo.; Dawson, J. L., Charleston, S. C.; Dodson, B. F., Berlin, Wis.; Dunglison, R. J., (3) Philadelphia, Pa.

(E) Ellegood, Robt. G., Concord, Del.

(F) Fisher, W. A., Chicago, Ill.; Ferguson, A. H., Winnipeg, Can.; Ferguson, F., New York, N. Y.

(G) Gosa, J. H., Athens, Ga.

(H) Hawkins, A. Co., New Orleans, La.; Hall, M. D., Bloomington, Ill.; Hiltzei, Gustave A., Buffalo, N. Y.; Hibbard, G. W., Nashville, Tenn.; Hamburg-American Packet Co., New York, N. Y.; Harris, E. H., Grinnell, Iowa; Harrell, R. F., Ruston, La.

(I) Imperial Granum Co., New Haven, Conn.; Ingals, Ephraim, Chicago, Ill.; Ill, Chas. L., Newark, N. J.

(J) Jack, W. E., Collinsville, Ala.; Jelks, J. T., Hot Springs, Ark.

(K) Knapp, G. L., Mt. Vernon, Mo.; Kenyon, Frank, Scipio, N. Y.; Kemper, G. W. H., Muncie, Ind.; King, L. J., San Francisco, Cal.

(L) Lea Brothers & Co., Philadelphia, Pa.; Lowell, John P., St. Louis, Mo.; Linger, O. E., Starbuck, Minn.

(M) Miller, A. B., Syracuse, N. Y.; Manley, Thos. H., New York, N. Y.; Moran, Jas., New York, N. Y.; Miesse, Kate De Witt, Easton, Pa.; Marks, A. A., New York, N. Y.; Miller, T. M., Rockford, Ill.; Morgan, E. A., Maroa, Ill.; Meyrovitz, E. B., New York, N. Y.; Massey, G. Benton, Philadelphia, Pa.; Maltine M'f'g Co., New York, N. Y.; McEnroe, John F., Schenectady, N. Y.; McGahan, C. F., Aiken, S. C.; McDougal, J. G., New Lexington, Ohio; McGarvey, J. F., San Luis, Colo.

(N) Niles S. R. Advertising Agency, Boston, Mass.

(O) O'Brien, R. P., Minneapolis, Minn.

(P) Phillips, John, Stevens Point, Wis.; Parham, F. W., New Orleans, La.; Peek, J. H., Hampton, Va.; Penfield, R. C., Philadelphia, Pa.; Pollak, S., St. Louis, Mo.

(R) Risley, S. D., Philadelphia, Pa.; Ryno, W., Benton Harbor, Mich.; Rogers, S. F., Troy, N. Y.; Rush Medical College, Chicago, Ill.; Raymer, Chas. D., Co., Minneapolis, Minn.

(S) Short, J. L., St. Louis, Mo.; Snider, J. R., Shreveport, La.; Schnell, T. J., Parnell, Iowa; Smart, Chas., Washington, D. C.; Silver, D. R., Sidney, Ohio; Smith, W. S., St. Clair, Minn.; Standish, Miles, Boston, Mass.

(T) Trueheart, P. P., Starling, Kansas; The Geo. P. Rowell Advertising Co., New York, N. Y.; The Cudahy Pharmaceutical Co., South Omaha, Neb.; The Subscription News Co., Chicago, Ill.

(W) Westermann B. & Co., New York, N. Y.; Warner, W. R. & Co., Philadelphia, Pa.; Walker, J. E., Brooklyn, N. Y.; West, W. C., Geneseo, Ill.; West, C. B., Paterson, N. J.; Wilber, A. M., West Unity, Ohio; Wilkinson, A. D., Lincoln, Neb.; Woodward, W. C., Washington, D. C.; Woodbury, Frank, Philadelphia, Pa.; Wright, Thos. H., Bellefontaine, Ohio; Wyman, Walter, Washington D. C.

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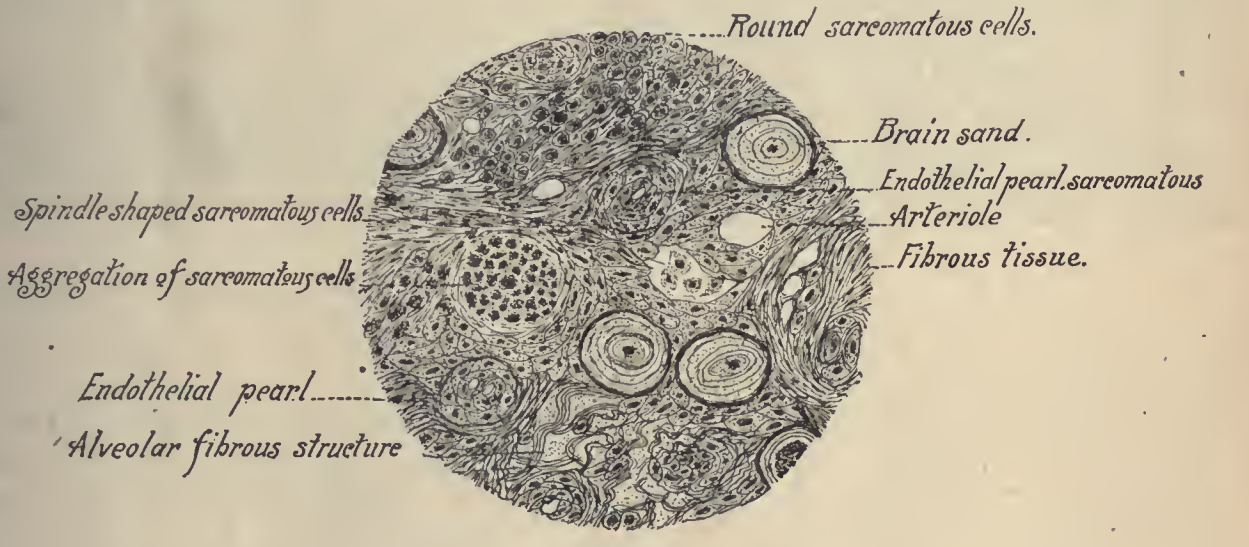
ORIGINAL ARTICLES.

REPORT OF A CASE OF CEREBRAL TUMOR, DIAGNOSED BY FOCAL SYMPTOMS, WITH OPERATION, SUCCESSFUL REMOVAL OF TUMOR AND EXHIBITION OF SPECIMEN.

Read before the Chicago Medical Society, Dec. 18, 1893.

BY D. A. K. STEELE, M.D.
CHICAGO.

In reporting to you a case of cerebral tumor diagnosed by focal symptoms and successfully removed, I desire to express my obligations to Drs. R. H. Isbester, O. A. King and W. E. Quine for a careful history, thorough examination and accurate diagnosis of the case before it was referred to me for operation, and to Dr. T. A. Davis for valuable assistance during and after the operation.



ENDOTHELIAL FIBRO-SARCOMA OF BRAIN.

The subject of cerebral tumors became interesting to surgeons in 1879 through the reports of cases by Macewen of Glasgow, and again especially in 1884, when Bennett and Godlee of London, arrested the attention of the surgical world by their narration of the diagnosis and removal of a subcortical tumor of the brain. Since then, many cerebral tumors have been diagnosed by focal symptoms and a few successfully removed. Horsley, Keen, Hirshfelder, Morse, Deaver, Nancrede and others have reported cases.

I desire to submit the following case as an addition to the literature of the subject:

The patient was referred from the Dispensary clinic of the College of Physicians and Surgeons to my regular Saturday clinic for operation in the early part of October. When I first saw the case I made a thorough examination, and placed the patient on large doses of iodid of potassium for the purpose of clearing up the question as to whether or not there might be syphilitic brain disease, although no history of any was elicited. Specific treatment produced no effect on his symptoms. November 18 the patient was operated upon. The history was as follows:

The patient, John Pierson, was born in Sweden, Jan. 18, 1852; he is 41 years old. He is the eldest of nine children, four boys and five girls. His family was always very healthy. His mother, brothers and sisters are living. His father died of old age at 77. He is a laboring man; married and has six children, four girls and two boys, all of whom are living. Upon arriving in this country, May 15, 1881, he went direct to Batavia, Ill., where he remained six years. He then went to St. Charles, Ill., and lived there until he came here for treatment.

About five years ago the patient while asleep in bed was aroused by a sharp pain of a cramping character, in the calf of the right limb, which lasted from two to five minutes. It was very severe. This pain and the following plantar contraction of the toes, constituted the first attack. About one week later he had a second cramp, which was in severity the equal of the first. It occurred in the same region and was about the same duration. The cramps appeared at an interval of seven or ten days and were about as severe as the first. Just preceding a spasm there was a prickly, paresthetic feeling in the locality of the expected monospasm. Two things characterized these spasms: 1, that they extended up the right limb gradually until they reached the right groin; they then passed into and extended in the lower part of the trunk, when they became more painful; 2, after each spasm the limb was weaker, so that as the spasms became more frequent they caused a general weakening of the muscles and therefore lameness. The spasms continued to extend upward until the right arm and the face were affected. It took about one year for the whole right side to become affected. The spasm would always start in the same place, creep upward to the trunk, and then die away before the arm and face were affected. After the right side was affected the patient sometimes had a prickling sensation in the left leg, but at no time were there any spasms.

During the whole period of five years the patient never had an attack of unconsciousness. He often had very severe headaches, starting in the occipital region and extending to the frontal.

Examination showed motor paralysis and sensory blunting of the right leg; the right patella tendon reflex was much increased; hearing was much reduced in the right ear; there was no choke disc or optic neuritis; none of the orbital muscles were involved. Speech was slow. A diagnosis of cerebral tumor originating in the leg center of the cortical area of the left hemisphere of the brain, and extending downward and forward to the arm and face centers was made, and operation advised, after specific treatment was tried without avail.

The patient was prepared and I was ably assisted during the operation by Dr. T. A. Davis. The toilet of the operating field was thoroughly made the previous day; shaving and cleansing, and a wet 1-2000 bichlorid dressing applied to be worn until time of operation.

After the patient was thoroughly under chloroform a small solid cylindrical rubber band was passed around the head to render bloodless the field of operation in the scalp. Four stitches, as recommended by Dr. F. Shafer of this city, were introduced equidistant apart, binding the rubber constrictor to the scalp so as to prevent slipping. Owing to the extent of the symptoms, showing that the convolutions of the upper half on either side of the Rolandic fissure were involved, the nicety of delicate cerebral localization technique



Endothelial fibro-sarcoma of brain; weight 60 grams; base of tumor showing depression at point of attachment.

was dispensed with and a horse-shoe shaped flap of three inches width was turned down and fixed with one stitch to the integument beneath, to keep it out of the way of the operator. A large button of bone was then removed and the opening enlarged by the rougeur to a size corresponding to nearly that of the scalp flap, a little over three inches in diameter and heart-shaped. Palpation through the meninges showed great resistance over the region corresponding to an inch each side over the upper third of the Rolandic fissure. Below this region the resistance was normal. On opening through the meninges there was found absence of pulsation over the region corresponding to the part offering great resistance to palpation, and slight pulsation below that region.

Faradization with a double brain electrode over the dense tissue was followed by no muscular response, but at the lower margin of this tissue, and on down the Rolandic marginal convolutions there was responsive contraction of arm muscles, increasing as it distanced the dense tissue. Macroscopically the dense tissue presented a yellowish color and bulged into the wound. On digital exploration a tumor of considerable dimensions was found extending down into the brain and readily separable from it, a few slight adhesions of the tumor capsule alone offering any barrier. After outlining the free borders of the growth, a firm pedicle was found attached to the skull, or falx-cerebri at the region of the superior longitudinal sinus. The tumor was "shelled out" quite readily with the fingers leaving the firmer portion, the pedicle, which was removed with a strong curette, after cutting the skull away up to it with the rougeur forceps. A large rent in the superior longitudinal sinus was necessarily made on removing the pedicle, which necessitated firm packing with iodoform gauze of the whole intra-cranial wound. This readily controlled the hemorrhage, which was enormous for a few seconds; but it prevented the satisfactory closure of the wound with the return of the bone chips. The regular antiseptic dressing was applied and was not disturbed for three days, when the bulk of the gauze dressing was removed, leaving only one small piece over the rent into the sinus. At the second dressing, four days later the remaining piece of gauze was removed.

Slight constitutional disturbances followed the operation; temperature 101 degrees; operation fever for thirty-six hours followed by a decline to normal on third day. There was complete motor paralysis of arm and leg for twenty-four hours following the operation, at the end of which time slight motion returned to leg, and nineteen days later some motion was observed in the arm. Slight but steady improvement has occurred since that time. Although we expected from the origin of the tumor that sensation and motion would return in the arm first, as a matter of fact they returned promptly in the leg, and later in the arm. Sensation was first felt in the shoulder muscles, the next day he could move the arm and on the third day he could draw up the forearm; and now he has good control of the whole arm except the fingers. He has no power and but little sensation in the fingers. He tells me that he is capable of exercising some muscle or making some new movement each day. The patient is now able to sit up, is permitted to walk a little and is anxious to return to his home in time for Christmas.



Endothelial fibro-sarcoma of brain, side view.

The packing prevented the accurate suturing of the scalp; there was an opening of perhaps two inches through which the ends of the strips of gauze were drawn out. At the end of a week these edges were freshened and re-sutured. Now we have a small opening of half an inch through which I keep a minute strip of gauze for capillary drainage. There is granulation tissue covering the wound, and the patient has practically recovered. One week later the wound had firmly cicatrized and the patient returned home.

In regard to the character of the tumor, the specimen was submitted to the Pathological Laboratory of the College of Physicians and Surgeons. The examination was made by S. J. Sornberger and Prof. Evans. Under microscopical examination, both of the longitudinal sinus, that is, the pedicle of the tumor, and the tumor itself, the following characteristics are presented:

1. An abundant fibrous stroma, alveolar in appearance.

2. An abundance of endothelial cells, both large and small. These cells are in places crowded together in dense concentric masses, while others are scattered profusely among the fibers of connective tissue.

3. Calcareous granules, quite abundant, distributed throughout, but rather more abundant in the small tumor from the sinus, and near its upper margin.

Diagnosis.—Endothelial fibro-sarcoma.

Remarks.—As you examine the tumor which I submit to you for inspection, you will observe that it is cone-shaped, bearing a striking resemblance to a small pine cone, although somewhat more irregular in outline. It weighs exactly two ounces. Its vertical diameter is two and a half inches and the trans-



Endothelial fibro-sarcoma of brain, convex surface.

verse diameter two inches. The base is smooth and slightly depressed in the center where it was plucked from the stem or pedicle. The surface presents a papillomatous appearance, small finger-like or tuberous processes extending downward and outward in all directions but more marked around the apex of the tumor. If we invert it and place it in the same position it occupied in the brain, you will observe that it grows downward and forward from its point



Appearance of operation-wound at time of report.

of origin in the wall of the longitudinal sinus into the Rolandic fissure, displacing the paracentral lobules, and the surface irregularities are probably due to the varying amount of brain resistance to the outgrowth of the tumor. Some portions of it lying in the great fissure and the smaller projections pushing between the convolutions.

The reaction under the double brain electrode may be explained in part by the atrophy of the adjacent portion of the brain, or motor cells from pressure, and in part by mechanical displacement.

We would infer that the failure to elicit reflex spasm by electric stimulation of the leg center was due to mechanical displacement of the center upward and backward by the tumor, when we find that the removal of the tumor was followed by a prompt return of sensation and motion in the leg. While the slower return of the same function in the arm speaks for pressure atrophy of the motor cells of the arm center.

240 Wabash Avenue.

THE TREATMENT OF IMMATURE CATARACT AND WHEN TO OPERATE FOR CATARACT.

Remarks made in a Conference During the Special Week on Cataract.

By Geo. E. de Schweinitz, M.D., Edward Jackson, M.D., S. D. Risley, M.D., and H. F. Hansell, M.D.

Professors and Adjunct Professors of Diseases of the Eye in the Philadelphia Polyclinic.

Dr. de Schweinitz, referring to the medicinal treatment of cataract, stated that no drugs were known which could dissipate lenticular opacities. Occasionally there was spontaneous disappearance of cataract, for example, in diabetic patients; and even, if certain reports are to be credited, for example those by Nicati, of true senile cataract; but such disappearance could not be ascribed to the influence of medicine.

In like manner, electricity, which from time to time has been recommended, is of doubtful value; in fact, there is no evidence to show that electrical currents have ever had the slightest influence in checking the growth of lenticular opacities. These statements, however, do not conflict with the propriety of treating the subjects of lenticular opacities; 1, by careful testing of the refractive error and prescribing the glass which gives the highest visual acuity; and 2, by exhibiting alteratives, particularly the iodids of soda and potash, sedatives, e. g. bromid of potash, and tonics; for example, strychnia and nux vomica. These, as has often been pointed out by Dr. Risley, diminish the congestion of the choroid coat, and while they do not check the growth of the cataract, they relieve the associated asthenopia and permit the patient reasonable use of his eyes. Moreover, as again urged by Risley, by improving the health of the ocular coats they tend to increase the chances of operative success whenever extraction becomes necessary.

Dr. de Schweinitz further discussed the advantage of the prolonged use of a mild mydriatic drug, not only for its local sedative effect but, in more advanced cases, on account of the improvement of vision through a moderately dilated pupil.

Referring to the artificial ripening of cataract, Dr. de Schweinitz, quoting White, said that these operations might be divided as follows: simple division of the anterior capsule; division combined with iridectomy, as advocated by Mooren; division and external massage (Rhomer); iridectomy and triturating the lens through the cornea, or Förster's method and the one commonly employed: paracentesis of the cornea, and internal massage directly on the anterior capsule, particularly advocated by Bett-

man of Chicago; and finally, simple paracentesis of the cornea with external massage—a method devised by Pooley and practiced and popularized by White of Richmond. All operations were dismissed except Förster's method, internal massage directly on the anterior capsule, and White's modification of Pooley's operation.

Dr. de Schweinitz's experience was limited to Förster's method and that advocated by Bettman, with neither of which he had had unfortunate results although, following the advice of Knapp, he believed that preliminary ripening operations were generally unnecessary, and preferred the risk of extracting an unripe cataract, believing that the remnants of cortical, if confined within the capsule, produced little or no harm and could afterward be treated by a needling operation. He referred to the statement of Schweigger that the usual criteria of ripeness, namely, opacity to the periphery and the absence of the shadow of the iris by lateral illumination, are erroneous after the sixtieth year of age, when the lens may be extracted with safety, even if it is partially unclouded.

Dr. de Schweinitz expressed the opinion that it was perfectly proper to operate on monocular ripe cataract, even if the opposite eye was unaffected and had normal vision; for the reasons that if successful the appearance of the eye (these monocular cataracts usually being very white) was improved, the visual field was increased, the lens was saved from the danger of undergoing fatty degeneration, and the patient was given an eye which might be used in case harm came to the other or unaffected organ.

DR. JACKSON.—As to the age at which extraction becomes necessary for the removal of a cataract, no hard and fast line can be drawn. Two days ago, I did extraction on a young man 16 years of age and found the nucleus as large and firm as it commonly is at 40. Apparently he had a senile cataract at an unusually early age.

As to the choice between extraction and iridectomy for partial congenital cataract, it must rest mainly on the acuteness of vision that is obtained with the dilated pupil. If this be good it may be worth the while to do an iridectomy, but otherwise extraction or discission should be practiced. Theoretically by saving the crystalline lens we should in young patients save some power of accommodation. But in such cases, the power of accommodation is so slight as to be scarcely worth considering in this connection. The changes in the lens that make it partially opaque destroy almost entirely its elasticity.

For a ripening operation, the reasons that have influenced me in preferring the Pooley-White operation are, that it is done without iridectomy and that it is done without the introduction of an additional instrument into the eye. Not many years ago, it was regarded as a very important rule not to introduce any instrument into the eye if it could possibly be avoided. The operation has proved very satisfactory in my hands, where the lens had reached a certain stage of development and where there was a firm nucleus. In such cases it has always succeeded. In cases where there was no hard nucleus in young persons it has completely failed.

The length of time required for the ripening varies. I have done extraction one week after the ripening operation, but there remained some clear cortex in the posterior portion of the lens, although vision had fallen from four-fiftieths to mere light perception. I have extracted an entirely opaque lens at the end of two weeks, but in other cases the period required for complete ripening was considerably longer. The operation is attended with very little reaction and I have never seen any iritic exudation or posterior synechia from it. Usually there is for two or three days a pericorneal zone and some little discoloration of the iris.

It may be seriously questioned whether ripening operations are necessary at all; whether it is not as well to extract the cataract still immature. With a large, hard nucleus after the age of 60 years, I would certainly do so. But where there is considerable cortical substance still clear and soft, the extraction will be easier and cleaner if some ripening operation has previously been done. I do not fear the leaving behind of some cortex so long as it is left inside the capsule, and not in the anterior chamber. I have never seen it interfere with the progress of healing, and at the worst it only renders necessary a subsequent needle operation.

As between an operation for preliminary ripening and a secondary operation after the extraction, I think the choice as to risk is small; but either of them is better than to keep a patient waiting for months or years for maturity of a cataract, after the second eye has become so far involved as to be no longer useful. Prolonged waiting in partial or complete blindness is so depressing to the patient's physical and mental health and vigor, that no gain in the ease and smoothness of the extraction can compensate for it. Marked improvement in the physical and mental condition after cataract extraction is quite frequently witnessed, and when a patient has progressed so far as to lose useful vision in the second eye, the time for a ripening operation or an immediate extraction has certainly arrived.

As to the removal of the crystalline lens for high myopia; the influence of the operation on the refraction is an additional reason for extraction, where myopia coëxists with partial opacity of the lens. In myopia of very high degree, uncomplicated and with fair vision, I would not do any such operation. There is, however, one class of cases in which it seems proper to resort to it, and that is the class of high myopia confined to one eye, or of myopia very much higher in one eye than in the other. In cases of this kind the extraction of the lens from the more myopic eye will sometimes enable the patient to use the two eyes together, and thus obtain the advantages of binocular vision.

As to monocular cataract, I think that when it is mature and the patient in favorable condition, it is always proper and best to remove it and so advise. But I am always careful to explain to the patient that it will not improve his vision; (assuming that this is good in the other eye) and that it will be impossible for him to use the two eyes together; that what he will gain will be the enlargement of his field of vision; and an eye that will, by the adjustment of the proper glass, be serviceable whenever the one he now uses fails him.

DR. RISLEY—The picture of immature cataract we are considering, I think should be studied with the pathologic background in view. In my lecture today I expressed the views which have seemed to me to be justified by my study of immature cataract, and since I have gone over this so re-

cently, and we have had such an excellent resumé of the subject by Dr. de Schweinitz, I will speak only of the management of these immature cataracts by operative interference. We should always keep the probability of their pathologic significance in mind. Having done all that is possible to restore the ocular health, then we may undertake the maturation or removal of these unripe cataracts. It seems to me we should be guided, in some measure at least, in the course to be adopted, by the condition of the urine. I must express my own conviction as in favor of the ripening operations combined with preliminary iridectomy. Since these cataracts are usually complicated, and the cortex is liable to stick to the capsule in our efforts to remove the lens, we should have as free an exit as possible, and this we secure by an iridectomy. Then, too, we should not lose sight of the therapeutic value of an iridectomy. I am sure you must have seen, again and again, tender eyes, the subject of intra-ocular inflammations; eyes which will not keep quiet long at a time, and are sure to go backward with any depreciation in the general health, grow rapidly better after iridectomy. And to my mind this is one of the signal advantages of iridectomy in this class of cases. Not only do you get the therapeutic value of the iridectomy, but it gives you an opportunity under the most favorable conditions, for adopting some method of maturation, and whether the lens is rubbed through the cornea or by direct trituration, it is more readily done and with less danger to the iris than without iridectomy.

I have again and again performed both direct trituration with a horn spatula upon the capsule of the lens, and more frequently still, have rubbed the lens through the cornea by means of the lid itself or the spatula, adopting a rotary, or up-and-down and to-and-fro movement of the spatula, being careful to lubricate the cornea with the tears, so that the epithelial layer of the cornea will not be injured. I have never seen any harm result from either of these procedures. I have occasionally failed to produce any result, but have always in such instances blamed myself for not having rubbed the lens with sufficient vigor.

It has seemed to me that the ripening of the cataract comes from breaking up the relation which exists between the capsule and the cortical layers of the lens, and that the rubbing must be done with sufficient vigor to bring about this result. Now, whether the fibers of the lens become opaque from simply bruising, as has been suggested, or whether their relation to the capsule has been disturbed and the nutritive supply cut off by this means is still an open question. To my mind the latter is the most plausible explanation of the increased opacity of the lens which results after the trituration process. You have all witnessed four cases at Wills' Hospital in which this operation had been performed. You remember the young woman who had an iridectomy performed and trituration through the cornea. In this case in two days there was a very marked increase in the opacification of the lens fibers. In the old woman whose cataract I extracted to-day, a preliminary iridectomy with trituration through the cornea, had been performed three months before, producing a marked increase in the opacification of the lens; but as you saw, in the periphery, particularly above, there was some transparent cortex; but nevertheless, the lens came out entire and left an entirely black pupil without any cortical remains in the anterior chamber. In the old man who had the atheromatous arteries, this process had also been carried out in the same manner only three weeks before. In that case there had been in the three weeks very marked increase in the opacification of the lens. All irritation had subsided, and notwithstanding the serious pathologic condition of his eyes and his impaired health I did not hesitate at the end of three weeks to perform extraction. I think it was Dr. Jackson who has said that in his judgment the hard nucleus was one of the essential factors of success in this trituration process. Between the hard nucleus and the cornea you crush, as it were, the fibers of the cortex of the lens. I will say, therefore, again that my experience is in favor of these operations for maturation rather than for extraction without it. I perfer in most cases of immature cataract a preliminary iridectomy, since we get the early therapeutic value of an iridectomy, and also a wider exit for the lens itself, with less danger of bruising the iris. As to congenital cataract, I recall an experience I had in consultation with Dr. Norris at the University Hospital many years ago, when I had charge of the Dispensary as Chief. There was a young patient with double zonular cataract, and I called attention to it as one upon which he would possibly desire to operate. He said: "I have found in a great many cases, that these patients are markedly improved by strong glasses, and wish you would try these carefully before we do an iridectomy, or any other operation;" and to my surprise, with a plus 3 or 4 D. convex glass the vision came up from 20-200 to 20-40 or thereabouts. This is only one example of a considerable group I have seen since. In many of these cases of zonular cataract if you dilate the pupil and flood the eye with light, you will find the little elliptical zone of gray opacity, a transparent nucleus in its center and a transparent cortical on its outer side with a gray reflex showing through it, and in some cases I have been gratified, and all thought of operation dismissed from my mind by the results of careful corrections of refraction, or by the use of strong glasses which are always needful for near work, since the power of accommodation is usually *nil*. One of my procedures in these cases where the glass has been excluded is to dilate the pupil, and then, if the vision is materially improved by such dilatation, I consider the question of an iridectomy. The result, however, is often disappointing. I remember last summer having under care a young woman with zonular cataract, who was not willing to admit that we had given her any improvement by this means, and yet I could not see why. A broad iridectomy was not done; I purposely made a slit two or three millimeters wide, up and in, and it seemed to be typically placed. I could see the eyeground through it, but could not induce her to say she had been benefited in the slightest by the operation, and yet it was her only eye, the other having been lost by some accident. Regarding the question of extraction of the lens in high myopia, I recall the case of a friend with a very high degree of myopia. He is a literary man with wide reputation, his eyes having served him for an enormous amount of work. He has often sought my advice as to whether or not it would be an advantage to have the lens extracted. We have discussed it well, but have never yet been able to summon courage sufficient to

have the operation done. I think when he reaches 60 years of age, if I do also, that I should advise him to have it done, but not before.

I have changed my views regarding the propriety of operating on patients with monocular cataract. Formerly, I thought it was subjecting them to unnecessary surgical interference, since they could not in any event enjoy binocular vision. My practice has changed, however, and for the reasons already mentioned by Dr. Jackson and Dr. de Schweinitz. In the first place, it improves the appearance of the patient by removing an unsightly white pupil. But what is of more importance it renders him less liable to accident on the street by restoring his field of sight on the side of the cataract. After its removal he will be able to see approaching objects, even though the eye may not be used for reading. Then, too, if the cataract is allowed to remain too long it becomes over-ripe and the probability of a smooth extraction is much diminished. I have, therefore, of late years advised the extraction of the cataract at some opportune time, if the eye were in a moderately healthy condition, even though vision were perfect on the other side.

DR. HANSELL—In regard to monocular cataract, as a rule I do not operate upon it. While I recognize the reasons for operation that have been given, I think there are some others that are equally powerful to influence one against interference. First, nearly all cases of monocular cataract have divergence in that eye. Second, the vision obtained does not in all cases compensate the patient for the expense, the annoyance, worry and risk of the operation. Again, the defect is not particularly noticeable, indeed, the mass of the laity do not recognize a cataract. A man was lately brought into my office, blind with cataract in one eye, and the family were not aware of the nature of the trouble. But there are circumstances which would warrant an operation, and I would do it in the cases in which the patients wanted it, but I would never advise it on the ground of securing better vision. I would not allow that consideration to influence me in deciding whether to operate or not. Another point, closely allied, is when to operate when in one eye the cataract is mature and in the other incipient. Dr. Jackson has said to operate as soon as the patient is no longer able to follow ordinary occupations. I agree perfectly, only I would put it in this way—postpone operation until the patient is deprived of the vision necessary to pursue his ordinary functions. I had this rule very strongly impressed on my mind by an experience. I extracted an over-ripe cataract from the eye of a patient 60 or 70 years of age, blind in that eye for thirty years, but with vision of about 20-30 in the other eye. After operation the vision was about 20-40—a little less than vision with the good eye. I considered the operation very successful, and I congratulated myself on restoring vision to an eye so long blind. This person recommended a friend with the same trouble to another physician, saying she had expected her vision to be improved but it was not. So I would say to operate on the eye first affected when the patient was deprived of useful vision in the second eye and not before.

Replying to Dr. de Schweinitz's question: "How long I would wait if I had two unripe cataracts?" I answer, that would depend upon the age of the patient and his financial condition—by that I mean his ability to live without the accurate use of his eyes; but I would not hesitate to extract a nuclear cataract in a patient over 60, whether or not the cortex was involved.

PHARYNGO-MYCOSIS.

BY HOMER M. THOMAS, A.M., M.D.
CHICAGO, ILL.

The term, pharyngo-mycosis, signifies a fungoid condition of the pharynx. It is a parasitic affection of the mucous membrane of the mouth, and manifests itself in white patches of varying size. These are found to contain epithelial cells and parasitic forms of a vegetable nature, the distinctive ones being called leptothrix threads. The tonsillar crypts of healthy persons are sometimes more or less plugged by these vegetable masses, but it is only when the plugs are large enough to project slightly over the surface that they come under observation. Mycosis leptothrix occurs in two forms, diffused and circumscribed. In the diffuse form the entire tongue is coated with a shiny, milkwhite mass, which is frequently of sufficient density to obscure from view the villiform papillæ. Movement of the tongue and sense of taste are not lost, and there is no interference with the general health. In the circumscribed form, white glistening points appear, resembling those seen in follicular tonsillitis, except that the mucous membrane about them preserves its normal pink hue. The tonsils, pharyngeal wall and base of the tongue are apt to be invaded. White or yellowish gray spots, usually hard, are arranged in groups or singly, and form little excrescences on the normal mucous membrane. They adhere firmly to the surrounding parts, and reappear if removed by forceps. The leptothrix buccalis is found in carious teeth and in the accumulations known as tartar; a microscopic examination of the secretions of the mouth will almost always find them. You should look for these collections in the lymphatic tissue at the base of the tongue, in the faucial tonsils and in the adenoid tissue of the vault of the pharynx.

Some of these white spots resemble a mushroom in shape, others are like pointed cones. The mass seems to be in layers, the outer one being easily smoothed off, while there is a deeper and harder substratum in the shape of little plaques. These little excrescences have their attachments on the surface and in the openings and depressions of the tonsils, or on the palatine arch, often on the posterior pharyngeal wall, the side of the pharyngeal wall being sometimes involved. When occurring on the tongue they have their attachments in the region of the large papillæ. Sometimes this mass is cheesy and easily removed; sometimes tough and stringy, running deep into the follicles, being very tenacious and difficult to remove. B. Fränkel of Berlin, first pointed out in 1873 an abundance of leptothrix threads in these products, and since then this has been noted by many observers.

However numerous these small whitish projections may be, each spot is isolated and they never form a continuous mass. After the tonsil, the glandular subtissue at the base of the tongue is most frequently affected; and the growth here may be extensive, the masses attaining the size of a pea. In some cases, mycosis involves all parts of the pharynx.

Pathology.—The gross appearance of the lesion is

that of discrete white spots, which may be connected here and there by scanty thread-like filaments. The mucous membrane covering the tonsil is the part most frequently invaded. In so-called fetid bronchitis, the leptothrix threads have been found in the tracheal mucous membrane, in the characteristic fungoid plugs; they have also been found in the sputa of pulmonary gangrene. In fourteen cases reported by Heyring, the affection was confined to the tonsils in seven; in the remainder the base of the tongue was also affected. Six were men and eight were women. The ages varied from 12 to 62, the preponderance being between 28 and 35.

The characteristic feature of the circumscribed form is, that although it quickly redevelops, often in twenty-four hours, in the same spot from which it has been removed by instrumentation, its extension to other points is comparatively slow; that is, new foci of the diseases develop sluggishly, but when once established their tenacity of life is very great and radical methods are required to destroy them.

From diphtheria this disease may be differentiated by the persistent discrete arrangement of the exudate, the general absence of surrounding inflammation, and the masses being much harder than pseudo-membrane. The tongue may also be involved, which is rarely the case in diphtheria. The absence of the Klebs-Löffler bacillus would be convincing. Mycosis of the pharynx may be confounded with cheesy masses in the crypts of the tonsil, and follicular disease of the throat, but the ease with which the cheesy masses may be expressed from the crypts of the tonsils is in striking contrast to the fixation of the mycotic masses. The constant presence of inflammation in follicular disease, and an entire absence of inflammation in mycosis, are distinctive of the two diseases. The exudation of follicular tonsillitis is a yellowish white; it frequently becomes confluent, and upon the application of the salt of iron it is readily disintegrated and may be largely removed.

Microscopic Appearance.—Microscopic examination shows a general mass of epithelial cells surrounded by an irregular collection of fungoid spores, arranged in link-like processes, their ends being rounded or club-shaped. They vary in length and some curl up at the ends into hair-like filaments; others are like rods, colorless, with sharp dark borders, the centers seeming to be full of granular matter. Besides these spores there are round or oval, highly reproductive bodies with dark borders, arranged in colonies or placed separately between the branch spores. Staining with methyl-blue brings out colored and uncolored portions on the stem spores. Jacobson succeeded in making a pure culture of these organisms. Leptothrix has the peculiarity of dissolving the chalk deposits of the salivary ducts and glands. Miller describes the microscopic appearance as a dirty yellowish deposit varying in size from the head of a pin to a pea, consisting of numerous bacterial forms and extending deep into the lacunæ of the tonsil.

Etiology.—The etiology of pharyngo-mycosis is very uncertain. Mouth breathing has been suggested as the cause. Tonsillar hypertrophy is a predisposing cause. It has been noticed as a sequel to rheumatic amygdalitis. Some observers have mentioned damp localities as favorable to the growth of this fungus. Catarrhal inflammation is a predisposing cause. It is more frequent in females than in males. Tobacco smoking is thought by some to have a preventive action. The resemblance of the bacilli to several forms found in water, especially the water from marshes, has suggested the possibility of such a source of infection. In several instances it has been observed to follow or excite affections of the pharynx. It occurs most frequently in women and children who suffer from enlarged tonsils and are disposed to chronic pharyngitis. Some writers claim that a condition of malnutrition, with an impaired state of health, may be considered as a provoking cause; others claim a causative relation between disturbances of digestion and mycosis. W. C. Glasgon believes that some peculiar condition of the mucous membrane is a necessary factor in the development of mycosis, and that it only exists when the membrane presents a soil which favors its growth and development. The disease is not directly transmissible and is not contagious.

Symptoms.—The subjective symptoms of pharyngo-mycosis are variable; sometimes there exists a sensation of tickling and dryness in the throat, confined to the pharynx. Again, there may be a feeling as if the throat had a band drawn around it, giving rise to a slight choking or feeling of pressure; slight pain on swallowing, the feeling of the presence of a foreign body, attended with an irritation which causes a desire to clear the throat and to cough. In some cases these symptoms are greatly exaggerated, with depression, considerable fever and loss of appetite. The disease may exist without any symptoms being apparent to the patient, if not a vocalist. Mycosis in the throat of a vocalist produces great dryness and irritability of the fauces after a short vocal use of the throat. The voice is rather lowered in tone and inclined to be husky.

The objective symptoms are spots upon the pharyngeal wall, and often the circumvallate papillæ of the tongue are invaded. The color of the spots may be white, cream or yellow.

Treatment.—Dr. Kitchen has suggested hyposulphate of sodium as a means of treatment, especially if allowed to soak in well, and applied repeatedly with a swab. Peroxid of hydrogen has also been recommended. Semon claims to have cured a case with chlorate of potash gargle, and troches of tannic acid; Seiffert, with iodin and a gargle of borax, but doubt has been expressed as to the correctness of the diagnosis. Alum and sulphur have been found useless; silver nitrate resulted well in two cases that were especially tolerant to its use, but a relapse occurred later. Jacobson recommends a bichlorid gargle 1-2000. Töplitz found ferric acid useless, and others have had a similar experience with other iron salts. Carbolic acid has produced negative results. All of these agents have proved unreliable, and nearly all of them useless; fused chromic acid has given better results. At best, superficial applications like gargles can only affect the top of the growth, while its base remains firmly bedded in the tonsillar crypt, and the forcible rubbing on of solutions may abrade the epithelium and so permit the spread of the disease. Glasgon advocates the destruction of the organism with the cautery, or forcible extraction with the forceps where the growth has assumed a horny thread-like character. In some cases he advises scraping of the spots with a sharp curette and applying trichloracetic or chromic acid freely to the surface. He has found the application of boracic acid in saturated solution of value,

in preventing the spread of the disease. The treatment is always tedious, with a tendency to return until all evidences of the disease have been eradicated. The most successful and certain treatment is the use of the thermo- or galvano-cautery. The bacillus frequently penetrates the tissues to the depth of one or two millimeters, hence the cauterization must be deep in order to destroy the germ. The bacillus thrives best in an acid medium. If the negative pole is used for cauterization, with a large positive electrode, there is a deeper action upon the tonsil and the growth is surrounded by alkalin fluids. The point of the galvano-cautery should be thrust into the root of the growth.

I am under obligations to Dr. F. D. Owsley of this city, for translations from the German, of Schech. I am also indebted to the writings of B. Fränkel, Rice, Vanderpoel, Newcomb, Hemenway, Glasgon and others.

The following case of pharyngo-mycosis was kindly referred to me by Dr. Fränkel of Berlin:

The history of the case as given by the patient, Mrs. C. B., is that during August, 1892, she suffered from a slight irritation in the pharynx. There were white spots on the tonsils, which disappeared after a few days, but returned within a couple of weeks. The physician consulted called the trouble a mushroom growth, and said it would require two or three treatments a week for some three months to effect a cure. The treatment consisted of a forcible removal of the exudate by means of forceps. This method of treatment was attended with severe pain and proved unsatisfactory. The patient becoming discouraged consulted Dr. Fränkel of the Berlin University, in November. At that time he found spots covering the tonsils and extending to the root of the tongue. His treatment consisted of swabbing the throat two or three times a week with a 5 per cent. solution of carbolic acid, and he recommended that the throat be gargled two or three times a day with pure brandy. Under this treatment the throat seemed to grow somewhat better, but still the disease was not wholly eradicated.

Having been called to this city, Mrs. B. came under my care Jan. 4, 1893, at which time the pharyngo-mycotic deposit was very extensive upon the posterior pillars of the fauces and invaded the root of the tongue, almost completely covering it, and there were extensive deposits upon the tonsillar substance.

After having confirmed the diagnosis as made by Dr. Fränkel, through microscopic examination of the deposit, I advised treatment to consist of thorough applications of the galvano-cautery. The electrode selected was one made for me in Vienna, and consisted of a very fine elongated platinum point which enabled me to introduce it directly into each one of the crypts of the tonsil affected by the disease, and also to eradicate the punctated growths at the base of the tongue. At first only three or four punctures were made at a treatment, the treatments occurring three times a week. As the patient grew more tolerant of the irritation following the use of the galvano-cautery, the number of punctures per treatment was increased, until I frequently applied the cautery to eight or ten of the mycotic masses at each treatment. The effect secured has been satisfactory to the extent that the disease has not reappeared at any of the foci cauterized.

My experience in these cases leads me to believe that the galvano-cautery treatment of pharyngo-mycosis is the nearest a specific in the management of this disease of anything we have.

Marshall Field Building, Chicago, Ill.

A Case of Triplets, all Males.—Mrs. Albert Stunzi, of East Eighteenth Street, New York City, became the happy mother of triplets, all boys, in the middle of December last. The mother and her sons are getting along unusually well, and the presents of cash baby clothes that showered down on the suddenly increased family were a surprise that did no harm to the prospects of any concerned. Some gifts came to hand from points as far to the westward as Omaha and Denver.

PATHOLOGICAL CONDITIONS FOLLOWING PIERCING OF THE LOBULES OF THE EAR.

Read in the Section on Otology, Pan-American Medical Congress, Washington, Sept. 6, 1893.

BY MAX THORNER, A.M., M.D.

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The custom of piercing the lobules of the ear dates from the remotest historical antiquity, being first mentioned in the Book of Genesis. It was practiced by the people of the Orient and by those of the West, and was transmitted from the races of classic antiquity, through the Middle Ages, down to our present times. Ear-rings were held among certain nations in high repute as talismans or amulets. They were, and I believe are still, superstitiously valued as remedies for eye affections. But their principal use was at all times, and certainly is now, that of ornaments, to be worn generally by women. And thus it happens that mothers, who would otherwise protect their little ones from every harm and pain, will not shrink from subjecting them to an unnecessary, inexcusable, and painful procedure, only to adorn them with the coveted jewel. This explains why such a barbaric custom as that of piercing the ears could have survived to our present times.

It is, however, barbaric, not only because of its origin, nor on account of the crude methods by which it is practiced; but more so for the reason that not rarely more or less troublesome, and even fatal consequences have been observed after this procedure. It is my pleasure to report to you to-day a number of such sequelæ of piercing the lobes, some of which seemed to me to be of more than ordinary interest, although there are scattered in literature a goodly number of interesting cases. Before reporting my own, it may be opportune to mention a few of the observations made by others.

Hufeland saw a child die of trismus following piercing of the lobule of the ear.[1] Severe inflammation of the lobe, erysipelas of the ear, large granulations around the wound, cutting of the ring through the lobule, and hypertrophic thick scars are some of the possible sequelæ mentioned by Dieffenbach.[2] Fibroids (keloids) have been observed by many authors and are mentioned by Knapp, Agnew, Turnbull, Finley, Bürkner, Schwartze, Politzer, Bacon and others. They occur up to the size of hen's eggs, and are said to be more common among the colored than the white race. Politzer says[3] they are benign, no recurrence taking place after total extirpation. He refers, however, to the case of Agnew,[4] in which a tumor originating in a traumatic scar returned again and again. According to some observers, recurrence of these tumors is not at all uncommon. Knapp has called special attention to the fact that they are liable to recur, and that by frequent recurrence they may become malignant.[5] And in all cases of tumors of the auricle reported in this paper, recurrence has taken place several times. Sexton[6]

[1] Cited from Dieffenbach, Die operative Chirurgie. Vol. II, p. 78. 1848.
[2] J. F. Dieffenbach. op. cit.
[3] Lehrb. d. Ohrenheilkunde. 1893. p. 449.
[4] Trans. Amer. Otol. Soc.. 1882. p. 720.
[5] Cited by E. B. Dench, in Burnett's System of Diseases of the Ear, Nose and Throat. Philadelphia, 1893. Vol. I, p. 157.
[6] The Ear and its Diseases. N. Y., 1888, p. 112.

speaks of a cleft lobule from ear-rings, and saw even a portion of the lobule slough off. Kirchner[7] says that the lobule is not infrequently the seat of an eczema, originating by preference in the pierced holes. Altschul has reported death from gangrene, following piercing of the lobes in a girl of 9 months;[8] and erysipelas, sometimes fatal, is mentioned recently by Haug[9] as being occasionally caused by the reprehensible practice of piercing the lobule.

It would be easy to multiply the cases, but these will be sufficient to show that there are abundant observations on record to make one reflect, why the voices of physicians, or at least of otologists, are not raised against this "truly barbarous custom," as Roosa calls it. The following cases have come under my observation:

ERYSIPELAS OF THE AURICLE AND FACE.

Case 1.—The lobule was pierced in a child 2 years old, and this was followed by a severe attack of erysipelas, involving the whole auricle, auditory canal and part of the neck.

Case 2.—A lady, 20 years of age, who had not worn ear-rings for some time was, on attempting to do so again, obliged to use some force in placing them. Pain, redness and swelling soon developed in one ear, and the erysipelatous inflammation also involved face and scalp.

Case 3.—Also in an adult, and very similar to Case 2. In this case the general symptoms were very severe, and the erysipelas, after having spread over the face and neck, invaded the pharynx. The patient recovered.

DEFORMITIES.

Two cases of cleft lobule were seen, caused by the ear-rings cutting through. In the one case, both lobules were torn. The clefts were readily repaired by the operation advocated by Knapp,[10] by paring the edges and stitching the little flap left on the posterior lip over the corresponding portion of the anterior lip, thus avoiding a notch in the lobule. The result of the operation was good. The other case of cleft lobe was peculiar. It was that of a middle-aged woman, in whom the ear-ring had torn through the left lobule about ten years ago. Two years later she got tired of wearing but one ear-ring, and she had the left lobule again pierced, close to the old aperture. In the course of time this ring had also torn through, parallel to the old slit, and the woman had now a lobule consisting of three pendants. The narrow, central strip was removed, and the edges of the remaining parts united in the above described manner. The cosmetic effect was good.

One case of enlargement of the opening made for ear-rings, presented a peculiar and even ridiculous appearance. The hole on one side had gradually enlarged, from the weight of the ring, to the size of a lead pencil; and repair was desired by the patient, a young lady of 19 years, for cosmetic purposes. The edges were pared with a cataract knife, united by one suture, and healed readily. (A similar case is described by Roosa.[11])

ECZEMA OF THE AURICLE.

This has been observed in a number of cases to be caused by the wearing of ear-rings, especially when they had accidentally caused small tears of the cutis, and also after forcible placing of ear-rings, when the opening had been closed for some time. It was generally the acute form which was seen, causing swelling, excoriation, formation of unsightly crusts, and bleeding often upon the slightest touch. This form is, as a rule, very painful. Removal of the cause and treatment with ointments (for instance the ung. diachylon) were sufficient to produce a speedy cure. In two cases the eczema had reached the chronic stage; in one, involving the larger part of the auricle, and more especially the furrow along the insertion of the auricle. These cases were more obstinate, but yielded also finally to treatment.

TUMORS OF THE AURICLE.

Case 1. Fibroma (Fibro-chondroma) of Auricle.—The patient, referred to me in August, 1887, by Dr. Wright, was an unmarried lady, 32 years of age; white. Had been troubled as a child with painful swellings of both lobules, which caused her to discontinue wearing ear-rings at the age of 17. At the age of 22 she noticed that the old swelling in the right lobule, which had been pierced higher than is the custom, and very close to the antitragus, began to grow, until it had reached the size of a small cherry. Two years thereafter it was removed, but showed signs of recurrence within a year. Three years ago, and five years after the first operation, it was again removed, but began soon to reappear, until it had reached the size of a small chestnut, involving the whole lobus. Removal was effected by a V-shaped excision, and the edges brought together by sutures. The tumor had not returned two years after the operation, the last time I saw the patient.

The microscope showed within a dense connective tissue formation, the structural elements of cartilage sparingly interspersed. A case of fibro-chondroma of this region has also been reported by Strawbridge.[12] The appearance of cartilage in a tumor of the lobule, finds its explanation in the fact that the lobule is not entirely free of cartilage. There is, as W. His[13] has shown, an unciform strip of cartilage below the antitragus, called by him *lingua auriculæ*, which is the cartilaginous support of the lobule of the auricle.

FIBROMA OF THE AURICLE.

For the history of the following interesting case and the specimen I herewith present to you, I am indebted to my friend, Dr. O. Landman of Toledo, Ohio:

Case 2.—Mrs. C. E. J.; white; age 35. When 15 years old, her ear-rings were caught on a pillow, and both forcibly torn out. The wound healed, but later on a "lump began to grow" on both lobules. Two years afterwards both lobules were partially amputated. The left tumor has never returned. The tumor in the right ear returned six times, and reached an operable size about every three years. There were six operations after the first. Two years ago Dr. Landman saw the case for the first time, when the tumor had reached the size of an English walnut, involving the larger part of the auricle. He operated by amputating the entire auricle. About eight weeks ago the lady was seen again. There were at that time no signs of recurrence. The microscopic examination showed the tumor to be a characteristic fibroma, containing possibly a little more yellow elastic tissue than is usual in this kind of tumors, but which might be expected from the structures involved.

KELOID OF THE AURICLE AND FACE.

Case 3.—Miss E. P. H. of Indiana; white; 35 years old; was seen one year ago. When 18 years old a small nodule developed in the right lobule, close to the puncture. This began to grow, was painful, and was excised. Within the following seventeen years the recurrence of this tumor was the cause of untold misery for the sensitive woman. In the course of time she was operated upon six times with the knife, and caustics of every description and in untold quantities had again and again been used. Electrolysis and hypodermic medication had been tried in vain. The pain produced by these different therapeutic agencies,

7 Schwartze's Handb. d. Chrenheilk. 1893. Vol. II, p. 18.
8 Ibid.
9 Arch. f. Chrenhlk. Bd. 35, p. 142.
10 Archiv. of Ophth. and Otol., Vol. III, No. 1.
11 A Practical Treatise on the Diseases of the Ear. New York. 7th Ed. 1891. p. 104.
12 Trans. of the Amer. Otolog. Soc. 1875.
13 Arch. f. Anat. u. Physiol. 1889. V. and VI.

especially the caustics, and the frequently unbearable pain within the growth, had undermined her health. When I saw her, a little over one year ago, there was a solid sessile tumor, the size of about a silver quarter, extending from the region below the tragus into the cheek. The lobule and lower posterior half of the auricle were gone, and from the edge of the rest of the auricle a dense and unyielding cicatricial tissue extended into the integument below and behind the ear. The tumor was flat, about one-sixteenth of an inch elevated above the surrounding skin, ordinarily pale, and not sensitive to the touch. At the time of menstruation it was usually congested, and slightly more elevated, and caused, especially at such times, but occasionally also during the intervening period, the most intense and lancinating pain.

The tumor was removed by an elliptical incision in healthy tissues, care being taken to lift it with a portion of the subcutaneous adipose tissue from its location. After severing, by deep incisions, some of the cicatricial bands behind and below the tumor, I was enabled to close the wound by sutures. Primary union. There remained a thin linear scar, the pain disappeared within a few days, and there have been no signs of recurrence as yet, one year after the operation. On former occasions the tumor showed signs of reappearance within six months.

The microscopic examination, made by Prof. Kramer of the Cincinnati College of Medicine and Surgery, showed the removed tumor to be a true keloid. The epidermis was atrophied, and hairs, hair-follicles, and glands were entirely absent. The Malpighian layer was distinctly preserved, but there were only scanty traces of papillæ. Immediately below them, and arranged in layers parallel to the surface there was a dense mass of fibrous tissue in which here and there blood vessels, some compressed, appeared. Among the bundles of fibrous tissue, occasional elastic fibers were noticed, and also, frequently, groups of spindle cells. Below this was a looser connective tissue, with many cellular elements, and a gradual merging into adipose tissue. It is too early as yet to say whether the last removal will not be followed by a recurrence.

It is true that most authors insist upon the possibility, and even probability of a return of these growths after operations. But no treatment has as yet been devised that will actually give better results; while Erichsen,[14] though admitting their liability to return after excision, calls this their only treatment. And in this case, the almost intolerable sufferings of the patient, whose best years had been sacrificed in the battle with this baneful disfiguration, compelled me to do something that gave her at least a slight chance of a permanent cure.

These cases do not demonstrate anything new, but having occurred under my own observation lead me to believe that they are still more frequent than we usually think. And while in most cases no serious consequences result from the folly of piercing the ear lobes, yet there occur, from time to time, cases where a life is at stake, or where the enjoyment of life is seriously interfered with. It is time that this relic of barbarism ought to be relegated where it belongs,—to the by-gone follies of superstition and fashion. And the day is, I hope, not far distant, when it will be considered an evidence of brutality to have a tender and unprotected child subjected to such an unnecessary and mutilating procedure.

141 Garfield Place.

[14] The Science and Art of Surgery, Vol. II, p. 314.

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THERAPEUTIC INDICATIONS OF RHEUMATIC PATHOLOGY.

BY THOS. O. SUMMERS, M.A., M.D., F.Sc.S. LOND., D.D.S.
WAUKESHA, WIS.

Notwithstanding the fact that the literature of medicine is teeming with disquisitions and discussions upon the subject of rheumatism, there appears to be nothing within the whole range of pathologic investigation upon which the profession to-day stands so greatly at variance as upon this, perhaps the most cosmopolitan "of all the ills that flesh is heir to." Theory after theory has been propounded and exploded; remedy after remedy proposed and rejected until the whole "Pharmacopœia" has been exhausted, and the shelves of the apothecary crowded to overflowing with charlatan nostrums and proprietary preparations sufficient to float a fleet, in the apparently vain effort to find relief from this universal and intractable malady.

While, therefore, I do not propose to add anything to the fund of actual information on the pathologic principles upon which rheumatism is founded, I do propose to bring out and apply those principles in such a manner as to establish the true line of therapeutic action in its treatment.

It is very often the case that, in those diseases which are most common, the treatment is so generally ineffectual on account of the fact that our therapeutic leaders overlook the very simple pathologic principles which govern them, in their vain search for some occult factor in the problem which in reality does not exist. Most undoubtedly is this true in regard to the disease under consideration, as I hope I shall be able to demonstrate.

A great deal of the nebulosity which hangs about the subject of rheumatism arises from its peculiar relation to those specific disorders with which it has been classified by pathologists as *cousin-german*—such as syphilis, scrofula, tuberculosis *et id omne genus*—known to ultimate pathologic analysis as *leucocythemic* in origin.

I do not know that I could introduce this discussion in a more striking manner than by the relation of a little incident which occurred to me some eighteen years ago, while an associate editor of the *Nashville Journal of Medicine and Surgery*. Being the youngest of the editorial staff, the "*make-up*" of the *Journal* was left to my supervision. Our old foreman, "Father" Brown, as we familiarly called him, was a regular copy-*fiend*. He was never satisfied without a lot of extra "*live matter*" from which to select in "making up." One day I entered the composing room and was greeted by the old man with a regular tirade, on account of not having just the amount of matter necessary to fill out a little space, and he wanted me to prepare it at once. I snatched up some galley proof paper and began to write just what came first into my head. I had just left my microscope, upon the stage of which was resting some preparations of corpuscles from pus, from rheumatism and from normal blood which I had been comparing. So in the little "take" which I handed over to the old foreman I simply announced the conclusion at which I had arrived only a few moments before, that the cause of pain in rheumatism was undoubtedly due to the migration of the white blood corpuscle which, continuing to live out-

side the vessels, not only appropriated nutritious material to its own use at the expense of the normal tissues of the body, but became bloated with riotous living, swelled up inordinately and impinged inconveniently upon space belonging to the delicate nerve filaments distributed to contiguous structures. It was, indeed, a new conclusion to me, but I was no less surprised than pleased some time thereafter to find the little item copied by the *London Lancet* with due credit, and with a tacit, but yet apparent indorsement, and from this it went the whole rounds of the foreign and American medical press.

I may say that *I have since then found no reason to contradict or modify the conclusion then so casually and cursorily made.* On the contrary, starting with this, I carried my investigation and my reasoning farther in the same direction and was astonished to find what a wonderful field of fact was opened up before me. I saw at a glance the many and wonderful pathologic conditions capable of being brought about by this migrated corpuscle—this "*Wandering Jew*" of the organism. Protean in relation as in form, and as a vital physiologic unit capable of independent life, a most dangerous element in all pathology, involving assimilation of pabulum, and nutrition of structure.

At the risk of becoming trite in the eyes of those who are continually occupied with pathologic investigations and are familiar with pathologic technology, I shall review in a cursory manner the structural morphology and the functional relationship of this *white blood corpuscle* or *leucocyte*, from its first active appearance in the blood, directing and controlling as it were the distribution of nutrition from within the prison walls of the blood vessels, to its wanton wassail while carousing over the spoils of the organism after escape from its forced vascular confinement. In this connection it may not be uninteresting, even to the most of the JOURNAL readers accustomed to the microscopic views of the amœboid movement, to observe the relationship which exists between the corpuscle, as it floats in the plasma, and the corpuscle freed from its physiologic restraint. Unlike its red companion it has a vitality of its own and depends not for its existence upon a fixed and necessary environment. Take the red corpuscle from its home in the plasma of the blood in which it purls along content with its surroundings, and doing quietly and submissively the behest of the organism in carrying and delivering its freight of vivifying air. Not only is it content with its environment, but it can exist under no other conditions, and the moment it is removed from its normal surroundings it sinks at once into retrograde metamorphosis and final death. Not so with the white corpuscle. From the first moment of its physiologic existence it engages in an endless struggle for freedom. In its course through the organism it tries every osmotic crevice in the walls of the blood vessels, taking every shape that it may deem better adapted to its escape from prison. On its exit from the "pent-up Utica" of its tubular jail, it sets up housekeeping on its own account, and its extravascular or pathologic life is far more active than its physiologic existence, for it really seems to begin life in earnest when freed from the restraint of physiologic law. So strikingly is this manifested that pathologists have often been led to wonder why an element so necessary to physiologic integrity should show its greatest activity under pathologic conditions—a question which the limits of this paper do not permit me to discuss in this connection.

There is, however, a point which requires our attention just here, and that is that a low nutritive condition of the blood is peculiarly favorable to the migration of the white corpuscle. Where the plasma is thick and charged with nutritive elements there is little room left in the osmotic spaces for the escape of the corpuscle, and besides it is kept in a state of constant activity in handling the nutritive freight of the organism, if we may be allowed to carry out the metaphor, to find time to look for avenues of escape, for in the physical as well as in the moral world,

"Satan finds some mischief still
For idle hands to do,"

and the greater number of pathologic conditions arise from inactivity of function, rather than from lesion of structure.

This relation of the poverty of the blood to the increased migratory tendency of the white corpuscle will suggest at once to the thinking mind the therapeutic indication in the pathologic premises. It will be clear that anything that favors osmosis, that excites absorption, thus occupying the avenues of escape with nutritive material, will not only arrest migration but prevent the preying of the corpuscles which have already escaped, upon surrounding structures. Foremost among such agents stands iodid of potassium, which seems to have a more marked effect, both in regulating the physiologic activity of the white corpuscle and in protecting the tissues from its ravages when once it has escaped and become ensconced among them. It is, then, not in the least surprising to find that in all those diseases which have been referred to as *cousin-german* to rheumatism, marked as they are by an increase of the white blood corpuscles in proportion to the red, iodid of potassium has even empirically become a standard remedy. Anything, too, which excites secretion, will also tend to check this migration and neutralize the pathologic effect of the corpuscle. And above all other therapeutic agents which have been proved effectual in this relation calomel rears its head; whatever malediction and abuse have been hurled at this grand old remedy, like Banquo's ghost, "it will not down," and a sad day it will be for medicine when, through the fashionable tendencies of the times, the profession becomes too cowardly to use a remedy that the experience of ages has tested and indorsed.

Upon the basis of what has been said, therefore, I offer my own method of treatment in rheumatism, both chronic and acute, and though the remedies may seem old fashioned, the proportion used and the manner of their combination prove their practical value and, substantiated as they are by the pathologic indications, I always administer them with confidence.

At night, before retiring, I order a hot mustard foot bath and the following prescription:

℞. Pulv. Dov gr. xv.
Hyd. chlor. mit gr. x.
M. et. ft. capsul. No. ij.
S. Take both before retiring.

I always direct these capsules to be taken with a solution of bicarbonate of soda 3j, to water 3vj.

Go at once to bed and *stay* there. In the morning, if there is no action on the bowels, give a bottle of solution of citrate magnesia freshly prepared. I then order the following:

℞. Potass. iodid ℥ss.
Vini colch. rad } āā
Fl. ext. sarsæ }
Tinct. cinchon. comp } ℥ij.
Mix.
S. Dessertspoonful in half a glass of water one hour after each meal.

Sometimes this dose must be varied on account of idiosyncrasy—this the physician must decide in each particular case.

This treatment usually gives relief and is founded upon a true and solid pathology.

OBSTRUCTION OF THE BOWELS.

Read before the Medical and Chirurgical Faculty of Medicine at the Semi-Annual Meeting held at Annapolis, Nov. 23, 1893.

BY EDWARD ANDERSON, M.D.
ROCKVILLE, MD.

I have had a good many cases of this trouble, as all of you who have been in practice for a number of years must have had. On being summoned to the bedside of a patient suffering from obstruction of the bowels there are three questions we should ask: What has the patient been eating? What doing? And whether he or she is of a constipated habit?

Although I have never seen complete obstruction caused by scybala, I have seen it sufficiently so to have caused death had not timely remedies been employed. I will mention a case in point later on.

I have always been able after a few hours' attendance to discriminate between those cases which required surgical interference and those which did not. If complete obstruction occurs suddenly, accompanied by pain sufficiently intense to require the administration of large doses of opium oft repeated, enemas having failed, surgical aid should at once be procured; but if the pain is not intense and we find that hard substances upon which the intestinal juices are unable to act have been swallowed, we can afford to wait, and try other means. Any smooth substance small enough to pass through the esophagus, will be sufficiently so to pass through the intestinal canal, and any number of small bodies collected together in the bowel can be dislodged without resorting to laparotomy. If we know that a large solid substance has been swallowed the best plan to pursue is to allow no purgatives to be given, and to keep the patient as much as possible on solid food until it passes. Large enemata should first be employed in every case of obstruction, particularly so when we have reason to believe that masses of small bodies cause the difficulty; and in suitable cases small doses of calomel repeated at short intervals should be used at the same time. If we can not do for our patients the very best that can be done, we ought to seek the aid of some one who can. This has always been my motto, but our best endeavors are sometimes thwarted, as the two following cases will show: on August 25, 1885, I was called to see a mulatto woman in good circumstances, about 45 years old who the messenger said was suffering from severe cramps. I found her with intense pain in the umbilical region, severe enough to require the hypodermic injection of a fourth grain of morphia every four hours. I threw a large amount of warm water into the bowel which removed some very hard fecal matter, but after that nothing could be brought away; even milk came out of the bowel as white as when thrown in. I told the family at once that an operation would be necessary; this was unwelcome news as such news always is, especially to the ignorant, and of course the family wanted a consultation. On the second day a consultant was called in who threw out the hope that the recovery might take place without an operation; he proposed that we should give 2 grains of calomel every four hours in addition to the hypodermic of morphia and the rectal injection of milk with which I was sustaining her. Not being able to persuade the husband and children to call in a surgeon, I abandoned the case on the fourth day. I understood from those who were present that the treatment that I inaugurated was kept up until the patient's death, which occurred on the eighteenth day. Although vomiting was incessant from the beginning, it did not become stercoraceous until near the close of life. This woman's alarming symptoms came on immediately after drawing water from a well with a rope, hand over hand, without even a wheel to assist her. What condition the bowels were in I do not know, as no autopsy was held.

A little over two years ago I was called to see a negro woman about 50 years of age who was suffering from intolerable pain in the umbilical region, accompanied by incessant vomiting, which became stercoraceous on the first day. I gave her a hypodermic of one-fourth of a grain of morphia every four hours, and at the same time threw large quantities of warm water into the bowel with the effect of producing one action only, without checking the vomiting in the least. A half gallon of water that I injected was retained until the next day.

When obstruction of the bowel takes place, peristaltic action is lessened, even below the obstruction which favors rectal alimentation. I tried to procure the services of a surgeon in this case but failed to do so. On the third day I succeeded in obtaining the services of a gynecologist, but after he came I could not prevail upon him to open the abdomen, though laparotomy was of almost daily occurrence with him; I had seen him perform supra-vaginal hysterectomy for a large fibroid and do it as skilfully as any one could, yet he hesitated where the bowel was concerned, and told me to go on with my treatment until the next day, when he would come again and operate, if no change for the better had taken place. When he came again she was too weak to be operated upon, it being the fourth day of her illness, and she died at noon that day. Had I known that I could not have this woman operated upon I would have opened her abdomen myself, though I had never performed laparotomy. On opening the abdomen after death, a stone was seen just below the umbilicus, occupying the most constricted part of the ileum and almost as plainly visible through the transparent bowel as it is in my open hand. The first case of obstruction I was ever called to attend was that of a child 10 years old, the daughter of a farmer. The parents were intelligent people and had diagnosed the case properly before I arrived. They said the child had been eating cherries and they supposed had swallowed the stones, which had collected in the bowel. Three tablespoonfuls of castor oil had been given without effect. I gave a teaspoonful of paregoric to relieve the pain and used the syringe every hour during the night, with the result of bringing away a half pint of cherry stones and completely relieving the child.

An old lady, a patient whose bowels had been obstructed for a week and who could not stand the use of enemas was put upon one-sixth of a grain of calomel

every two hours for two days when the obstructing mass was removed which proved to be tomato seed. The pain she had suffered, the subsequent laxness of the bowels and a slight constitutional effect of the mercury caused her death a few days thereafter. I saw a case which was in charge of another physician, where a boy of 12 had his bowels obstructed during the Christmas holidays. In this case 2 grains of calomel were given every four hours, together with the employment of injections for three days without relieving the child, when a surgeon was called in to operate. He did not operate, however, but injected senna tea through a long tube at intervals for twelve hours when the obstruction was removed, which proved to be nuts partly masticated and held in position by the gum of raisins, of which he had also eaten freely. Had not the calomel been used in this case, I do not believe that enemas would have succeeded, for the gum from the raisins came away in flakes showing that it had formed a cast of the bowel. On August 17, 1889, I was called to see a lady of 50, on account of pain in and distension of the abdomen. I found her with a temperature of 102 degrees F., very much distended and pain sufficiently severe to require a dose of morphia. I knew she was of a constipated habit, and also that she had been living largely on constipating food, milk, and sweet potatoes; although there was slight diarrhea present I felt confident that there was almost complete obstruction from impacted fecal matter. I ordered large warm water enemas and began the use of purgatives. I gave 12 grains of blue mass at night, and a teaspoonful of Rochelle salts the next morning, and repeated the dose of salts every four hours from August 18 to September 4, with temporary relief, but on September 26 she was as bad as ever; when I commenced the same treatment again, and kept it up until October 28, with the result of bringing away a large amount of hardened matter which had probably been accumulating for years. This lady has not been sick since. We rarely meet with a case so pronounced as this, but it is wonderful how many there are which resemble it, particularly in females beyond middle life who lead sedentary lives.

The following case was the most interesting that ever came under my care: On Nov. 14, 1887, I was sent for to see a little girl on account of threatened convulsions; the child was 16 months old and belonged to a highly neurotic family. She was the most precocious child I ever saw, being able to run about the streets and speak as plainly as most children of 3 years. I found her with the left side of the face twitching violently. The mother said the child's throat was sore and she thought that she had diphtheria, but an examination revealed nothing indicating it. According to previous instructions, if a case of convulsions should occur the parents had given 5 grains of bromid of potash, which I told them to continue at intervals of four hours until I came again. I went back some hours later and learned that the child had had several general convulsions, and she showed by the way she acted that she had pain in the abdomen. I gave a full dose of calomel and left orders for the bromid to be continued as before. The calomel acted freely, and brought away a large stool, with several pieces of apple core in it, but this did not mend matters for a severe spasm came on while the bowels were moving. The bromid was kept up for four days but did not stop the convulsions, four or five occurring daily. The father thought the bromid aggravated the case, as a convulsion came on after each dose, so I substituted 2 drops of tincture of belladonna, after which no more convulsions occurred, but partial paralysis of the left side was noticed, the temperature being 103 degrees F., with exhaustion sufficient to require a teaspoonful of whisky every four hours. At this stage of the case a consultant was called who had had forty years' experience in Washington, and for a great part of the time was physician to a large foundling asylum. He came on three successive days, and each time said if the child was living in the morning he would be back—showing he had no idea of its recovery. The bowels never moved except when a purgative was given. I will not weary you with the details in this case; suffice it to say that the child hovered between life and death; that it taxed my skill, and the patience of all its relatives to the utmost until the first of January, 1888, when a slight but perceptible improvement took place. On the tenth day of February of the same year it passed a china button, the largest size that is made. Although she could neither walk, talk, chew or swallow, unless liquids were poured down her throat, the child continued to improve, and at the end of nine months was able to walk—but the power of speech was never restored. Twelve months after the beginning of this trouble the mother in great glee sent me word that her child had bitten a piece out of a cake and swallowed it; improvements with many setbacks went on from Jan. 1, 1888, to Jan. 1, 1889, when a weight of thirty pounds was attained. I neglected to mention that when this patient first gained strength enough to be weighed, her weight was only twelve pounds. On February 5, she was attacked with pneumonia and died on the eleventh. Though I was in the house several times a day sometimes remaining an hour, I never heard her cough, or the slightest sound like it, the reflexes having been destroyed. There were a great many points of interest in this case: 1, the obscure nature; 2, the failure of bromid of potash to check or stop the convulsions, while at the same time protecting the brain to the extent of saving life; 3, the great length of time the obstructing body remained in the bowel; 4, the family history: The maternal great aunt became a deaf mute from a fall when 3 years old; she is now 70 and still deaf and dumb. The maternal grandmother told me seven of her near relatives had died of tetanus, some being members of her immediate family. Although we believe tetanus to be a germ disease, like all other germ diseases, it has a predilection for certain families; 5, absence of cough during pneumonia, which ended in death.

I have seen in consultation some cases of complete and some of partial obstruction caused by appendicitis, but the diagnosis was made too late to be of avail. I merely mention those cases which came under my observation, which were relieved, or ought to have been relieved.

THE HEIRS of Senator Jacob Moleschott, the famous explorer, teacher and physician, have given his valuable library, containing over 40,000 volumes of medical, philosophical and scientific works, to the Academy of Turin, where the dead man began his labors.

HYSTERECTOMY BY THE PRATT METHOD—THE SURGICAL ASPECTS OF HYDROCEPHALUS.—AN OBSCURE CASE OF HEMATURIA.—OPERATION FOR STRICTURE OF THE RECTUM.[1]

BY EMORY LANPHEAR, M.D., Ph.D.

PROFESSOR OF OPERATIVE SURGERY AND CLINICAL SURGERY IN THE KANSAS CITY MEDICAL COLLEGE.

Mrs. B., a patient of Dr. R. A. Brogan, Osage Mission, Kan., who has been sent to the Hospital for operative treatment. She is 54 years of age, married at the age of 20, never pregnant, always in good health, but naturally thin. At about the age of 47 she ceased menstruating and passed through the climacteric without difficulty. Some two or three years subsequently she noticed a slight heaviness in the pelvis, and consulted her physician, who told her that she had some form of tumor growing in the womb. A little more than four years ago she began to have hemorrhages at irregular intervals. These attacks of bleeding have increased in frequency and intensity, until, as you see, she is exsanguinated and almost a skeleton. Examination of the case upon her admission to the Hospital showed that she had an intramural growth which was undergoing decomposition, and that she was suffering from septicemia induced by the absorption of the sloughing intra-uterine mass.

I made a laparotomy upon this patient with the expectation of doing one of two things: 1, removal of the uterus and tumor by suprapubic hysterectomy, if possible; and 2, if this could not be accomplished, I designed tying the ovarian arteries as a preliminary step to the operation. Upon opening the abdomen, the uterus was found so enlarged and fixed in the pelvis, that it was impossible to remove it by abdominal hysterectomy; and as the ovarian arteries did not seem to be filled with blood, I immediately closed the incision in the abdominal wall without doing anything further.

The patient now being chloroformed, I do the newest form of hysterectomy, that advised by Dr. E. H. Pratt of Chicago. In this particular case it is necessary to do two things that are not mentioned by Dr. Pratt. The first of these consists in slitting through the perineum and the perineal body so as to allow room for work, because this lady has a very close introitus, which would prohibit any manipulation within the pelvis. The next step is to temporarily tie the uterine arteries by the method which has been advocated by Dr. Franklin H. Martin of Chicago. Dr. Pratt, in his description of his method of hysterectomy, says that the preliminary tying of the uterine arteries is not necessary; but as this particular case bleeds so freely as to interfere with the operation, and at the same time jeopardizes the life of the patient, I have deemed it best to add this step to the plan advocated by Dr. Pratt. Having tied the uterine arteries, I pack the canal tightly with gauze, then cut with a knife entirely around the cervix through the mucous membrane and the submucous tissue, until I reach the free and loose connective tissue which envelops the body of the uterus. Dropping all instruments, I introduce my fingers within the slit, and rapidly tear away the uterus and its tumor from the peri-uterine structures. This is very rapidly accomplished. As I reach the vicinity of the fundus, I exercise a little more caution in the separation, lest I should penetrate the peritoneum which covers the uterus at this point. The separation is easily and rapidly accomplished, and with almost absolutely no hemorrhage. Indeed, it is surprising that there is not more loss of blood, and almost equally so is the ease and rapidity with which the enucleation was accomplished. For the removal of the uterus and the tumor, not more than ten minutes were required. The whole operation, including the sewing up of the perineum, and packing the cavity with iodoform gauze did not take us more than twenty-five minutes.

It seems to me that this operation will prove an admirable one for cases of this kind, and it is possible that it is also applicable in cases of early epithelioma of the cervix; but usually when cancer of the os has advanced far enough to be recognized by the physician there has been infiltration of the tissue above and implication of the tubes and ovaries; so that complete hysterectomy with removal of the tubes and ovaries per vaginam (or through the abdomen) is the only treatment to be recommended.

[1] Clinical lecture delivered November 14.

HYDROCEPHALUS.

The second case which I present to you is a little patient who is being treated by Dr. H. E. Pearse. The child is 5 years of age, very small in development, but with an enormous head. At birth she was normal in every particular, and was as other babies are until the age of 5 or 6 months. At this time she was attacked with meningitis, or cerebrospinal meningitis; from this time on the head gradually enlarged and the child became idiotic, until to-day it presents the typical symptoms of chronic hydrocephalus—small in development, with a head which measures twenty-five and one-half inches in circumference, and eighteen inches from ear to ear, with strabismus and the idiotic countenance.

The reason this child is brought to the surgical clinic is to ascertain whether or not anything can be done for its relief by surgical measures. Dr. Pearse recognizes the fact that in a case of this kind, there is nothing but drainage of the ventricles or subdural space, which promises any hope. Results from the surgical treatment of these cases have been quite favorable, though the death rate has been much higher than in other operations upon the head; about one case in five recovers entirely; two improve and two die. The history of a successful case is usually about like that given by Illingham:

The patient, a boy of 3 years, was hydrocephalic from the age of 9 months; was unaffected as to intellect, but suffered from sleeplessness and pain; a trocar was introduced into the ventricle and a considerable quantity of clear, serous fluid allowed to escape; drainage was made with a collared cannula, but this was pushed out inside of two weeks, and an uneventful recovery resulted.

A considerable number of similar cases can be found in recent medical literature. On the other hand, an equally numerous group can be collected like the following record in my own case book:

Girl, age 4 years, hydrocephalic from the fifth month; head measuring twenty and one-half inches in circumference and fourteen inches from ear to ear; head hard; was trephined April 25, and drainage of ventricles established; temperature was never higher than 100, but from time of operation, strength (always poor) began to fail, and child died of exhaustion May 1, six days after operation.

The operation consists of removing quite an area of the skull, an inch or more by two inches, and then waiting a day or two until the brain has accustomed itself to the change in pressure; then a cannula is thrust into the ventricle (or subdural space) and fluid allowed to escape. As a result of long-continued experiment, it may be stated that the central cavities may be drained either from the anterior cornua by going through the frontal lobes, from the posterior horns through the occipital lobes, or from the body of the lateral ventricle through the parietal convolutions. The procedure for the first is to push the hollow needle horizontally inwards through the posterior extremity of the second frontal convolution; for the second, the needle must be inserted through the posterior extremity of the superior temporo-sphenoidal lobe; and for the third, the needle is thrust through the lower end of the second parietal convolution.

The quantity of fluid withdrawn must vary according to the size of the head and the effect produced. In some cases, several ounces can be allowed to escape; repeating the tapping in a few days; in others it is best to insert a strand or two of sterilized silkworm gut, and allow permanent slow drainage to proceed into the antiseptic dressings, which must be changed as soon as saturated. If too much fluid escapes,

convulsions will follow; this mischief may be rectified by injecting normal salt solution to the amount of an ounce or more, and temporary arrest of the drainage; or, as I prefer, iodoform emulsion may be used for injection purposes.

Sometimes traumatic hemorrhage into the ventricles is a complication. In such a case, the advice of Keen is to be followed: instant trephining and evacuation of the clots. Its early recognition, however, must be very difficult.

In this particular case, it seems to me that operation is entirely out of the question, in the physical condition of the patient, as she is suffering from a subacute bronchitis and from an edema of the glottis, from which she nearly suffocates at each paroxysm of coughing. Many of these cases die from pulmonary and laryngeal complications; and it is probable that this little patient will end its life in this way. If, however, the Doctor is successful in treating the present trouble, we can then explain the possibilities of the operation to the parents, and follow the plan which I have just described if they decide in favor of having it done.

A CASE OF HEMATURIA.

Our third patient, a gentleman age 55, has been sent by Dr. C. L. Burke of Argentine, Kan., for diagnosis. He is evidently neurotic, confesses to impotency, and complains of passing bloody urine at irregular intervals. He comes seeking relief from the latter, to which he ascribes his ill health; he is directed to this clinic for us to determine if he needs surgical treatment. The first thing to decide is whether he has hematuria or hemaglobinuria—as in each the urine may be tinged red. We may exclude hemaglobinuria by the fact that there is no cause, that is, there is no continuous use of certain drugs, like potassium chlorate, glycerin, some of the anilines, etc.; no partaking of certain edible fungi; also by the fact that this trouble has persisted for more than two years; hemaglobinuria commonly being a transient condition whereas hematuria may be long continued. But we must remember that there is a well-defined disease characterized by hemaglobinuria as its chief symptom, generally paroxysmal as in this case, and sometimes long continued; but questioning reveals the fact that the blood has appeared almost daily for months, though not always; and is not associated with exposure, a chill or violent emotion; and examination of the urine with the microscope (by Prof. Jos. Sharp) shows the presence of blood corpuscles in great abundance. So we are compelled to decide that we have hematuria and not hemaglobinuria.

Is the hematuria of urethral, vesical or renal origin? Let us see.

The endoscope reveals no pathologic condition of the urethra anteriorly and the steel sound shows nothing but a hyperesthetic deep urethra. Examination by the finger in the rectum detects an enlarged prostate; but this is usual in men of his age; and if the hematuria were dependent upon this cause it would be preceded by and associated with a marked vesical catarrh. There is no history of such a trouble and the microscope fails to show pus cells, triple phosphate and large quantities of bladder epithelium, as would be the case in vesical catarrh—so we exclude the urethra and the prostate from etiologic factors.

We now pass the hollow sound into the bladder and make careful search for calculi; none being detected the sound is made to traverse the whole area of the bladder walls, inch by inch, to discover epithelioma, papilloma or other form of tumor which might act as a cause. The sound gives no evidence of abnormality, and the patient manifests little signs of discomfort, so we would conclude that no pathologic condition exists in the bladder; but to be sure that the manipulations have caused no bleeding the bladder may be partially filled with warm boric solution, and this passing away uncolored confirms our opinion. There being no urethral and no vesical cause discoverable, we are forced to believe the hematuria of renal origin.

Examination, is therefore, made to determine whether or not it can be relieved by surgical treatment. Auscultation gives no evidence of cardiac lesion, percussion discloses no cirrhosis of the liver and palpation reveals no abdominal tumor—the three causes of obstruction to the return of blood from the kidneys. There is no history of colic, no pain, no tumor in the region of the kidney and no pus in the urine from suppurative pyelitis—the usual symptoms of renal calculus.

Having by exclusion, reached the conclusion that this is not a surgical case, I am compelled to send the patient to the medical clinic, as it is certain that the hematuria arises from embolism or thrombosis (the latter usually dependent upon atheroma or calcification of the vessels of the kidney), in which case the collateral hyperemia gives rise to repeated escape of blood into the tubules or into the pelvis of the kidney; or to nephritis; or to disease of the renal vessels, (aneurisms, etc.); or possibly to some depraved condition of the nervous system.

STRICTURE OF THE RECTUM.

The last patient is a colored woman of 24 years, who has a stricture of the rectum of three years' duration; it has become very close and greatly interferes with the patient's comfort and health. When she is under complete anesthesia I insert my knife through the stricture, pass it directly backward to the coccyx, and at one sweep cut through stricture, sphincter, skin and all. The inferior hemorrhoidal artery is caught and twisted, the rectum and wound thoroughly irrigated and the whole quickly packed with iodoform gauze, secured by a pad and a T bandage. The gauze may be removed at the end of forty-eight or seventy-two hours and the wound allowed to heal by granulation.

The subsequent history of a case of external proctotomy, as this operation is called, is usually quite satisfactory; far more so than in internal proctotomy (division of the stricture without cutting the sphincter or the anus) which has often been followed by pelvic inflammations, septicemia and even death. In some cases no attention is needed after the removal of the gauze, but in others it is necessary to pass a large rectal bougie from time to time to prevent too marked contraction of the cicatrix. Restoration of the function of the sphincter occurs in from a fortnight to two or three months.

PERITONITIS AND POST-OPERATIVE SEPSIS.

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The peritoneum is a "sacred sac," and he who permits the surgeon to enter therein with unclean hands and dirty instruments will suffer (not from his own iniquities), but from the septic agents introduced into the peritoneal cavity. Cleanliness is next to godliness in intra-peritoneal surgery.

Peritonitis is a disease of the gravest character, presenting many varied types and symptoms. One case dying with a diffused septic peritonitis with a sub-normal temperature and a pulse of 55; another seemingly with the same local pathologic process

present, will have a temperature reaching a dangerous hyperpyrexia, with a pulse of 180. In one case you will find a distended abdomen, filled with paretic bowel and rigid abdominal muscles, and writhing from the pain. Again you will find a case with a like origin, with a flattened abdomen, free from pain and tenderness, and at the *postmortem* find very little evidence of so grave and rapidly fatal malady. It is from this obscurity or irregular run of the disease (peritonitis) that I have added to this discussion post-operative sepsis—a condition often mistaken for and treated as peritonitis. It is generally admitted that, with the exception of the tubercular peritonitis, this disease is always of a traumatic origin. That there exists an immunity, more or less, to septic invasion in the peritoneum, no one will doubt. This serous membrane with its endothelial covering has the power of digesting large blood clots and gelatinous extra-uterine babies, if these foreign bodies are of an aseptic character. I have seen the victim of a ruptured tubal pregnancy of tenth week recover without any operative procedure, the extravasated or free blood in the peritoneum being absorbed within a few weeks. Unfortunately this is not the usual history of these cases when not relieved by a surgical procedure.

A form of peritonitis often met with by the abdominal surgeon is one due to a ruptured ovarian blood cyst, abscess or pyosalpinx. A case known to have a collection of pus in the pelvis, should with no exception, be operated upon at once. It is true in many cases a little leakage may take place from a Fallopian tube filled with pus, and the woman escape with only a slight localized pelvic peritonitis, followed by the invariable intestinal and omental adhesions endangering her life from a strictured gut, dilated ureter and surgical kidneys, ruptured gut or bladder. The next attack may prove fatal by the local process becoming a diffused one.

There seems to be a peculiar immunity established by a slow vaccination or inoculation process, in many of these old pus cases.

I have repeatedly in "hulling out" old ovarian abscesses had a pint or more of pus escape into the pelvic cavity, and with irrigation and a drainage tube, these cases do well. If in this same case you place your patient in Trendelenburg's position and the pus is permitted to flow toward the diaphragm or in that portion of the cavity not protected by the local inoculation, as is the pelvic peritoneum, the patient will surely have greater dangers to encounter and many will die from a peritonitis regardless of the prophylactic irrigation and drainage.

The abdominal peritoneum is much more susceptible to septic invasion than the pelvic under all circumstances. You see this in comparing the recoveries in two cases where the uterus has been removed, one by vaginal, the other through an abdominal incision. In one case the operation is performed through a septic cavity, and yet the cases have a convalescence compared by one author to an "ideal puerperal getting-up." It matters not how much irrigating fluid is used, where an abscess has ruptured into the peritoneum, all the septic matter can not be removed; even though a microscope be brought to the surgeon's assistance, he could not remove it all. A few drops only of the last irrigating fluid or the fluid from the drainage tube, introduced into a clean, healthy peritoneum may induce a rapidly fatal septic peritonitis.

In appendicitis you have an acute process in the "upper peritoneum," the pus being of a most virulent character, a small quantity of which is sufficient, if turned loose into the general cavity, to produce a rapid and fatal peritonitis. Hence the practice, in operating for a "walled off" appendicitis, of never attempting to break up adhesions for fear of entering the general cavity, an accident or procedure sure to lead to the development of a dangerous or fatal peritonitis. In ovarian abscesses or *intra-pelvic* inflammatory processes, the wise procedure is to break up all adhesions, remove diseased structures and liberate healthy organs.

In gunshot, stabbed and other wounds involving the hollow viscera of the abdomen, a fatal termination is always expected (rare exceptions), from a peritonitis induced either by the weapon, missile or the escape of visceral contents teeming with pathogenic bacteria. In such cases the surgery must be *early* and *thorough*.

A large abdominal incision increases the dangers from septic invasion, and at the same time exposes the intestines to more handling and consequent injury. A bowel that has been exposed for a time of long duration to the atmosphere, and has been permitted to become dry and blanched, has sustained sufficient injury to materially injure its functionary powers, and any agent, be it what it may, in abdominal operations that interferes with the function of this canal endangers the life and safety of the patient from the dangers attending a peritonitis. The intestines are one of nature's sewers (drainage tubes), the function of which is to absorb through the peritoneum, fluids in the abdomen, and to eliminate the same. *In a paretic bowel this function is reversed.* The peristaltic action is retarded or lost, the absorptive and digestive functions suspended, and the eliminative action absent, the contents of the paralyzed gut, already teeming with pathogenic bacteria, act as an inoculated culture tube with its two ends sealed; gases soon form in large quantities, the muscular and serous coats are dilated and thinned until the microörganisms find easy avenues of escape from the intestines into the peritoneal cavity, the function of which, as a protecting agent, is soon lost, and its great cavity converted into a vast bacterial hotbed, and the patient's whole economy saturated (from this source) with these poisonous germs and their ptomaines. Such is the progress of invasion where there have been no germs introduced into the peritoneum from without, but where the operation has been a prolonged one, with the consequent handling of the intestines and resulting injury to the great sympathetic system as a result of the prolonged exposure and traumatism.

I have seen a case go on the table with an intestinal canal empty and as flat as a tape line, and within two hours after operation find it enormously distended as a sequelæ of prolonged and unavoidable handling. All operations within the abdomen should be quickly performed by skilled and clean hands. It has occurred to me, as a good and safe procedure, where the bowel is so enormously distended and refusing to expel its contents of liquid and gases, to perform, under cocain anesthesia, a right inguinal enterostomy, wash out the intestines with an antiseptic solution, as boroglycerid, salicylic acid or boracic acid, this to be repeated as often as necessary. Other drainage should be carried out. This

opening in the bowel would permit the gas to escape unobstructed by a sphincter and would give an outward drainage; it would reverse the poisonous endosomosis, and it would give the paretic gut the best chances to regain peristaltic function and tonicity. This procedure would relieve the vomiting which is one of nature's efforts to rid the canal of its offending contents. The stomach is the last of the alimentary organs to lose its contractile powers. A paralyzed peritonitic bowel will not empty itself through a hypodermic needle, but with an opening such as I have advocated, the gut will collapse and the patient will quickly feel greatly relieved from the oppressed breathing, irregular heart action and the pain from the distension. If the patient recovers, the opening can be safely closed at any time. This procedure, I think, should be resorted to early in the most desperate cases where experience has taught that all similar cases have died without it. This procedure, when salines fail, offers the best chances for the relief of the "trinity—peritonitis, tympanitis and vomiting, the furies of abdominal surgery." (Greig Smith.)

Before resorting to this procedure, salines and injections should be given a fair trial.

The usual operation for peritonitis is the procedure for the removal of the exciting cause, as appendicitis, suppurating dermoids, postpartum poisoning, etc.

The consideration of the fever following labor is one at this time receiving much attention, and is now, as it was by Dr. Holmes, fifty years ago, recognized as being of septic origin, the poison being often carried or introduced into the genital canal by the physician. An exception to this being the auto-genetic type—where the woman at time of delivery has a real pathologic process which sustains an injury during parturition and leads to the development of a peritonitis—as an abscess in an ovary or a pyosalpinx. The treatment here is the same as for other forms of peritonitis. Remove the source of infection. Unfortunately all treatment of diffused septic peritonitis has proved futile. *Only early or abortive surgery* will check the rapid and dangerous invasion of this disease. All abdominal operations should be performed under absolute aseptic precautions. The smallest incision compatible with the work to be done; the shortest period of anesthesia and the most rapid operative work leaves the patient in a condition the better able to withstand or combat any tendency to destructive invasions. Irrigation with hot sterilized water, followed by intelligent use of drainage tube, should be practiced in all cases where there exists a suspicion that the case is a septic one. These agents are used here as prophylactics. The intestinal canal may be "toned up" by giving 20 drop doses of tincture of nux vomica three times a day for a few days before the time set for the operation, and continued in form of strychnia hypodermically for days afterward. An empty stomach and intestinal canal will cause these organs to be handled and exposed less during the operation, and will conduce to the safety and comfort of the patient from vomiting and gaseous distension. If the intestines are empty the peritoneum will absorb and digest much better the fluids in its cavity. Withhold fluids for several hours after the operation. If excessive thirst exists give an enema of six ounces of peptonized milk. Avoid sweet milk and eggs by the stomach, as these articles of diet are gas forming agents. Avoid all preparations of opium. If it becomes necessary to give any form of this drug give codeia. If drainage is being used, see that the tube is kept dry by frequent aspirations. If any symptoms arise pointing to the development of a peritonitis, such as persistent vomiting, inactivity of the bowels, distended abdomen, elevation of temperature, and quickened heart beats, give the salines (sulph. magnesia is the best) in good size doses (one to two ounces) each two or four hours until bowels act, or gas passes in abundance. To this course may be added turpentine enema (3ii to pint water) to which two ounces of salts are added. If this course succeeds, in many of the cases improvement will be noticed at once. The bowels must be kept acting each day. If patient can not retain the salts, give one-tenth grain of calomel each hour until bowels move or vomiting ceases. Many cases will be relieved of the vomiting where no peritonitis exists by giving nutrient enemas each three or four hours. Many post-operative cases die from systemic infection before the disease has had time to become general. In these cases the development may be initiated immediately after the operation, and with symptoms resembling those of shock, the patient dying within twenty-four or forty-eight hours. Here large quantities of strychnia, digitalin and whisky must be given.

The subject of peritonitis can not be discussed without considering the *trio:* 1, fermentation fever (Bergman); 2, septic intoxication (sapremia), and 3, septic infection or true septicemia. I know of no better way to make these classifications understood than by reporting illustrative cases occurring in my practice:

Case 1.—Fermentation fever, following a salpingo-oöphorectomy. Six hours after the removal of sound uterine appendages for relief of the symptoms due to the presence of a uterine fibroid, my patient's temperature began to go up, reaching 104 degrees F. within twenty-four hours; was not preceded by chill; pulse increased correspondingly. The case presented no other alarming general symptoms; said she felt very well. Fearing I had the beginning of a dangerous sequela to combat, I removed my dressings and found a large indurated(?) spot to one side of my incision, in the abdominal parietes. I cut a couple of stitches and thus liberated a large collection of imprisoned blood that was forcing the fibrin ferment into the blood. My patient's temperature and pulse within a few hours returned to normal.

Some authorities doubt the existence of an aseptic fever. If there is such a condition as fermentation fever, this case belongs to that classification:

Case 2.—Sapremia (absorption of product of putrefaction) following a criminal abortion, retained placenta. After repeated endeavors with some blunt instrument, this young lady succeeded in producing an abortion. The fetus and part of the membranes and placenta were expelled. She was four months pregnant. Three days later a physician was called and found her with a temperature of 103 degrees F., having had a chill a few hours before. Pulse of the character described as indicating the absorption of the preformed ptomaines of putrefactive bacteria; a soft, compressible, quick pulse, indicating enfeebled heart's force. Vomiting, anorexia, tongue furred and dry, clammy perspiration, fetid discharge from vagina, tympanitic abdomen. I saw the case a few hours before death, at which time her temperature was 105 degrees F., pulse imperceptible, delirious, restless, clammy perspiration, dilated pupils, cyanotic, all pointing to an early dissolution. At the *postmortem* I found a large, soft uterus, with half of a rotten, stinking afterbirth in its cavity. This case could have been saved by a timely surgical procedure. Curetting, irrigation, iodoform gauze and drainage.

In this case there was some tenderness over the abdomen. The early removal of the cause will cure

the majority of these cases, unless a mixed infection far advanced exist at the time:

Case 3.—Septicemia, septic absorption, progressive sepsis. Presented the initial history of Case 2, and started as a true sapremia (absorption of the products of putrefaction) but on the third day a dirty or unsurgical curetting was done, which added a secondary (pyogenic) infection; the absorption of the products and the rapid increase of the same in the blood made the case a desperate one from this time. At the *postmortem* the peritoneum was found to contain much muddy fluid, with evidences of a general peritonitis; the local process had not progressed to that extent to account for the death, hence the certificate was signed, septicemia. An early hysterectomy with the removal of the appendages which were diseased, may have saved the patient by cutting off the supply of septic material entering the blood. The accompanying peritonitis was induced by an invasion of the germs through the Fallopian tubes.

I have reported these cases to illustrate what an easy matter it would have been to have diagnosed them as peritonitis, had they all been postoperative laparotomy cases.

In a peritonitis with well-marked constitutional septic manifestations, to resort to prophylactic or abortive measures should be early and thorough. After a laparotomy, if this condition is developing, the stitches at the lower angle of the incision should be cut, and the pelvic and lower abdominal cavity irrigated with gallons of hot salicylated or borated (boric acid) solution, and a drainage tube introduced. This washing of the peritoneum should be repeated two or three times during the twenty-four hours. It can be done without an anesthetic in the majority of cases.

SOME THINGS THAT SHOULD NOT BE FORGOTTEN BY THE GENERAL PRACTITIONER.

BY B. C. KEISTER, M.D.
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First, he should recognize his duty to himself, and second, his relation to other physicians. I believe it was the late Dr. Flint who made the remark that "every physician who is true to himself should be a thorough gentleman, a thorough business man and a thorough physician."

First of all, he should be in sympathy with the Christian religion; even if he is not a member of any special branch of the orthodox church, he should certainly not be a skeptic or an infidel. It would be exceedingly difficult for a skeptical physician to hold the confidence of one of his church-going patients through any serious illness, to say nothing of the many other disadvantages, under which he would have to labor. I may be pardoned for saying that we have in our ranks, men who are not only skeptical on religion but *peculiarly so* on the science of medicine. They delight to speak disparagingly of the science and are fain to show an air of ostentation that well characterizes the peacock or the *non compos mentis*. This latter class of physicians, to say the least, are unworthy of the title they bear; for to them is due the skepticism that exists among the laity on the science of medicine, and thus a great barrier is formed between physician and patient, to say nothing of the harm done to the credit of the profession. It is true, there are wonderful changes constantly being made in the art of medicine, but generally speaking, these changes are only steps toward a better and more perfect practice of the science. As man's constitution changes so must our practice change, in order to adapt its merits to man's necessities. Medicine is a progressive science. The advance that has been made in the past ten years in the science of medicine and surgery far surpasses that of all other branches of knowledge. Dr. Nicholas Senn, who is one of the progressive surgeons of the world, remarked to a large body of physicians a few months ago, that there had been more genuine progress made in the science of surgery within the past ten years than had been made during the previous one hundred years. Thus we see how grandly our great science is keeping abreast with all others, and I may add, since antiseptic surgery and electricity have come to our aid, we are fast outstripping all other professions on the broad road of progress.

All honor to such men as Koch, Pasteur and Sternberg who have accomplished wonderful results in their researches with the microscope, in ascertaining the cause of disease. All honor to such men as Senn and Gerster, Loomis and Osler for putting into practice the teachings of the former, and thus bringing about a grand revolution in the practice of medicine. It is the duty of every true physician to hold up the standard of his profession. And to do this successfully, he should be both a thorough gentleman and a thorough physician. He should keep abreast of the times, by spending at least three months out of every three years at the medical centers, where hospital advantages are offered to the general practitioner as well as to the specialist. This is a duty that every true physician owes to himself. If every general practitioner would do this, he would be better prepared to do his work, instead of allowing his patients to go to the city specialists to be treated for the very disease that he could have treated equally as well at home. It is passing strange that there are so many general practitioners, who from mere want of confidence in their own abilities, will send their patients to the cities to be treated by men who have had less experience and fewer collegiate advantages than they have had. I am acquainted with a physician who sends at least one-third of his cases to the city to be treated; these doubtless could be treated at home just as well. I claim that there is but one advantage the prominent city physician has over the town or country physician, namely, the hospital advantages, where good and skilful nursing is required after capital surgical operations. We need a few more McDowell's and Sims in the country villages to encourage us to compete with the city surgeons and city specialists.

I long to see the day when every village and country doctor will be as handsomely equipped in office facilities, etc., as any city specialist, and thus be prepared to treat his cases at home, instead of sending them with their pocket-books full of money to the city specialist. I am proud of the fact, that out of a yearly three thousand dollar office practice, I have thus far been able to treat my cases at home, and I mean to continue to do so as long as I remain in the practice of medicine. There is no just reason why every physician should not keep abreast of the times as above indicated, and be equipped with a full supply of the necessary surgical instruments, galvanic, faradic and cautery batteries, etc. There are many lives sacrificed, wholly on account of the attending physician not having proper surgical instruments to relieve the patient. To cite an instance of this kind:

About four weeks ago I was summoned fifteen

miles in the country to relieve a man who was suffering from suppression of the urine, due to organic stricture of the urethra. The attending physician, who is a very clever man and a good doctor, did not have a urethrotome or any suitable bougies by which to relieve the patient of his intense suffering, and he had not passed scarcely any urine for the previous thirty-six hours; doubtless he would have died very soon from rupture of the bladder or uremic poisoning had he not been relieved. The pay received in this one case would have been sufficient to purchase two or three urethrotomes and a sufficient number of filiform bougies to last five years.

I claim that in nine cases out of ten it is *sheer stinginess* on the part of the physician, that he is not properly equipped with suitable instruments. Every physician should have in his office one good twenty-four cell galvanic battery, two good faradic batteries and one good galvano-cautery battery, (I like McIntosh's batteries better than any other make). If he has studied electro-therapeutics and can master it well, he will find it a wonderful help to him in the treatment of diseases peculiar to women.

I am very much inclined to believe, that in the course of time electricity will take the place of the surgeon's knife in gynecology. I can testify to its proficiency in the treatment of fibroid tumors of the uterus, subinvolution and many other diseases of this class. Conservative surgery is yielding better results every day, and I believe the time is not far distant when women's ovaries will be let as severely alone by the abdominal surgeon as the Holy Bible. Away with the idea of a physician's reputation being gauged or made by the number of laparotomies he performs or the number of women he unsexes. It was my privilege a few months ago to be an eye witness to some ten or twelve laparotomies, and I must say, with all due deference to the skilled operators, that in my humble judgment, at least two-thirds of those poor women would have been far better off without the operation. I may cite one case in particular, that had been diagnosed cystic disease of both ovaries, but on opening the abdomen and close examination the cystic disease failed to show up. The operator, however, thought it best to remove the ovaries lest the disease should show up later on. Now, this simply shows how a thing may be run into the ground by the sheer craze for reputation. There were some fifteen or more other general practitioners who witnessed this operation with me, and it was interesting to see the exchange of frowns from one to the other during the latter part of the operation. The skilled professor tried very hard to justify his theory for castrating this poor woman, but it failed to have the desired effect upon those who were present. The main symptom complained of by this woman was pain in the region of both ovaries at each menstrual period, with some irregularity of her menses. I claim that such cases can be relieved, if not cured, by medicines and electricity. Dysmenorrhea with narrowing of the internal os of the uterus can be successfully treated by three applications of Goodell's uterine dilator, followed each time with six minutes intra-uterine electricity by the faradic battery. I have never failed to cure a single case where this treatment was adopted.

I was very favorably impressed with the remark made by Prof. Bangs of the Chicago Policlinic, in one of his lectures on gynecology, when he said, "that after some fifteen years of active practice in his *special* branch, he had come to the conclusion that three-fourths of the diseases that women suffer from were due to constipation of the bowels." He also remarked in one of his lectures on cervical lacerations, "that three-fourths of these lacerations were almost harmless, and hence did not require operative procedures and that conservative treatment yielded far better results in such cases."

Thus we see, there is much for the general practitioner to consider before allowing his female patients to go off to be treated by the city specialist. There is no plausible reason why the general practitioner should not do as good work and get as good results in the majority of such cases, provided he has as well equipped an office as the city surgeon or specialist. In doing this he not only saves his reputation from being at the disposal of the criticising city specialist, but of equal import he saves hundreds of dollars that would otherwise leave his own needy pockets for those of the specialist. There is no reason why the general practitioner should not operate for cataract, or perform iridectomy, or remove a nasal polypus, or do any other work that he is called upon to do in the science of surgery and medicine, provided he keeps abreast of the times and is properly equipped for his work. He should consider that the city specialist's opportunities for acquiring knowledge are just the same as those of the general practitioner, for both sit side by side in the lecture hall, and hear the same lectures and witness the same operations in the same amphitheaters. It is no less the privilege of the general practitioner to take special courses at the post-graduate schools at the great medical centers, than it is the privilege of the specialists. And just here let me add, there are many who call themselves "specialists" who have taken up their *specialty* without taking a regular course in the science of medicine, thus leaving out the real ground-work of their specialty. Such men should not bear the title of doctor. They are not prepared to do their work near as well as the general practitioner. Some of your readers may infer from what I have written that I mean to cry down the specialists. I simply desire to elevate the general practitioner and place him just where he rightly belongs, regardless of the claims of the specialist. It is true, we have some very worthy and distinguished specialists, and far be it from me to detract one iota from their escutcheons. All honor and praise to such men as Chisolm, Mundé and McGuire, all of whom were once general practitioners, and well grounded in the science of medicine before they became specialists. We need more such such liberal minded men in our profession to absorb the many mushroom specialists who are constantly springing up over the country.

HYSTERICAL LOCKJAW.

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It is always interesting to observe the manifestations of hysteria in limited and definite areas, because if ever anything like a distinct pathologic lesion is discovered it will be in such cases. Conditions causing widespread hysteria with multiform symptoms are, like widespread lesions in the brain, too complex

for purposes of minute investigation or exact localization. It is to the limited lesions that we must look for a starting point, lesions occupying areas sufficiently circumscribed to permit of thorough examination and careful comparison with corresponding normal regions. Such conditions for example as contracture of a single limb, or a single group of muscles, monoplegia, blephorospasm and the like. These minor symptoms of hysteria do not attract the same attention as the more marked and extensive manifestations of the disease, and are perhaps often overlooked by the general practitioner or at least disregarded. For the reason given above, however, it is very necessary that these isolated symptoms should receive careful attention, and the clinical picture of the most frequent of them carefully drawn, for at rare intervals opportunities will occur to investigate the region of the brain to which such symptoms can be referred. The following cases illustrate a form of hysterical contracture, which although it was recognized many years ago is not often described:

Case 1.—Negress, age 19. Showed convulsions, ovarian tenderness, headache, and other classic symptoms. After every convulsive seizure she had rigid contraction of the temporal and masseter muscles preventing the opening of the mouth. The lockjaw continued for some hours or longer after the convulsions, and did not reappear until the next convulsive seizure. There was no record of any rigidity of the muscles of the neck, or other parts of the body.

Case 2.—Negress, age 20. Gave a history of having cut her finger three days previous to the onset of the lockjaw. As long as she was undisturbed and quiet there was no contracture, but upon the least excitement the jaws became so tightly closed that it was impossible to open them without using more force than was considered safe. There was also spasmodic contracture of the muscles of the neck and shoulders. Patient was cured by two or three applications of the faradic current aided by suggestion. She was kept under observation for some days before any suggestive treatment was instituted, and treated with antispasmodics with no benefit.

Case 3.—A young woman of about 20 years was brought to me with the history of having been unable to open her mouth for more than a week. The attack had come on suddenly, and as far as could be learned there was no emotional shock preceding it. She was of a rather hysterical temperament, but there were no permanent stigmata except the contracture of the jaw muscles. There was little or no stiffness of the neck; the teeth were tightly clenched and the greatest force that was considered safe could not overcome the contraction. Her teeth were blackened by the food and medicine that had been poured into her mouth. As the patient was rather apprehensive of hypnotism, the non-hypnotic suggestion was employed. She was carefully placed in front of a large battery, and a mild galvanic current passed through the face, the electrodes being placed one on each side of the jaw. This current was alternated with a faradic current, repeated suggestions being made that in a certain time by the watch she would be cured. In a few minutes the contracture disappeared.

In Case 2 there was the suggestion of lockjaw from the cut finger, but in the other cases there seemed to be nothing to suggest it, nor did the patients allude to their affection as lockjaw.

Incidentally the last two cases illustrate the value of non-hypnotic suggestion. The most important and useful lesson we have learned from the study of hypnotism, which has been carried on with such ardor by the French school during the past half dozen years, is that non-hypnotic suggestion is far more generally applicable, in many cases is as potent as the hypnotic suggestion, and the impression made is more enduring.

NECROLOGY.

J. M. Gatewood, M.D. of Keith, Ohio, January 19.

J. A. Hammond, M.D. of Minda, N. Y., January 7.

Hampton E. Hill, M.D. of Saco, Maine, January 9. He was 44 years of age.

R. Murphy, M.D., a member of the Wayne County Medical Society, the Michigan Surgical and Pathological Society, and for twenty years a practitioner of medicine in the State of Michigan, died in Detroit on the morning of January 20.

Thomas A. Dunkle, M.D. died at Reading, Pa., January 14, aged 50 years. Deceased graduated from Jefferson Medical College in 1863. During 1862 and 1863 he was an Acting Assistant Surgeon in the United States Hospital at Fourth and George Streets, Philadelphia. He practiced medicine in Reading over twenty years.

John K. Walsh, M.D. of Washington, D. C., January 15. Dr. Walsh was born in Washington, and graduated at Georgetown College in 1861. He was at once appointed Assistant Surgeon in the Navy and served with distinction throughout the war and afterward became a surgeon in the Army. After three years of service he resigned and took up private practice in this city and afterward accepted the position of Assistant Surgeon at the Leavenworth Soldiers' Home. He resigned three months ago and returned to Washington.

William L. Walters, M.D. of Richmond, Va., January 15. Dr. Walters had been in declining health for twelve months, but was confined to his bed only about two weeks. He was in his sixty-fifth year. He came to Richmond from Staunton about eighteen months ago. For thirty years he was an active practitioner in Augusta County where he had an extensive practice. His wife was a grand-daughter of the Rev. William Calhoun, formerly pastor of Hebron Church, in Augusta County, and was a great-grand-daughter of the Rev. James Waddell.

John A. Thompson, M.D., the well-known young physician and eye specialist of Wrightsville, Pa., died at his home in that place January 13, after an illness of about six weeks of consumption. The deceased was well and favorably known throughout York and Lancaster Counties, was about 35 years of age, and a son of the late Dr. J. A. Thompson, who died a few years ago. Dr. Thompson enjoyed a large practice. He was a graduate of the University of Pennsylvania after which he took a course in a European college. He located in Philadelphia where he enjoyed a lucrative practice. He was a member of the Lancaster City and County Medical Society, also of the State Medical Society and of the AMERICAN MEDICAL ASSOCIATION.

Joseph A. Pacetti, M.D. of Jacksonville, Fla., January 12. Joseph A. Pacetti was born in St. Augustine in the year 1838. He first commenced the practice of medicine at St. Augustine, where he followed his profession for several years. His next field of labor was at King's Ferry, in Nassau County. Just prior to the beginning of the war he returned to St. Augustine and opened a pharmacy, which occupation he was engaged in at the time of the State's secession. When war was declared Dr. Pacetti enlisted in the Eighth Florida Infantry, with the rank of Lieutenant. He was in Lee's army and fought in most of the great battles, during one of which he was wounded. For conspicuous bravery he was commissioned as Captain, and served in that rank until the surrender. After the close of the war Dr. Pacetti went to Cuba and engaged in the practice of his profession for several years in the interior of the Island. He was forced to return to this country by the Cuban insurrection, and came to Jacksonville in 1885, and has since been located there.

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This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues and subscription for THE JOURNAL. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above amount the weekly JOURNAL of the Association will be forwarded regularly.

All members of the Association should send their Annual Dues to the Treasurer, RICHARD J. DUNGLISON, M.D., Lock Box 1274, Philadelphia, Pa.

SATURDAY, JANUARY 27, 1894.

REGULATING THE PRACTICE OF MEDICINE IN THE STATE OF KENTUCKY.

In the last six months more interest has been taken in this State in this question than in any other of the Union, owing to the taking effect and the enforcement of a new law. Kentucky was the first State in the Valley of the Mississippi and west of the Alleghanies to pass a law upon this subject. In fact, with the exception of North Carolina, it was practically the first to inaugurate such legislation in the United States. By this is meant the movement that at this time has carried with it nearly every State, and does not refer to the laws that had been enacted many years ago, and had become obsolete, by Massachusetts, New York, New Jersey, North Carolina, and one or two of the other original thirteen States. In 1859, the State Medical Society of North Carolina was incorporated, and a State Board of Medical Examiners created from the members of that Society. All engaged in the practice of medicine at the time of the passage were exempt from the requirements and penalties of the Act, the latter being very light. In 1874, a law was enacted in Kentucky providing for the appointment by the Governor of a Board of Examiners for each judicial district, and that no one should practice medicine unless they were graduates of a chartered medical school, or had a certificate of the Board of Examiners, or had practiced medicine honorably for ten years prior to 1874. The law also prescribed penalties for non-compliance, and the Board of Examiners was allowed to charge twenty dollars for a certificate, the Examiners to receive the fees as compensation for their services. Certificates could be granted for one year, but no longer than five years. Much good was accomplished at first, but in a few years the law became a dead letter in nearly all the districts, and in 1888 it was amended, requiring the registration of the diploma in the office of the county clerk, also the affidavit that the party had practiced medicine in the State since 1864. The diplomas of legally chartered medical colleges by the State, or of reputable and legally chartered medical colleges of some other State or country, certified and indorsed as such by one of the colleges located in the State, or State Medical Society, were recognized. On May 29, 1890, amendments were again made to the law; the most important were that the State Board of Health should certify to the character of the diplomas of colleges of other States, and to prevent traveling empirics from practicing in the State.

The defects of existing legislation were so patent, that on April 10, 1893, the present law was approved by the Governor. The main features of this are that all practitioners, and those intending to practice, have to obtain a certificate from the State Board of Health, and register it in the office of the county clerk; also gives the State Board of Health authority to refuse and revoke certificates. Section 3 of the Act gives the qualifications necessary to obtain a certificate: "First, a diploma from a reputable college legally chartered under the laws of this State; second, a diploma from a reputable and legally chartered medical college of some other State or country, indorsed as such by the State Board of Health; third, satisfactory evidence from the person claiming the same that such person was reputably and honorably engaged in the practice of medicine in this State prior to February twenty-third, one thousand eight hundred and sixty-four." Section 4 forbids any itinerant to register or to practice in any county, and Section 5 says: "The State Board of Health may refuse to issue the certificate provided for in Section 3 to any individual guilty of grossly unprofessional conduct of a character likely to deceive or defraud the public, and it may after due notice and hearing revoke such certificate for like cause. In these cases the applicant may appeal to the Governor." The Act further gives the penalties for violation, and defines what is practicing medicine within the meaning of the law.

More changes have taken place in the legislation of this State in the law upon this subject than any other, and as many of the practitioners have been called upon to comply with these changes three times, it is not at all surprising that some of this class should feel uncomfortable. The present law is a good one, and is simply what experience has taught to be necessary in order to accomplish the end desired, and has required much effort to secure its passage. Opposition to its enforcement was to be expected, but not to the extent that has been developed. A number of reputable medical men have refused to take out certificates, and thus have encour-

aged those that the interests of the people and profession demand should be suppressed. The stand taken against the advertising frauds has arrayed some of the newspapers against the Board, but so far the Governor has sustained the action taken in all cases that have been appealed. The issues involved are not alone of a local, but national character. It is clearly the duty of all reputable practitioners to encourage and support the State Board of Health in the enforcement of the law. Kentucky was the pioneer in many respects in medical legislation. Will the State that has been honored by a McDOWELL, a DUDLEY, a YANDELL and a host of other shining lights in the profession, lag behind her sister States?

WAR WOUNDS AND THE STEEL TUBULAR BULLET.

In the Report of the Surgeon General of the Army, recently published, are given the particulars of a series of experiments conducted at Frankford Arsenal, Pennsylvania, by CAPTAIN L. A. LAGARDE of the Medical Department, U. S. A., to determine the effects on the human body of cylindro-conoidal missiles of small caliber fired at various ranges. The experimental bullet was composed of lead incased in a jacket of German silver, its diameter .30 inches, its weight 220 grains. The penetration of this bullet was found to be greater at all ranges than that of the regulation .45 caliber leaden bullet weighing 500 grains. Comminution of bones and disorganization of soft parts were caused by both bullets at short ranges; but at ranges from 350 to 1,500 yards the destructive effect of the smaller bullet became reduced to a mere penetrating wound. This lessened severity is attributed to the slight amount of deformation suffered by the jacketed bullet even after impinging on bone. At ranges beyond 1,500 yards the smaller bullet again produced shattering of bones and great laceration of the softer tissues as its lessened velocity permitted of a sideways impingement. The report is illustrated with photographs of bones perforated or comminuted according to the range of the bullets which caused these injuries, showing the deformation produced by the firing and impact, and of the relative penetration of the old and the new bullet into blocks of wood across the grain. A bullet having a hard cupro-nickeled steel jacket penetrated 19.5 inches as compared with 3.2 inches for the old bullet, and with 5.3 inches for the German silver jacketed projectile. DR. LA GARDE'S conclusions are that the small jacketed projectile will increase the number of wounded and the mortality in future wars, but that the wounds as a whole will be less severe,—more humane. His paper will be republished in the Transactions of the College of Physicians of Philadelphia, Pa.

But, so rapid is the progress of invention that there is already a need for another series of experiments to determine the probable character of the wounds hereafter to be treated by military surgeons; for PROFESSOR HEBLER of Zurich, has tunnelled the small bullet and given it an ogival form in rear, as well as in front, to lessen the resistance it will encounter from the air when fired, and to correspondingly increase its range and penetration. This, the "steel tubular bullet," is now confidently regarded as the bullet of the future. It is 30 millimeters (1.18 inches) in length and 5 millimeters (caliber .20) in diameter, while its channel, bore or lumen, is 2 millimeters in diameter, widening in a funnel shape to 3.6 millimeters in rear. The funnel end is fitted with a light base cap which drops off as soon as the bullet leaves the gun. The effective range of this missile is over 6,000 yards, at which distance it penetrates nine inches into solid wood. Its maximum range is nearly 11,000 yards; and as the elevation required in using this bullet is only one-sixth of that needful for the old .45 caliber bullet, one of the difficulties of long range shooting will be removed. The effects of this bullet of the future on the human body have not yet been determined. It is probable that it will pass through leaving a clean puncture; but as it is doubtful whether the shock of such a wound would suffice to place a man *hors de combat* the return to a bullet of a larger diameter may have to be considered. With such long range small arm missiles, military tactics as well as Hospital Corps management on the field will have to be studied anew.

CRITERIONS OF PRACTICE FOR MEDICAL SECTS.

The Supreme Court of Errors of Connecticut rendered a very interesting and important decision on May 22, 1893, in the case of Force v. Gregory, which has not yet been officially reported, and which has only just appeared in the advance sheets of the *Atlantic Reporter* (No. 17 of Jan. 10, 1894; Vol. 26, p. 1116). This was an action brought by a minor child, to recover damages from a homeopathic physician, for alleged malpractice in treating her for ophthalmia.

The fact that the action was brought by an infant of tender years, incapable of contracting, and that the physician was called by her father, it was not contended in any way extended or altered the implied contract and duty of the physician. Nor does the court think that, if such a claim had been made, it would have been valid. It further appeared that this physician had, at least to some extent, been the family physician and had previously, as such, prescribed for the child; but to this circumstance, also, there was no importance attached.

Following in the line of many precedents, the court lays down the doctrine that, in the absence of special contract, physicians and surgeons, by holding themselves out to the world as such, impliedly contract that they possess the reasonable and ordinary

qualifications of their profession, and are under a duty to exercise reasonable and ordinary care, skill and diligence. In determining what constitutes reasonable and ordinary care, skill and diligence, the test is that which physicians and surgeons in the same general neighborhood and in the same general line of practice ordinarily have and exercise in like cases. In addition to this, however, regard must be had to the advanced state of the profession at the time of the treatment.

Evidence was offered, on the one side, to show that the treatment and remedies prescribed by homeopathic practitioners were adopted. On the other side, an attempt was made to prove that the regular school of medicine would treat such a case differently, and that the latter treatment ought to have been used. It was also asked that the jury be charged, "that treatment by a physician of one particular school is to be tested by the general doctrines of his school, and not by those of other schools." This instruction was refused, it being charged, instead, that if the treatment laid down by one particular school of medicine was adopted, and the medical testimony offered to prove malpractice related to the treatment prescribed by a different school, it should be considered with regard to any bias or prejudice that might influence those offering it. Doubtless, the court says, this is correct, so far as it goes. The testimony should be so weighed. But if the physician adopted the treatment, not of one particular school in the abstract, but of his own particular school, which he publicly professed and practiced, and the medical testimony offered by the other side related to treatment prescribed by a different school, such testimony should be weighed, not alone with regard to bias or prejudice influencing the testimony of witnesses, but with regard to bias or prejudice which might influence or incline the jury in favor of one school rather than the other.

Not only did not the evidence in this case stop with the statement of how, in the view of the witnesses, such a case ought to be treated, but went further, and stated how "the 'allopathic' school of medicine would treat it." Indeed, it was argued that the respective merits of the "schools" of medical practice were—and, of right ought to have been—on trial before the jury. Such right, however, the court does not concede, holding that the jury should have been told that the relative merits of the two "schools" were in no sense before them for their consideration; that, so far as the physician charged with malpractice was to be judged by either, it was by the tenets, rules, principles and practices of his own school, not by those of another; and that, if he adopted the treatment laid down by his own "school," the fact that another "school" prescribed another treatment tended in no wise to show that he was chargeable with a lack of skill or negligence. Because of these errors, a judgment rendered against the physician was set aside, and a new trial granted.

It would also seem, from what the court said, that if it could be held negligent or unskilful in a given case, to use the treatment prescribed by the school to which the practitioner belonged, such negligence or want of skill must consist either in the mode of use, the application of such remedies under improper circumstances, or because they were intrinsically wrong, inappropriate or inadequate.

OBSERVATIONS REGARDING THE UNEDUCATED RETINA.

Dr. Frederick A. Cook, who was ethnologist to the Peary expedition to North Greenland, is the author of a series of papers on the peculiar facts observed by him in the far North. The following paragraph relates to the physiology of the eye, and covers a point which, so far as his and our reading goes, has not been traversed before by any explorer of uncivilized lands:

"The most remarkable peculiarity that I discovered was suggested by an accident. I had given one of the natives a lithograph of an actress. He took it to his house and fastened it to the oily walls upside down. When I saw it I changed it, but on entering the house a few days later it was again reversed.

"This aroused my curiosity, and I tried the same experiment on other newcomers, and found to my surprise that they all did the same. Without exception, every individual who was handed a picture book would invert it, and then in awe and amazement carefully examine the pictures. The individuals upon whom I noticed this strange peculiarity had never seen a book, picture, printed or written paper before.

"I asked them to draw for me a polar bear. To this they rapidly responded. but drew the image inverted. Other images and pictures were drawn with the same result.

"After thinking the matter over and more closely examining their eyes an explanation readily presented itself. It is a well-known fact among ophthalmologists that things which we see are transmitted to the retina inverted by a process or a physical law similar to that which inverts a picture in a camera. Thus far, the physiologic phenomena is the same in all men and animals. But in the next stage, where the image or its interpretation is transmitted from the retina to the brain, is where the important difference lies. These natives in their infancy of civilization have not been educated, as we have, by a long series of training and probably heredity, to read pictures as they would natural objects, but instead they hold the picture upside down, so that the image will be transmitted to their retinas in a reverse position, and hence the impression is transmitted to the brain in the most natural way."

On his return from North Greenland, Dr. Cook visited Labrador, and while there observed the same characteristic of vision, to a less extent, among the mountaineer Indians; and later still he has seen a number of young persons in civilized countries, who have not yet been taught the art of picture reading, who have a manifest tendency to hold their pictures upside down.

MEDICAL AID TO LABRADOR.

Both the English and Newfoundland men have joined to sustain an itinerant medical service for the help of the deep sea fishers and the temporary

dwellers along the coast of Labrador. The English sent the ship *Albert*, with a surgeon who visited in her and from her deck thirty-five harbors, and who treated at least a thousand patients. The settlers are largely of English extraction or birth. They were found to be in destitute condition and were greatly benefited by the presents of clothing taken out by the *Albert*. It is estimated that over thirty thousand fishermen and their families reside, for three to four months, in the natural harbors and islands along the Labrador coast; and during this time the only medical attention available for them is such as is sent out by the mission hospital societies. Two hospital stations have been originated in harbors at which the fishermen are apt to call on their passage up and down the coast.

VACANCIES IN THE ARMY MEDICAL CORPS.

SURGEON GENERAL STERNBERG has issued a notice which we printed in the JOURNAL of last week, that a Board will be convened in Washington, D. C., in April next for the examination of candidates for the Medical Corps. There are six vacancies to be filled. The circular of the Surgeon General gives full information for those desiring to compete, as to the mode of application, the conditions and requirements, the scope of the examination, etc., and as to the advantages accruing to the successful candidates. There are no more desirable positions open to young graduates than those in the Medical Corps of the Army. Among the inducements to enter the military service are a special education at the Army Medical School qualifying the individual as a sanitary officer, a permanent position with fixed duties and responsibilities, rank, pay and emoluments increasing with length of service and provision for disability from accident, sickness and old age. A set of the examination papers used by the board in session in Washington, D. C., in October last, was published in the JOURNAL of Oct. 28, 1893.

CHOLERA IN BELGIUM.

Ten days ago it was announced that a prominent officer of Brussels had died from cholera. This meant that there were other cases there, but nothing was said about them. The disease is now reported as having appeared at Anvelais near Charlevoi, and that on January 16 twelve deaths occurred, and that many of the inhabitants have been attacked. It is safe to assume that many more cases occur and in different localities than are reported by the authorities, and the history of the past warrants the assumption that a recrudescence of the disease in many localities will take place as the temperature rises.

The very latest "remedy" for the morphin habit is potassium permanganate.

ASSOCIATION NEWS.

We desire again to call attention to the official notice of the change in the date of the next meeting, to be held in San Francisco. At whatever cost of time and money, we are confident that those who make the trip, will feel themselves most amply repaid. Doubtless the best of railroad facilities will be at command and hardly a more favorable date for the meeting could be named. A very large representation from east of the Rocky Mountains should be in attendance, and to those who know the physicians of the Pacific Coast no assurance need be given of the royal hospitality with which their guests will be entertained.—*North American Practitioner*, January, 1894.

Application Blanks for Membership.—On advertising page v we print a convenient form of application blank that is being circulated by the ASSOCIATION JOURNAL. Any physician desirous of joining the ASSOCIATION can cut out this blank, and, having properly filled it, can mail same with his subscription to the Treasurer. As many physicians seem to be waiting for these blanks before joining the ASSOCIATION, it is pertinent to remark that the blank is not a necessity but merely a convenience. The essential is a certificate signed by the President and Secretary of a [regular] State or local Medical Society, and this, accompanied by $5, will be duly honored by the Treasurer. Dr. Kerr, the Secretary of the Medical Society of the State of California, has announced that the circulars of his Committee of Arrangements will on this occasion be mailed to every physician in the State, and will be accompanied by blank applications for membership in the ASSOCIATION. Meanwhile our readers will find each month the regular application form in our advertising columns, and we shall be at all times ready to afford any information in these matters.—*Occidental Medical Times* January, 1894.

To the Medical Press of the United States.

The undersigned, appointed at three successive meetings of the AMERICAN MEDICAL ASSOCIATION as Chairman of a Special Committee to appeal to Congress to establish a Department and a Secretary of Public Health, begs to say, that though a formal petition to the fifty-second Congress was made to grant our prayer, yet on account of the newness of the proposition and various other adverse circumstances which were duly set forth in my report of progress to the ASSOCIATION in Milwaukee, the Congress adjourned without granting our request.

It had not been expected that such an advance movement for the promotion of the medical profession to its true rank and dignity in the State, however beneficial it would be to the public welfare, could be granted without a complete organization of the profession throughout the Nation, and an invincible purpose to sustain its claim to be represented in the Presidential Cabinet on a parity with the Departments of Finance, of War, of Justice, Agriculture and the other Departments, and I request the publication of my letter to Senator Harris of Tennessee, which will explain the attitude of the medical profession on the subject. The committee is now engaged in the preparation of the bill to be introduced into the present Congress. We are seeking to bring about a great organized movement and hope to arouse the activity of our vast profession to secure its passage. It certainly can be accomplished. We entreat the aid of the medical press to give publicity to all our publications and to sustain our cause. Very respectfully,

C. G. COMEGYS, Chairman.

Cincinnati, Ohio, Jan. 18, 1894.

CINCINNATI, OHIO, Feb. 1, 1893.

To the Honorable the Senator Isham G. Harris, Chairman of the Senate Committee on Infectious Diseases.

Dear Sir:—I venture upon your courtesy for further con-

sideration of the petition and bill in your hands for the establishment of a Department of Public Health and a Secretary of Public Health. I earnestly request your patience to read my remarks.

I was not aware until I returned to Cincinnati that you had introduced a bill in regard to public health and that it was referred to your committee. On looking over it, I find that it is an admirable measure to secure a more thorough quarantine service; but it does not consider as extensively as the AMERICAN MEDICAL ASSOCIATION bill, other relations of the medical profession to the social conditions of the people for the prevention of sickness, growing out of their mode of living and the nature and exactions of their employments.

Prof. Dickenson of London, said in a public address fifteen years ago, that more people had been destroyed in Great Britain in one year by diseases that might have been prevented (diseases not imported) than were destroyed in France during the Reign of Terror; or during the recent Franco-German war; yet this great destruction of life by disease had created no public excitement. Nevertheless, his remarks, reinforced by a multitude of other medical writers, brought about parliamentary action that has effected, through improved sanitary measures, a great saving of life and relief of public distress. I beg to say further in regard to your bill for the establishment of a National Board of Health that there is no provision for the collection of vital statistics—marriages, births and deaths—and the relation which these events bear to conditions of prosperity or adversity of the people at large. Again, there is no provision in your bill to determine by collective investigation the primary and secondary causes and the results of medical treatment of inflammatory and fever diseases that exist in the various regions of our country. To collect this information it seems to me, is a positive duty of the general Government and which could be accomplished by a Health Department being brought into correspondence with State Boards of Health. In Great Britain such disclosures have been of great value.

In your bill no reference is made to the importance of higher medical education. There are over one hundred medical schools—of all systems—in the Union; and it may appear to you that nothing further is required; but these schools are not equally possessed of means or local opportunity to teach on the highest plane of advanced science. It is only recently that a somewhat general agreement has been reached which demands an examination for matriculation; and that the course of study in college should be lengthened to three full years. All experienced practitioners know that besides a good preliminary entrance examination, four full years are required to train a student thoroughly in general and special departments of practical medicine, in order to render him trustworthy as a practitioner. It is the desire of the medical profession that a course of instruction shall become available that will constitute physicians, everywhere, a body of learned practitioners commanding the respect and confidence of the people. It is plain that such professional qualities are of the utmost importance to the people. The influence of the Department of Public Health would greatly promote the elevation of practical instruction and bring about concord and increased efforts in all schools to accomplish the best kind of work.

I further beg your attention to the constitution of your National Board of Health, in regard to the employment of three scientific men at a salary of $5,000 each, to carry on sanitary investigations. The Government is already possessed of laboratories and men of science connected with the Military, Naval and Marine Hospitals, in the Geodetic Department of the Coast Survey and in the Department of Agriculture, sufficient to accomplish every investigation in sanitary and biological science. Moreover, in all the universities and general hospitals throughout the land, biologic and bacteriologic research is in continuous operation; and the same may be said in regard to investigations of food, water, and everything belonging to domestic economy and a healthy mode of living. If any unusual researches should be required, it would be much less expensive to employ some of these establishments to do the work, than to build new laboratories at Washington.

It is with the utmost respect for your eminent character and experience as the head of the Senate Committee on Contagious and Infectious Diseases, that I venture to ask you to so modify your bill that instead of creating a National Board of Health you make it conform to the proposition of the AMERICAN MEDICAL ASSOCIATION bill as introduced by the Hon. John Sherman. This can be done by combining all you say in your bill, in regard to the more thorough treatment of the quarantine question, with the plan of a Medical Department of Public Health and a Secretary of Public Health, and it will cost less than the one you propose. I am not certain as to the salary of a Cabinet Secretary, but it would certainly be less than that of three scientists at $5,000 a year each. The same retinue of clerks, would, I suppose, be required for either case. The Army Library and Museum Building could furnish quarters for the Health Department.

Let me ask your patience for a further consideration of the medical office in the body politic. Some are startled at the idea of a physician being made a minister of the State. Why should there be a Secretary of the Navy, of Finance, or Agriculture, etc., any more than one of Public Health? Can not any one of these Departments be as well conducted by a board of specialists as a Department of Public Health? The objectors to a Medical Secretary in the State, limit too much the functions of such an officer. He could collect all the facts connected with his profession from all the regions of this immense nation and by an interchange of ideas derive from them the most valuable suggestions on the well-being of the people. There are no citizens so closely in touch with individuals and families as the doctors; and there has descended to us through all the ages the maxim that the health of the people is a supreme law. For the medical profession to be able to exert all its benign influence on society, it must have the rank and dignity attached to it by the general Government that is so readily accorded to other Departments. It is worthy of such distinction because it is one of the most learned professions. Its methods of practical research are the same as those employed by lawyers, engineers, machinists, and in the whole range of the natural and physical sciences. It is a science of observation; while it has not the quantitative precision of mathematics, it has the qualitative that attaches to all the sciences of observation. The methods of the calculus employed in the study of the perturbations of celestial bodies are the same as those employed in the problems of pathology. In short, the clinician proceeds in his investigations regulated by the canons of logic. Hence it is that the opinions of well-trained and experienced physicians are on as high a plane of certainty as those of lawyers, judges, statesmen, engineers, architects, divines, bankers and merchants. Medicine has never been cultivated in the highest degree in nations where it has had imperfect recognition as an element in the State. In the British Empire it has always been under the watchful care of State authorities; at this time its eminent practitioners are frequently receiving the honor of knighthood; and, as evidence of its higher public importance, there is an increasing contingent of physicians in the House of Commons. The Senates of France, Italy and Germany contain some very eminent physicians; a physician is a Cabinet Minister in Italy.

Physicians like Mungo Park and David Livingstone have been explorers and pioneers of civilization. The progress of Christian missions is successful because of the physicians, women as well as men, who go with them; without their great success in curing the ailments of the uncivilized, the missions would become failures. China, Corea, India and Africa are accessible through the influence of physicians.

The progress of medicine in saving life in times of great distress is shown in the practice of midwifery. A maternity hospital of Philadelphia reports a thousand successive cases without a single death. The Paris Maternity Hospital reports two thousand successive cases and not a death. The discovery of antiseptic and aseptic management has accomplished this wonderful success. The deaths in surgical treatment have been very greatly reduced by the same methods; the deaths in surgical practice in hospitals for 1891 were but 3⅓ per cent. In the surgical diseases of women the rate is still less. Thus you can appreciate how enormously the volume of human grief, agony and bereavement has been assuaged. This has all been accomplished within twenty years. Pasteur of France, and Lister of England, are the two famous men who have led the van in these triumphs. One-half the children under five years of age in American cities die; it is a disgrace to our civilization. This fearful mortality can be reduced under the agency of State preventive medicine.

Let me speak briefly on the increased light which human physiology and pathology have shed on the relations of the brain and the mind. For a long time the brain has been known as the centers of sensation and motion; but only within a few years have they been located in the great mass of nervous matter,—the brain and the specialization of ter-

ritory in relation to these functions is now so defined that we know the very seat, not only of mere faculties of sensation and motion and their coördination for the execution of instinctive and purposive movements; but we can put our fingers on the exact region where exists our capacity to think—the area where sensations are shaped into concepts—where ideas are symbolized in language,—where memory holds its seat and the imagination displays its marvelous powers. All the apparatus of our animal life, the organs of respiration, digestion, circulation, excretion, the great neuro-muscular systems, is merely to sustain and develop a definite area of the periphery of the brain, which you may cover with your two hands; it is the realm of consciousness,—the plane where matter and spirit greet each other,—and the healthy life which enables a man to say: I know, that I know; I feel, that I feel; I think, that I think; it is where the consciousness of man counterpoises the immensity of the universe. Gravitation is instantaneous in its action; consciousness just as rapidly reaches from the center to the circumference of the cosmos. Who has the right to supervise this dread region but the physician? Closer than the minister of religion, or the ties of blood, he stands as the guardian of its illimitable faculties. Through medical physiologic research, psychology has been lifted above the subtle reasoning of the schoolmen into the light of a new day and is now comprehended as never before. Metaphysics is no longer a jugglery with words and phrases, but is a function of consciousness only existing in healthy brains; it is the purest and highest expression of reason and a free will and can not be displayed but by the healthy brain; it is a psychologic systemization of terms under the regulative faculty—the will,—whereby the intuitional phenomena of thought and the phenomena derived through the senses from external objects,—the ideal and the real,—the subject and the object, are brought into accord and the consciousness is freed from baleful illusions, hallucinations and delusions. The imperfect state of consciousness in unsound sleep wherein ideas flow, regulated only by their automatic association, represents an abeyance of the metaphysical function. We are led everywhere by the most grotesque, absurd and often fearful ideation, without any self-control, until further aroused, to break the spell. There is no metaphysics, or free will in dreams. The above argument, I hope you will believe, is legitimate in considering the relation to all the affairs of the social and political state founded upon the dogma that the healthy brain is necessary to free will. All abuses of appetite in eating and drinking, all violence to the brain by over-work, over-strain in excitement of any kind, deteriorates at length the health of the brain, and impairs the mind for reasonable thought and action. The business world, owing to hazardous trading or gambling, continually presents a spectacle of disaster, caused by the wear and tear in winning and losing. The questions of automatic and reasonable actions are embraced in the discussions which constitute so much perplexity in medical jurisprudence. The race of cranks that infest society are unfortunates who are deficient in brain health and are in so many ways irresponsible. They are victims of ideas which make them often dangerous to society.

I will not weary you further; but merely state that it is not for their personal aggrandizement the medical profession makes this appeal to Congress, but only for the benefit of the people. My whole purpose, however, is to show that physicians are of absolute necessity to civilization and the progress of society in all its phases; and, on account of their intimate relation to the people, should be placed in the best attitude by the State for the promotion of the health and happiness of all.

I have the honor to be your obedient servant,

C. G. COMEGYS,

Chairman of the Special Committee of the AMERICAN MEDICAL ASSOCIATION.

SOCIETY NEWS.

Eleventh International Medical Congress.

To the Editor:—I sincerely hope you will, in behalf of those medical men who intend to visit the Eleventh International Congress (Rome, March 29), publish the accompanying circular, probably the last I shall be called upon to distribute, or as much of it as you deem proper. It contains all the particulars, which may still be of service, and in regard to which I am constantly receiving personal inquiries.

Very sincerely yours, A. JACOBI,
Chairman American Nat. Committee.

110 W. Thirty-Fourth Street, New York.
Jan. 10th, 1894.

A letter directed to the undersigned by the Secretary General of the Eleventh International Medical Congress and dated Dec. 19, 1893, contains the following communications:

"American members will pay on the English, French and Italian railways single fares for double journeys, and will obtain a reduction of 20 per cent. on fares for Italian round-trip tickets.

"The documents required for their identification will be sent to you in January, and Americans intending to visit the Congress will have to apply to you for them.

"Full particulars concerning the journeys will accompany the documents.

"Messrs. Thos. Cook & Son, London, Paris, Rome and Naples, should be applied to for accommodation and for tickets for the excursions at Rome, Naples, and to Sicily. Such excursions will be arranged at Rome under the guidance of Mr. Forbes, member of several scientific societies and correspondent of the *Times*—for Naples, three days, including Vesuvius, Pompey, Capri, Sorrento, Castellamare, Bajae, etc.—for Sicily, ten days from Naples, including Messina, Taormina, Catania, Girgenti, Siracusa, Palermo, and return to Naples.

"The fares for members of the Congress will be considerably reduced and comprise hotel accommodations, carriages, guides, boats, etc.—about 70 francs each for the three days, and 285 francs for the ten days.

"Full particulars concerning these excursions will be contained in a leaflet to be added to the instructions and documents for the journey."

From former communications the following are herewith quoted: The members' fee is $5, that of their wives or adult relations $2 each. Checks or money orders may be sent to Prof. L. Pagliani, Rome, Italy. Credentials have been promised in the near future. When they arrive (none were received last year), they may be too late for many who have started or are about to start. The undersigned, who is not informed of the cause of delay, proposes to supply in as official a form as he thinks he is justified in doing, credentials which are expected to be of some practical value. The North German Lloyd has promised to recognize them. It is suggested, besides, that a passport may increase the traveler's facilities.

Only the North German Lloyd (22 Bowling Green) and the Compagnie Générale Transatlantique (3 Bowling Green) have thought fit to grant any reduction to Congressists.

The reductions on Italian railways are available from March 1 to April 30. A. JACOBI, M.D.

110 W. Thirty-Fourth Street, New York.
Jan. 11, 1894.

The New Jersey State Board of Medical Examiners met at Trenton, and were engaged in examining applicants for license on January 9 and 10. Seventeen candidates were present.

The Schenectady County Medical Society met January 9 for election of officers. The following were elected: President, Dr. John A. Heatly; Vice-President, Dr. D. L. Kathan; Secretary, Dr. F. V. Brownell; Treasurer, Dr. H. C. Van Zandt. Dr. W. T. Clute was elected a delegate to the annual meeting of the State Medical Association to be held in the city of Albany in February next.

A New Neurological Society.—The Baltimore neurologists have united in the formation of a society having social aims and the discussion of the problems of psycho-pathology and neurology. The next meeting will be held on the second

Wednesday in February, Dr. Henry M. Hurd in the chair. The place of meeting will be the Johns Hopkins Hospital. Among the charter members are Drs. G. J. Preston, H. J. Berkeley, G. H. Rohé, S. J. Fort, William Lee, E. N. Brush, H. M. Thomas and C. G. Hill.

There is a project on foot in Detroit to unite the different medical societies of that city in one organization. Committees from the various societies have been appointed and are now discussing the matter. It is hoped that the profession may have a building of its own.

New York State Medical Association.—The Tenth Annual Meeting of the Fifth District Branch of the New York State Medical Association will be held in Brooklyn on Tuesday, May 22, 1894. All Fellows desiring to read papers will please notify the Secretary, E. H. Squibb, M.D.
P. O. Box 760, Brooklyn.

The New York County Medical Association met January 15 and elected the following officers: President, Dr. S. B. Wylie McLeod, who has served three terms; Dr. Augustus D. Ruggles, Vice-President; Dr. P. Brynberg Porter, Recording Secretary; Dr. William W. Van Arsdale, Corresponding Secretary; Dr. John S. Hinton, Treasurer, and Dr. John Blake White, member of the Executive Committee for four years.

The Regular Meeting of the Tioga County Medical Society, N. Y., was held January 9. A large number of physicians were present, as the regular business was the election of officers for the coming year. The following officers were chosen: President, Dr. George M. Cady, Nichols; Vice-President, Dr. A. J. Harris, Candor; Secretary, Dr. I. Vreeland, Waverly; Delegate to State Society, Dr. D. S. Anderson, Owego.

Philadelphia County Medical Society.—The Philadelphia County Medical Society is without a second vice-president. The Society met on the night of January 17, to elect its officers for the year, and the only nominee for the second vice-presidency was Dr. Clara Marshall, Dean of the Women's Medical College. This was regarded by some of the members as an innovation as, so far, no women have been elected officers of the Society. Dr. George de Schweinitz was named against Dr. Marshall at the last moment and the vote resulted in a tie. At the next meeting, which will be held in February, the question will be finally settled.

At the Annual Meeting of the Camden, N. J., Medical Society January 10, the following officers were elected: President, Dr. Joseph H. Wills; Vice-President, Dr. O. W. Braymer; Secretary, Dr. Sophia Priestly; Treasurer, Dr. A. H. Lippincott; Reporter, Dr. Daniel Strock; Librarian, Dr. Joseph L Nicholson; Standing Committee, Drs. J. M. Ridge, G. E. Kirk, W. S. Bray; Legislative Committee, Drs. George W. Henry, D. W. Benjamin, J. M. Ridge. Managers for the Camden City Dispensary Association were also elected as follows: Drs. O. B. Gross, H. Genet Taylor, A. M. Mecray, J. S. Baer, E. L. B. Godfrey, George T. Robinson, W. A. Davis and J. F. Stock.

Wayne County (Michigan) Medical Society. (Detroit) Wednesday evening, the 17th inst., about two hundred physicians, members and friends of the Wayne County Medical Society, listened to a paper on "Peritonitis and Appendicitis," by Dr. Roswell Park, Professor of Surgery at the University of Buffalo, which the Doctor had been invited to read before the Society. The paper dealt principally with the bacteriology and pathology of peritonitis and appendicitis and was largely the product of original researches. It was discussed by Drs. Donald McLean, E. W. Jenks, E. L. Shurley, G. H. Carstens and A. N. Collins of Detroit. The whole subject of peritonitis and appendicitis, etiology, pathology and treatment, was thoroughly canvassed. At the conclusion of the discussion, a collation was served and all members and friends of the Society were given an opportunity to meet the essayist.

Dauphin County Medical Society.—The following officers were elected January 16, at a meeting of the Dauphin County Medical Society of Pennsylvania: President, Dr. F. W. Coover; First Vice-President, Dr. W. J. Middleton; Second Vice-President, Dr. E. H. James; Secretary, Dr. Paul Hartman; Treasurer, Dr. E. H. Coover; Board of Censors, Dr. H. McGowan, Dr. Orth, Dr. Gorgas; Board of Examiners, Dr. Hamilton, Dr. C. A. Rahter, Dr. F. W. Coover; Delegates to American Medical Association, Dr. W. T. Bishop, Dr. W. H. Seibert, Dr. E. H. Coover, Dr. H. McGowan, Dr. J. F. Culp; Delegates to State Medical Society, Dr. Gerhardt, Dr. W. E. Ellenberger, Dr. J. W. Roop, Dr. E. H. James, Dr. D. S. Funk, Dr. J. B. McAllister, Dr. J. F. Culp, Dr. A. T. Bishop, Dr. W. H. Jones; Trustees, Dr. H. McGowan, Dr. S. R. Gorgas, Dr. E. H. Coover; Sanitary Committee, Messrs. Hartman, McGowan, Gerhardt, F. W. Coover, Middleton, Hamilton, Ruhl, of Middleton.

The Erie County Medical Society held its annual meeting, January 9, when the election of officers for the current year was held, and the Society completed the revision of the by-laws, upon which it has been engaged for some time. The election of officers resulted as follows:

President—Dr. William H. Gail of East Aurora.
Vice-President—Dr. F. W. Bartlett.
Secretary—Dr. Franklin C. Gram.
Assistant Secretary—Dr. George F. Cott.
Treasurer—Dr. Edward Clark.
Assistant Treasurer—Dr. Eugene A. Smith.
Librarian—Dr. William C. Callanan.
Membership Committee—Drs. John A. Pettit, J. W. Putnam, and G. W. McPherson of Lancaster.
Censors—Drs. J. Krug, J. S. Porter, J. H. Potter, A. L. Benedict, and Henry Lapp of Clarence.
Delegate to State Medical Society—Dr. J. H. Pryor.

The revision of the by-laws was necessary because some of the sections had become obsolete through the action of the Legislature during the last ten or fifteen years, and other conditions had arisen in the same manner which were totally unprovided for.

One addition to the by-laws was the adoption of an article for a Committee on Hygiene, which is intended to act in the direction of public health, and to coöperate with the Board of Health when necessary. The following were appointed: Drs. H. R. Hopkins, Edward Clark, W. W. Potter and E. C. W. O'Brien.

American Electro-Therapeutic Association.

The Third Annual Meeting Held in Chicago, Sept. 12, 13 and 14, 1893.

Augustin H. Goelet, M.D., President.

(*Continued from page 95*).

METALLIC ELECTROLYSIS.

I have often succeeded in plating the needle with metallic copper in the following manner:

After obtaining the oxychlorid of copper as just described, a perfectly clean steel needle is attached to the negative pole, and a platinum needle to the positive pole. The steel needle is then placed within the zone where the oxychlorid of copper was deposited, and the other needle inserted in another portion of the meat; it is found on removing the needle after five minutes, that it has become coated with what appears to be oxid of copper. To prove this, it is only necessary to substitute this needle for the ordinary negative element of an Edison-Lalande battery, and wait for a few minutes, when the needle will be found to be coated with metallic copper. This method is not a caustic one, as in ordinary galvano-caustic applications, simply because the organic acid set free attacks the oxidizable electrode instead of the tissues.

The synthesis of this electrolytic action, Gautier sums up in a series of physico-chemic phenomena, as follows: 1, voltaic decompositions; 2, secondary chemic actions; 3, endothelial diffusions.

The first action of the treatment, on the uterus for in-

stance, is to saturate all the uterine cavity with the newly born salt, whether of zinc, copper or iron. This is diffused into the mucous membrane, the glands, the blood vessels, and the muscular tissue of the uterine body successively. This impregnation is much more considerable, according as the current which favors the cataphoric action is high and long continued.

In living tissues, I have seen the dissemination of the copper salt very marked in the treatment of cystic degeneration of the cervix uteri by means of cupric puncture, and about the meatus urinarius in the treatment of the female urethra.

This interstitial saturation, of whose microbicidal effect there is no doubt, causes a transient congestion of the uterus. The glands become congested and empty their contents; the mucous membrane is detached in shreds, or as a whole; there is in a word, a work of elimination and repair which takes place in the neighboring tissues without pain and without inflammmatory reaction. This process extends over a period of eight days.

On the one hand, the Apostoli or galvano-caustic method, is characterized by unoxidizable electrodes, high intensities, and short sittings; while on the other, the Gautier method or metallic electrolysis, is characterized by the use of oxidizable electrodes, low intensities and long sittings.

In favor of the low intensities and long sittings, Gautier[6] refers to observations made by Heidenham, concerning the actions of prolonged applications of currents on fatigued muscles, and upon vaso-motor nerves. Heidenham has shown that to restore a fatigued muscle to its primitive vigor, prolonged applications of the continued current are necessary, and that to act upon vaso-motor nerves, treatments of long duration are necessary; and Cyon has found the same. As an argument for the use of weaker currents, he quotes the observations of the Weber brothers.[7] When they stimulated the vagus by strong currents they stopped the heart in diastole, while Pflüger and Van Bezold proved afterwards that with feeble currents to the same nerve, the heart was slowed only. The Weber brothers, instead of stimulating the nerve, exhausted and paralyzed its excito-motor action. Admitting, then, that electricity, acting on the uterus excites the terminal filaments of the sympathetic nerves which end in that organ, and that the result is stimulation of vaso-dilators or vaso-constrictors, then *strong* excitation ought to produce a *vaso-dilatation* of the large arterial region of the abdomen, while feeble and prolonged excitation would produce the opposite effect.

In gynecologic work, Gautier claims for this method, as opposed to that of Apostoli, less pain, and an abridgment of the time of treatment, with better and more lasting results.

The advantages of the method over the topical application of sulphate of copper in stick or in solution, of zinc in paste or solution, or of iron in solution are as follows:

In the first place, ability to localize the medicinal action of the metallic salt used directly upon the diseased surface. For instance, in the treatment of a deep sinus, a copper probe may be carried to the bottom and the copper salts manufactured there where most needed; 2, drugs introduced into the system in a nascent state are much more active than in chemic combination; 3, by cataphoresis the salts thus formed are driven into the tissues, rather than laid upon the surface of a mucous membrane, as in ordinary topical applications; 4, there is obtained at the same time the beneficial action of the physiologic properties of the current.

The technique of the treatment is that of any galvano-caustic application, save that necessarily the positive pole is always the active one, and for the usual electrodes there are substituted sounds and needles of copper, zinc and iron. These are the metals which seem to have the widest range of usefulness as therapeutic agents.

So far as the published reports indicate, Gautier's observations have been made with pure red copper only, but he invariably refers to the use of soluble metallic electrodes in which category may be placed iron and zinc. The latter, as well as the copper, have been used by Dr. W. J. Morton and myself in the Electro-Therapeutic Clinic of the Post-Graduate Medical School, as well as in private practice.

After each application the electrodes should be carefully rubbed with emery paper, in order to secure an unoxidized surface for the next application.

In gynecologic work, a C. S. of from twenty-five to forty or fifty milliampères should be used. This maximum intensity should not be exceeded. The first sitting should be of fifteen minutes' duration, with—according to Gautier—from six to eight minutes for reversal of the poles, using a current of five to ten milliampères in order to loosen the electrode which has become adherent to the tissues. A constant and gentle manipulation of the electrode may be safely kept up in suitable localities during the treatment, thereby preventing any adhesions, and the necessity of polar reversal.

The length of the sittings should be progressively increased up to thirty minutes or more, according to the indications, and the tolerance of the patient. Both Gautier[8] and Delineau[9] find that prolonged sittings of metallic electrolysis, twenty to thirty minutes, are much more successful in combating hemorrhage than strong currents of short duration. The latter reports that he finds the hemorrhage is usually stopped after the first sitting. Gautier also finds rapid cures from metallic electrolysis in disease of the endometrium, even in cases where gonococci have been demonstrated.

In uterine hyperplasia, in pelvic exudates, and in certain inflammations of the tubes he has also found it very effective and harmless, relieving and curing the patients. His published reports, as well as those of Delineau include uterine fibroids as well as the conditions above enumerated.

These applications should only be made three or four times a month in intra-uterine treatment. In this, as in the galvano-caustic method, results are compromised and retarded by too frequent applications. The work done as the result of this intra-uterine electrolysis with an electrode of copper is, as has been pointed out, one of congestion, elimination and repair, and as we have stated, is completed in eight days.

"The elimination of pathologic tissues being imperfect, the mucous membrane would still be adherent in some points, and would adhere to the electrode, rupturing some blood vessels, and causing a slight hemorrhage."[10]

In my own experience, I know that I have in several instances retarded my results by too frequent applications. In a case of granular degeneration of the cervix, four applications of zinc electrolysis were made, the first, second and third times at intervals of two days. A current strength of ten milliampères was used. Four days after the third application, the cervix was most deeply congested, of an intensely red color, and completely devoid of epithelium. A fourth application was made with a current strength of ten milliampères for two or three minutes. Nothing further was done in the way of local treatment until one week later. At that time I made a speculum examination, and found the cervical congestion markedly diminished, the color normal save one tiny point of redness, the secretion profuse but normal in character, and the eroded surface almost entirely covered with delicate newly-formed epithelium.

From the history obtained when the case first came under observation, as well as from the condition presented, the trouble was evidently of long standing, and it had defied all the classical measurers, as well as cupric electrolysis. In the light of my subsequent experience, I am satisfied that the second and third treatments were distinctly harmful, and that the first and fourth would have accomplished the desired result.

Dr. A. H. Goelet, President of the American Electro-Therapeutic Association, has used zinc electrolysis somewhat extensively in chronic inflammatory conditions of the uterine mucous membrane accompanied by induration and sclerosis; also in fibroid and keloid growths. He has not used it as it was used by Gröh many years ago, viz.: to destroy degenerated tissue like cancerous growths, but to obtain the characteristic action of zinc chlorid upon morbid tissue. At the June meeting of the New York Electro-Therapeutic Society, Dr. Goelet called the attention of the members to his work with zinc electrolysis, as above outlined, and reported a case of extensive keloid under observation that had markedly improved under zinc puncture.

At the same meeting, Dr. W. J. Morton referred to the action of the zinc element in body batteries upon the skin, and reported a case of keloid where this action had been utilized with a considerable degree of success, and he had previously used zinc needles.

It is not only in gynecology that metallic electrolysis is of avail, although Gautier has established it as a precise and scientific therapeutic measure more thoroughly in gynecology than in other conditions. It has also been used

6 Revue D'Electrotherapie, July, 1893.
7 Technique de Electrotherapie, page 179.
8 Technique D'Electrotherapie, page 180.
9 Revue Internationale D'Electrotherapie, September, 1892.
10 Technique d Electrotherapie Gautier et Larat, p. 222.

by him, as well as by others, in hypertrophic rhinitis, ozena, chronic coryza, nasal polypi, sebaceous cysts, chronic urethritis, hemorrhoids, anal fissure, epithelioma, cancroid and chronic conjunctivitis.

In the July number of the *Revue Internationale D'Electrotherapie*, M. M. R. Verhoogen of Brussels, reports a case of aneurism—described as an enormous vascular tumor—subjected to the action of a copper electrode. At the time of his making the report, no result had been noted.

Twenty months ago, Dr. W. J. Morton, Professor of Electro-Therapeutics at the Post-Graduate Medical School and Hospital of New York City, began the use of metallic electrolysis in his clinic. At that time a typical case of trachoma, affecting both eyes, and of many years' duration, was treated by means of cupric electrolysis. About the same time the same method was used in ozena, as well as in many other cases.

A little later, a vascular tumor at the angle of the mouth received two applications of metallic electrolysis. A steel needle was thrust into the tumor, and there was secured the styptic action of the oxychlorid of iron upon the blood circulating therein. At the first sitting, a current of fifteen milliampères was passed for ten minutes, and at the second, twenty-five milliampères for ten minutes. The tumor, which before treatment had a diameter at the base of three-quarters of an inch, was reduced to one-third its former size. Almost complete destruction of the part of the needle buried in the tumor ensued. With the greater C. S., reversal of the poles was necessary to loosen the needle, and prevent tearing of the tissues.

The entire system of metallic electrolysis with all the soluble metals, and even with plated metals, has been systematically and continuously taught to the Post-Graduates, since its first announcement in this country, now some two years ago. Personally, I have used it in hypertrophic rhinitis, trachoma, urethritis, endometritis, uterine, fibroids, granular degeneration of the cervix uteri and cystic degeneration, with gratifying success.

I append a few cases taken from my case-book, and from that of the Electro-Therapeutic Clinic of the Post-Graduate Medical School and Hospital of New York City.

Case 1.—Miss O. D. presented herself for the treatment of a hypertrophic condition of the nose and throat which had existed for three years. Her voice was thick, and she complained of an irritative cough, and a disposition to swallow almost constantly. Six applications of cupric electrolysis with a current of ten milliampères were made, and on June 9 it was noted that all her symptoms had disappeared. She has remained well ever since.

Case 2.—A. R., 9 years of age, came under observation Oct. 21, 1892, because of a profuse muco-purulent discharge from the nose, and the usual symptoms attendant upon nasal and pharyngeal obstruction. The trouble had lasted one year. Fourteen intra-nasal applications of cupric electrolysis were made, their duration being five minutes, and the current strength five to ten milliampères. After the second application, he slept all night without snoring, and there was a steady and gratifying improvement, both in his local and general condition.

Case 3.—Miss G. A., 26 years of age; had had for several years a nasal stenosis on the right side, and inflamed and hypertrophied tonsils. Fifteen applications of cupric electrolysis were made to the nasal passages between April 25 and June 30, 1893, a current of ten or fifteen milliampères being used for five to ten minutes at a time. After the fifth sitting her voice became so much clearer that she was able to sing again. Negative galvanism, five milliampères was then successfully employed to overcome the nasal stenosis. By July 18, her voice had become strong and clear, and the other symptoms proportionately improved. In this case, as in the foregoing, attention was paid to the general nutrition.

Case 4.—M. J. C., was treated by the same method for the relief of symptoms due to marked nasal stenosis, arising from a double deviation from the septum. With a current of ten to fifteen milliampères, applications were made to the anterior and posterior nasal passages, and after two sittings there was complete relief from the post-nasal dropping and cessation of the muco-purulent discharge.

Case 5.—N. R., 11 years of age; for two days before coming under observation had a purulent conjunctivitis. Examination showed trachoma of the upper and lower lids of both eyes. Six applications of cupric electrolysis with a current of two milliampères were made for one minute to each lid. After the first treatment, there was less photophobia, and the granular points were decidedly smaller. The patient completely recovered and there has been no relapse.

Case 6.—F. D., age 8; with double trachoma, was brought from an institution where there were twenty-four boys, "all with sore eyes." He had purulent conjunctivitis with congestion and edema of the surrounding tissues, and the lower lids were covered with enlarged conjunctival papillæ, the upper showing the frog-spawn granulations very markedly. Treatment was begun July 21, 1893. Five applications of cupric electrolysis were made in this case by means of an oval copper electrode, which I show here, insulated on one face to prevent its coming in contact with the edge of the lid, as there is danger of this when the pain becomes severe, and the lids gradually contract and retract. A C. S. of from three to seven milliampères was used from three to five minutes. A solution of cocain was dropped in the eye prior to the application. The treatments were given at intervals of three, twelve, eleven and nine days. After the first treatment, less soreness, lacrymation and photophobia were present, and the trachomatous bodies were much softer. Recovered.

Case 7.—E. G., 21 years of age; right trachoma. This case and the preceding one were referred to the Electro-Therapeutic Clinic of the Post-Graduate Medical School by Dr. Francis Valk, Department of Ophthalmology in the same school. Photophobia and lachrymation were excessive, and the history dated back a year, during all of which time there had been lachrymation and pain. There was marked ptosis of the right upper lid from the congestion and swelling, and the "sago-grains" were abundant on the lids. There was also extensive inflammation of the cornea.

On July 21, 1893, cupric electrolysis was used to the upper and lower lids of the right eye with a current of three milliampères for five minutes.

July 24. The patient says he is better; no pain, swelling of lid and ptosis much diminished. Less photophobia, soreness and lacrymation. Trachomatous bodies very much softer; not so much like grit under electrode. Cupric electrolysis, ten milliampères from two to three minutes.

July 26. Edema of lids has entirely disappeared; slight ptosis only; no lacrymation; trachomatous bodies no longer isolated; cornea almost entirely clear; not using atropin any more.

Application repeated as on the 24th and again on the 28th.

July 31. After the fourth treatment, the trachomatous bodies were found to have melted away into the conjunctival membrane, and the other symptoms were still further diminished. He was seen by Dr. Valk, who stated that the result was 50 per cent. better than he could have secured with the classical methods of treatment. Cornea perfectly clear. Six other applications were made in the same way. The patient was not seen for nearly four weeks, and was then entirely free from symptoms, except some conjunctival redness and slight sensitiveness to bright sunlight.

(To be Continued.)

CORRESPONDENCE.

Medico-Chirurgical College of Philadelphia.

PHILADELPHIA, PA., Jan. 17, 1894.

To the Editor:—Please insert the following in the news column of your JOURNAL: The Faculty of the Medico-Chirurgical College of Philadelphia, has created three new clinical chairs, viz.: genito-urinary surgery, orthopedic surgery and otology. Thes e together with the vacancy in the chair of clinical medicine will be filled permanently at the end of the present session.

Thanking you in advance, I am,

Very truly yours, ERNEST LAPLACE, Dean.

Squelching a Quack.

JERSEYVILLE, ILL., Jan. 20, 1894.

To the Editor:—The State Board of Health, through Judge O. B. Hamilton, brought suit in this city against one "Dr." Fred Blankner who was traveling through this region advertising himself and wife as the "champion tooth pullers of the world," by flaming posters and advertisements in the local papers. This interesting couple also sold electric belts and "yaw soap" which last was recommended as an unfailing cure for sundry and divers diseases. A judgment was recovered

against the defendant for $100 and costs, with an order that he stand committed in custody until fine and costs were paid. The wily faker took the train for St. Louis before the jury returned their verdict, and so he is still at large.

The technical charge against him was that of violation of Section 11 of the Medical Practice Act, Chap. 91 R. S. of Illinois, as an itinerant vendor of drugs, without license from the State Board of Health.

The squelching of this quack will doubtless prove beneficial. Yours truly, MEDICUS.

MISCELLANY.

Circumcision.—A bill has been introduced into the Ohio Legislature forbidding circumcision.

Dr. Enoch V. Stoddard was nominated January 11 by Gov. Flower to succeed the late Oscar Craig as a member of the State Board of Charities of New York.

A Centenarian who Smoked.—Miss Hulda Arnold died at Milford, Mass., last week, at the reputed age of over 104 years. At the age of 14 she began smoking to relieve the asthma, and thereafter was an inveterate smoker.

Mathews' Medical Quarterly.—We have received the first number of this interesting publication, which is "a Journal devoted to Diseases of the Rectum, Gastro-Intestinal Disease, and Rectal and Gastro-Intestinal Surgery." Joseph M. Mathews, M.D., of Louisville, is editor and proprietor, and Henry E. Tuley, M.D., is his associate. The Quarterly is in every way excellent.

Physician to the Preston Retreat.—Dr. Richard C. Norris was elected physician in charge of the Preston Retreat, Philadelphia, to succeed Dr. Joseph Price on January 16. Among the candidates for the place was Dr. Anna Fullerton of the Woman's Medical College. There were several members of the Board of Managers whose wives were very ardent in their support of Dr. Fullerton, and as the result of their efforts she received five votes. Dr. Norris is a graduate of the University of Pennsylvania and since 1889 occupied the position of Demonstrator of Obstetrics in that institution.

A New Way to Execute Criminals.—A bill has been introduced in the Legislature of Ohio opposing hanging and providing that all murderers sentenced to death shall be put out of the way by means of anesthetics which are to be administered under the supervision of a board of physicians and scientists. The condemned man having been placed in a painless sleep, the scientists are to be permitted to take the top of his skull off and watch the actions of the brain and lay bare his heart and other organs and study life there.

The author of the bill is a physician and argues that its passage would give scientists an opportunity to study the currents of life as they have never been studied before, and would undoubtedly result in the most wonderful discoveries to the benefit of humanity.

"The Sulphate of Electricity."—The so-called "science column" of one of our daily papers is responsible for a statement that a spring, and its effluent water, may be charged with electricity. The item reads as follows:

"During the prevalence of a thunder storm in the neighborhood of Seis, in the Tyrol, the lightning struck a heap of old wood which was piled on a rock, splitting the latter and setting fire to the former. When the flames had been extinguished it was noticed that a stream of water flowed from amid the rubbish. Further examination showed that the stream proceeded from the lightning-created cleft in the rock, and chemic analysis demonstrated that the water was impregnated with iron and magnetism in the form of sulphates."

Hospital Notes.

Hamot Hospital Association.—The annual meeting of the Hamot Hospital Association, (Pa.) was held January 9 for the election of officers for the ensuing year.

New Ward for the Episcopal Hospital.—The new surgical receiving ward, which is being built for the Episcopal Hospital of Philadelphia, is approaching completion. The surgeons were cramped for room before it was decided to build the present addition, which is being built in a style and of material to conform with the Hospital buildings.

German Hospital Election.—At the meeting of the Chicago German Hospital Association, January 18, the following officers were elected: President, Frank F. Henning; Vice-President, John Kolnig; Secretary, John C. Burmeister; Directors, Adolph Sturm, two years; D. Pakentrus and Henry Herman, three years.

St. Joseph's Hospital.—The annual meeting of the staff of St. Joseph's Hospital, Denver, Colo., was held January 10 in the new building. The following officers were elected: President, Dr. L. E. Lemen; Vice-President, Dr. C. B. Burns; Secretary, Dr. C. E. Walker; Executive Committee, Drs. L. E. Lemen, A. L. Lobingier, W. W. Grant and Hugo Mager.

The Virginia Hospital at Richmond, was formally opened January 11. This institution, the outgrowth of the public spirit of some of Richmond's most prominent citizens, was erected at a cost of $18,000, and is now completely equipped. Dr. Hunter McGuire is President, Major Lewis Ginter, Vice-President, and Dr. Hugh Taylor, Secretary and Treasurer.

Presbyterian Hospital.—At the annual meeting of the corporation of the Presbyterian Hospital of Philadelphia, the following Trustees were elected to serve three years: Rev. Dr. Charles A. Dickey, Frank K. Hipple, Rev. James D. Paxton, Charles H. Mathews, Thomas B. Wanamaker, Rev. Dr. J. R. Miller, Henry N. Paul, Andrew Blair, Charles F. Hazletine and William A. Patton. The officers elected were: President, Dr. Dickey; Treasurer, Frank K. Hipple; Secretary, John H. Converse; Solicitor, Charles H. Mathews.

Germantown Hospital.—At the twenty-fourth annual meeting of the Board of Managers and contributors to the Germantown Hospital, Pa., the following officers were elected for the ensuing year: President, William H. Haines; Secretary, Thomas B. Horner; Treasurer, Joseph M. Shoemaker; Managers, Galloway C. Morris, Jones Wister, William H. Scott, Elliston P. Morris, Owen J. Wister, M.D., William E. S. Baker, William Hacker, Frank J. Firth, Francis Stokes, Reed A. Williams, Jr., Alexander W. Wister.

The Adirondack Cottage Sanitarium.—The ninth report of this institution shows that 156 patients were under treatment for pulmonary tuberculosis during the year 1893. Of that number 68 are now under observation, 86 have been discharged and two have died at the Sanitarium. One of the latter was complicated with pneumonia. There were 27 cases treated by tuberculin or modified tuberculin with improved conditions in ten of the cases and no deaths. Seven of these cases lost weight, while six gained weight at the rate of eight pounds, average, per patient. In three cases no bacilli or no expectoration were noted when the treatment was concluded. The report is written by Dr. E. L. Trudeau, President of the Board of Direction, who acknowledges his indebtedness to Dr. Irwin Hance, the present Resident Physician, in carrying out the exacting details of this plan of treatment. The results in some of the cases thus treated, in former years, are noted in the following paragraph: It is to be noted that ten of these thirteen cases belonged to the "advanced" or "far advanced" class, which are generally beyond the reach of treatment, and to many of these the tuberculin was administered at their own request as a last resort. Of the six cases treated by this method at the institution and hitherto reported as discharged cured, five, which have remained at home during periods varying from one to two years, are known up to date to have shown no signs of relapse, and the sixth can not be traced.

The Naval Hospital of New York Harbor.—The hospital at the Brooklyn Navy Yard is stated to have some objectionable, if not dangerous, features. It has been allowed to drift along liko an old-fashioned sailing craft, but Rear-Admiral Gherardi proposes now, if he can get the fuel, to get up steam. A bill without which no form of animated nature can subsist now-a-days has been introduced in Congress for the modernization and extension of the old building. If this bill becomes a law the Secretary of the Navy will be empowered to put the hospital in thorough repair and to build, equip and maintain additional sick quarters of modern construction and fitted with all modern hospital appliances.

Toledo Hospital.—The Board of Trustees of the Toledo, Ohio, Hospital held a meeting January 15, and elected the following officers for the coming year: President, Mrs. S. C. Schenck; First Vice-President, Mrs. W. S. Thurston; Second Vice-President, Mrs. S. W. Nettleton; Recording Secretary, Mrs. A. E. Scott; Corresponding Secretary, Mrs. J. G. Gould; Treasurer, Mrs. H. H. Perrin. The following Advisory Staff was chosen: Messrs. Richard Waite, Chairman; S. C. Schenck, W. H. Scott, A. L. Spitzer, W. S. Thurston, F. O. Paddock, W. V. Barbour, J. H. Bronson, T. J. Brown, W. J. Walding, M. A. Scott, G. H. Ketcham, I. N. Poe, F. B. Shoemaker, C. H. Buck, James Secor, Clarence Brown, J. H. Bowman, W. E. Terhune and T. H. Walbridge.

THE PUBLIC SERVICES.

Circular of Information for Candidates Seeking Appointment in the Medical Corps of the United States Army.

The Medical Corps of the Army consists of a Surgeon-General with the rank of brigadier general, six Assistant Surgeons General with the rank of colonel, ten Deputy Surgeons General with the rank of lieutenant colonel, fifty Surgeons with the rank of major, and one hundred and twenty-five Assistant Surgeons with the rank of 1st lieutenant, mounted, for the first five years, and the rank of captain, mounted, thereafter until promoted to major. Promotion through the intermediate grades of rank from that of captain to that of colonel is by seniority, but there is an examination for the rank of captain and another for that of major, to ascertain the fitness of the officer for promotion. Advancement to lieutenant colonel and colonel takes place without further examination. The Surgeon-General is selected by the President from among the members of the Corps. All vacancies are filled by appointment to the junior grade.

Pay and Emoluments.—To each rank is attached a fixed annual salary, which is received in monthly payments, and this is increased by 10 per cent. for each period of five years' service until a maximum of 40 per cent. is reached. An Assistant Surgeon with the rank of 1st lieutenant, mounted, receives $1,600 per annum, or $133.33 monthly. At the end of five years he is promoted to captain and receives $2,000 a year, which, with the increase of 10 per cent. for five years' service, is $2,200, or $183.33 per month. After ten years' service he receives $2,400, after fifteen years $2,600, and if he remains a captain after twenty years, $2,800 per year. The pay attached to the rank of major is $2,500 a year, which, with 10 per cent. added for each five years' service, becomes $3,250 after fifteen years and $3,500 after twenty years. The monthly pay of lieutenant colonel, colonel, and brigadier-general is $333.33, $375, and $458.34 respectively. Officers addition to their pay proper are furnished with a liberal allowance of quarters according to rank, either in kind, or, where no suitable Government building is available, by commutation. When travelling on duty an officer receives four cents per mile and reimbursement of money actually expended for railroad or other fares. On change of station he is entitled to transportation for professional books and papers and a reasonable amount of baggage at Government expense. Mounted officers, including all officers of the Medical Corps, are provided with forage, stabling, and transportation for horses owned and actually kept by them, not exceeding two for all ranks below a brigadier. Groceries and other articles may be purchased from the Commissary and fuel from the Quartermaster's Department at about wholesale cost price. Books and instruments are supplied in abundance for the use of medical officers in the performance of their duties.

Army Medical School.—By a recent order the Secretary of War has authorized the establishment of an Army Medical School in the city of Washington for the purpose of instructing approved candidates for admission to the Medical Corps of the Army in their duties as medical officers.

The course of instruction will be for four months, and will be given annually at the Army Medical Museum, in Washington City, commencing on the 1st day of November.

Five professors have been selected from among the senior medical officers of the Army, stationed in or near the city of Washington, and as many associate professors as may be required to give practical laboratory instruction in the methods of sanitary analyses, microscopical technique, clinical microscopy, bacteriology, urine analysis, etc.

The faculty of the Army Medical School will consist of—

1. A *President of the Faculty*, who shall be responsible for the discipline of the school, and who will deliver a course of lectures upon the duties of medical officers in war and peace (including property responsibility, examination of recruits, certificates of disability, reports, rights and privileges, customs of service, etc.).
2. A *Professor of Military Surgery* (including the care and transportation of wounded).
3. A *Professor of Military Hygiene* (including practical instruction in the examination of air, water, food, and clothing from a sanitary point of view).
4. A *Professor of Military Medicine*.
5. A *Professor of Clinical and Sanitary Microscopy* (including bacteriology and urinology).

Duties and Privileges.—A medical officer after completing the course of instruction at the Army Medical School will be assigned for some months as junior at a large military post before he is thrown upon his own responsibility. His stations after that are likely to alternate between the frontier and more desirable points, a tour of duty being usually four years at one place.

Leave of absence on full pay is allowed at the rate of one month per year, and this when not taken may accumulate to a maximum of four months, which at the end of four years is then available as one continuous leave. Beyond this an officer may still be absent with permission on half pay. Absence from duty on account of sickness involves no loss of pay.

Medical officers are entitled to the privilege of retirement at any time for disability incurred in the line of duty, or after forty years' service. On attaining the age of sixty-four they are placed upon the retired list by virtue of law. Retired officers receive three-fourths the amount of their pay proper at the time of retirement.

It is the intention of the Surgeon General to recommend the assignment for duty, as attending surgeons in the principal medical centers of the United States, of medical officers who have not yet passed their examinations for promotion to a majority, and, so far as may be practicable, in the order of their seniority. These details will be made for one year only, in order that as many medical officers as possible may be enabled to avail themselves of the opportunities thus offered to become familiar with the practice of the leading physicians and surgeons in this country, and of attending medical lectures, meetings of medical societies, etc. At the end of this tour of duty medical officers will be required to make a detailed report to the Surgeon General, showing how much of their time has been occupied by their official duties and to what extent they have availed themselves of the advantages offered for professional advancement.

Examination and Appointment.—Appointments to the Medical Corps of the Army are made by the President after the applicant has passed a successful examination before the Army Medical Examining Board and has been recommended by the Surgeon-General. Due notice of the meeting of the Board is usually published in the medical journals. The date of meeting is about April and October. Permission to appear before the Board is obtained by letter to the Secretary of War, which must be in the handwriting of the applicant, giving the date and place of his birth and the place and State of which he is a permanent resident, and inclosing certificates based on personal acquaintance from at least two reputable persons as to his citizenship, character and habits. The candidate must be a citizen of the United States, between twenty-two and twenty-eight years old, of sound health and good character, and a graduate of some regular medical college, in evidence of which his diploma will be submitted to the Board. The scope of the examination will include the morals, habits, physical and mental qualifications of the candidate, and his general aptitude for service; and the Board will report unfavorably should it have a reasonable doubt of his efficiency in any of these particulars.

The physical examination comes first in order, and must be thorough. Each candidate will in addition be required to certify "that he labors under no mental or physical infirmity or disability of any kind which can in any way interfere with the most efficient discharge of any duty which may be required." Errors of refraction, when not excessive, and not accompanied by ocular disease, and when correctible by appropriate glasses, are not causes for rejection.

The mental examinations are conducted by both written and oral questions, upon—

I. Elementary branches of common school education, including arithmetic, the history and geography of the United States, physics, and upon general literature and ancient and modern history. Candidates claiming especial knowledge of the higher mathematics, ancient or modern languages, drawing, analytical chemistry or branches of natural science, will be examined in those subjects as accomplishments and will receive due credit therefor according to their proficiency.

II. Professional branches, including anatomy, physiology, chemistry, physics, hygiene, pathology and bacteriology, therapeutics and materia medica, surgery, practice of medicine, obstetrics and the diseases of women and children.

Examinations at the bedside will also be conducted in clinical medicine and surgery, and operations and demonstrations upon the cadaver.

Hospital training and practical experience in the practice of medicine, surgery and obstetrics, are of great importance to candidates seeking admission to the Medical Corps of the Army, and they will be fully appreciated and duly credited to those who have had such advantages.

The Board has discretion to deviate from this general plan of examination in such manner as it deems best when necessary for the interests of the Service.

To save unnecessary expense to candidates, those who desire it may have a preliminary physical examination and a mental examination in the "elementary branches of a common school education," by a medical officer of the Army stationed most conveniently for this purpose, who will act under instructions from the Medical Examining Board.

The merits of the candidates in each of the several branches, and also their relative merit as evinced by the results obtained from the entire examination, will be reported by the Board, and in accordance with this report approved candidates will be appointed to existing vacancies or to such as may occur within two years thereafter. An applicant failing in one examination may be allowed a second after one year, but not a third. No concession will be made for the expenses of persons undergoing examination, but those who receive appointments will be entitled to travel allowances in obeying the first order assigning them to duty.

There will probably be six vacancies in the Corps to be filled.

To illustrate the general character of written questions submitted to candidates under examination, a few examples from the records of an Army Medical Examining Board recently convened in the city of New York are hereto appended. Geo. M. Sternberg, *Surgeon General.*

Approved: Daniel S. Lamont, *Secretary of War.*

War Department, Surgeon-General's Office,
Washington, D. C., Jan. 2, 1894.

EXAMPLES OF WRITTEN QUESTIONS.

ARITHMETIC.

1. Find the interest on $400.00 for 2 years, 5 months and 25 days at 8 per cent. per annum.
2. Find the depth of a reservoir 12 feet square from which 336 cubic yards of earth has been removed.
3. How many grains are there in 184 milligrams?
4. What is $\sqrt{\frac{5}{7}}$ carried to four decimal places?
5. What is $3\frac{1}{4} \times 15\frac{5}{7} + \frac{2}{3\frac{1}{4}} \div \frac{2\frac{3}{4}}{3}$?
6. The shadow of a church tower extends 57 yards; what is the heihtg of the tower when the shadow of a 2-foot rule in a vertical position extends 2 feet, 9 inches?

GEOGAAPHY.

1. Which of the United States are bounded in part by the Atlantic Ocean?

2. What are the principal mountain ranges in the western part of the United States?
3. What rivers of North America flow into the Pacific Ocean?
4. Bound the States of Michigan and New Hampshire.
5. Over what waters would a vessel pass in sailing from Washington to Sebastopol, by the shortest route?
6. When it is 12 o'clock, noon, standard time, in New York City, what is the standard time in San Francisco? Describe the system of "time belts" in the United States.

HISTORY AND LITERATURE.

1. Which were the two first permanent English colonies in North America? When, where, and by whom were they established?
2. Name the thirteen original States of the Union in the order in which they were settled.
3. What were the principal causes that led to the Revolutionary war in this country?
4. What poems have especially distinguished the following poets: Virgil, Milton, Young, Gray, James Thomson, and Goethe?
5. Under what Roman emperor was the capital of the empire removed from Rome, and what city became the new capital?
6. Name the principal battles fought in the Persian invasion of Greece by Xerxes.
7. Name the kings and queens of England embraced in the line of Tudor.

CHEMISTRY.

1. State the "law of multiple proportions." When was it discovered?
2. Give the symbols and atomic weights of the bivalent, non-metallic elements.
3. What are the physical and chemical properties of the element represented by the symbol Sb, and by what tests may it be recognized?
4. What do you understand by the following formula: $Fe_2\ 3SO_4 + 6NH_4HO = 3[(NH_4)_2SO_4] + Fe_2(HO)_6$?
5. What is the formula for ethyl ether, and how is it prepared?
6. What substance is represented by the formula $C_6H_{12}O_6$? Where is it found in nature, what are its physical characters, and by what chemical tests may it be recognized?

PHYSICS.

1. What is weight? Is the weight of a body constant? If not, why does it vary?
2. What is osmosis? What conditions are necessary to osmotic action? Give an illustration from the human body.
3. How is dew formed? What circumstances influence its formation? What is meant by the dew point?
4. Upon what fundamental laws of light does the action of lenses depend? Why does a convex lens magnify?
5. What is the velocity of sound? Does it vary, and how?
6. What is the relation between the dynamo and the electric motor? What is the principle of the dynamo?

ANATOMY.

1. Give the anatomy of the fourth ventricle, including the origin of nerves.
2. Give the anatomy of the coracoid process.
3. Make a diagrammatic sketch showing the relation of parts in a cross-section through the middle third of the right arm, proximal surface.
4. Describe the internal pudic artery and its relations.
5. Give a short description of the minute structural anatomy of the kidney, with or without schematic diagram.

PHYSIOLOGY.

1. Tell what you know about the cerebral localization of the functions of motion and locate some of the so-called motor areas.
2. What are the functions of the thyroid gland and the consequences of its removal?
3. What is the composition of atmospheric air and of expired air?
4. Give a list and a short description of some of the animal albuminoids.
5. What is urea? What is the normal quantity in proportion to body weight? How is it estimated?

SURGERY.

1. Give in detail the preparatory and several following steps of a so-called aseptic surgical operation.
2. What is the nature and origin of pus? What is sepsis and also antisepsis?
3. Describe Chopart's amputation through the foot, with diagram.
4. Give the points of diagnostic differentiation in cases of lupus ulceration, syphilitic ulceration, and epithallomatous ulceration.
5. Describe the different methods of procedure for the reduction of luxations of the head of the femur.

HYGIENE.

1. What is the normal amount of CO_2 in the atmosphere, how much of this gas is considered admissible in inhabited apartments, and how is the amount determined?
2. What amount of cubic air space per bed would you consider a suitable allowance in a hospital ward?
3. What substances in well or river water indicate, by their presence, contamination from excreta or other organic matter of animal origin?
4. How is the hardness of water estimated and to what is it due?
5. What are the constituent alimentary substances in milk, and how does cow's milk differ from human milk?
6. What vegetable products used as food contain the largest proportion of carbo-hydrates and what the largest proportion of proteids?
7. What parasites dangerous to man may be present in the flesh of animals used as food?
8. How would you disinfect the excreta of patients sick with cholera or typhoid fever?

PATHOLOGY AND BACTERIOLOGY.

1. What are the different stages of exudative inflammation and what the products of such inflammation?
2. What are the causes of thrombosis, what the composition and varieties of thrombi, and what changes they may undergo?
3. What pathological changes are found in the spinal cord in posterior spinal sclerosis?
4. What changes occur in the liver as a result of chronic interstitial hepatitis?
5. What bacteria are commonly found attached to the diseased valves in mycotic endocarditis?
6. What are the morphological and biological characters of the bacillus of diphtheria, and what are the evidences of its etiological relation to this disease?

THERAPEUTICS, MATERIA MEDICA, AND TOXICOLOGY.

1. By what various agents may antipyresis be produced? Give an example of each class of antipyretics and state how it acts.
2. In a case of typical acute pleurisy state the indications for treatment in its several stages and how *you* would meet them.
3. What is salol? Give its physiological action and therapeutic uses.
4. Give the source and therapeutic uses of cocaine, the dose in each case, and its dangerous effects.
5. With what condition is poisoning from opium most likely to be confounded? How would you make a diagnosis and how treat such a case?
6. What are the poisonous effects of the lead salts? How is their presence detected? State briefly *your* plan of treatment.

PRACTICE OF MEDICINE.

1. Give an account or the etiology, symptoms, physical signs, and differential diagnosis of lobular pneumonia.
2. Give an account of the etiology, physical signs, and treatment of empyema.
3. Give an account of the etiology, symptoms, differential diagnosis, and treatment of dilatation of the stomach.
4. What are the causes and symptoms of intestinal obstruction and what is the treatment?
5. What are the causes and results of mitral stenosis and how would you recognize this condition?
6. Give the differential diagnosis between smallpox and measles.

OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

1. Describe briefly the usual mechanism of a breech presentation; what dangers are to be guarded against and what difficulties to be met?
2. Under what circumstances is premature delivery demanded and how would you perform it?
3. What symptoms would lead you to suspect the presence of a uterine fibroid? State how an exact diagnosis can be made in such cases.
4. What measures, preventive or remedial, would you use in a case of puerperal convulsions?
5. What early symptoms indicate probable onset of the chief eruptive fevers in children? In which does temperature range highest, which has the shortest period of incubation, of invasion, of eruption?

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from January 13, 1894, to January 19, 1894.

Major EDWARD B. MOSELEY, Surgeon U. S. A., is hereby granted leave of absence for one month, on surgeon's certificate of disability.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending January 20, 1894.

Surgeon CLEMENT BIDDLE, detached from duty, Marine Rendezvous, Philadelphia, Pa., and wait orders. Rendezvous closed.
P. A. Surgeon E. P. STONE, detached from Marine Rendezvous, Boston, Mass., and continue on special duty in Boston, Mass.
P. A. Surgeon T. A. BERRYHILL, authorized to take a course of instruction at the Naval Hospital, Brooklyn, N. Y.
Medical Director J. MILLS BROWNE, retired, granted two months' leave of absence, with permission to go abroad.

LETTERS RECEIVED.

(A) Anders, J. M., Philadelphia, Pa.; Anderson, J. D., Minneapolis, Minn.; Andrews, J. B., Buffalo, N. Y.; Atkinson, W. B., Philadelphia, Pa.
(B) Beverly, H. H., Smiley, Texas; Brooke, G. W., Ellsworth, Ohio; Boylan, J. E., Cincinnati, Ohio; Billings, Caroline, Barre, Mass.; Billings, John S., Washington, D. C.; Bridge, Norman, Los Angeles, Cal.; Beakley, J. R., Alma Center, Wis.; Blackwell, Emily, New York City; Brown, C. F., St. Peter, Minn.; Bartlett, Edwin S., Milwaukee, Wis.; Baker, A. R., Cleveland, Ohio; Blyes, F. G., Fredonia, Pa.; Baker, E. F., Jacksonville, Ill.; Beardsley, C. E., Ottawa, Ohio; Bernd & Co., St. Louis, Mo.; Bevan, A. D., Chicago, Ill.; Bosqui, F. L., San Francisco, Cal.
(C) Cleaves, M. A., New York City; Church, Archibald, Chicago, Ill.; Collins, H. L. Company, St. Paul, Minn.; Coulter, C. E., Ogden, Utah; Clifford, E. L., Chicago, Ill.; Comegys, C. G., Cincinnati Ohio.
(D) Duncan, W. E., Aberdeen, S. Dak.; Davis, T. A., Chicago, Ill.; Dudley, A. Palmer, New York City; Dodd's Newspaper Adv. Agency, Boston, Mass.; Dunglison, R. J., Philadelphia, Pa., 2; Davisson, J. H., Los Angeles, Cal.
(E) Engelmann, Rosa, Chicago, Ill.; Ermold, George, New York City. Eagleston, J. B., Seattle, Wash.
(F) Fox, William, Milwaukee, Wis.; Fann, George C., Kelley's Island, Ohio; Fox, T. B., Jesuits Bend, La.
(G) Gutmann, Joe, St. Paul, Minn.; Gapen, Clarke, Kankakee, Ill.; Goelet, A. H., New York City.
(H) Hare, H. A., Philadelphia, Pa.; Hogan, S. M., Union Springs, Ala.; Holton, Henry D., Brattleboro, Vt.; Hummel & Parmele, Philadelphia, Pa.; Huli, Edward M., Washington, D. C.; Holland, J. W., Philadelphia, Pa.; Hare, H. A., Philadelphia, Pa.; Howle, W. P., Oran, Mo.; Hamburg-American Packet Co., New York City; Hearne, J. C., San Diego, Cal.
(I) Ingals, E. F., Chicago, Ill.
(K) Kennedy, Robt., New York City.
(L) Landon, W. M., Fowler, Ill.; Linden, Frank C., Chicago, Ill.; Leisenring, H. G., Wayne, Neb.
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ORIGINAL ARTICLES.

HISTORICAL, CHEMICAL, PHYSIOLOGICAL AND THERAPEUTIC NOTES ON THE MEDICINAL PROPERTIES AND VALUE OF THE SULPHITES AND HYPOSULPHITES.

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A—HISTORICAL.

Notwithstanding the use of sulphur in former days and of hyposulphites as anti-fermentive or anti-zymotic in the dissecting room, in certain cases and occasionally in medical practice, no great attention was paid to this valuable class of remedies, until Burgreave (de Gaud) employed the sulphite of soda, in 1862, in solution as a lotion for healing different kinds of wounds. The advantages of this method may be summed up as follows: 1, anesthesia of the wound; 2, prevention of nervous accidents; 3, excitation of granulation and acceleration of cicatrization; 4, diminution of the quantity of pus, which it renders viscid, sweet, inodorous and neutral.

The value of the sulphites was fully confirmed by Constantin Paul, Farrini, Tagiuri, Gritti, Vignole, Galligo, Questa, Sagrini and Polli. Paul published his excellent article in *Le Bulletin Therapeutique* of 1865, Nov. 4, 5, 6, etc.

One of the first, if not positively the first medicinal application of the sulphites, was to the treatment of the sarcina ventriculi, a curious microscopic fungus, which was discovered in the stomach in certain cases of yeasty vomiting. This use of the remedy, was, I believe, made at the suggestion of Prof. Graham, and was founded on the fact familiar to him, that sulphurous acid is peculiarly hostile to the lower forms of vegetable life. The medicine was found effectual in the destruction of the sarcinæ, but had little effect in relieving the disease, of which the fungus was merely an attendant, and not a cause. Afterwards one of the sulphites was employed, upon the same principle, by Dr. Jenner of London, and others, with satisfactory results, in the treatment of cutaneous diseases known to be connected with or dependent on microscopic fungi in the skin. It was but a single step in advance to apply the remedy to the destruction of morbific fermentative processes believed to depend upon the action of the minute organisms always found associated with them. The idea of the use of this remedy seems to have first occurred to Dr. C. Polli of Milan, whose numerous experiments have gone far to prove the reality of such a power in the sulphites and their consequent applicability to the treatment of a large circle of diseases.

In April, 1866, Dr. Thaddeus L. Leavit of Germantown, Pa., published in the *American Journal of Medical Sciences*, pp. 388, 389, an interesting article entitled, "On the Use of the Hyposulphite of Soda in Intermittent Fever," from which we extract the following, as illustrating the theory upon which the sulphites and hyposulphites have been employed in Europe and America:

"Intermittent fever and its analogous affections result, as is generally believed, from a contamination of the blood caused by the introduction into it of organic poisons, generated by heat, and the decomposition of vegetable matter constituting the marsh miasma of writers. These vegetable germs or sporules floating in the atmosphere of malarial regions, each one in itself a living organic power, on entering the circulation act as a ferment, and the oft recorded results follow—the disturbance of the nerve centers, the blood thrown upon the internal organs, the chill, the reaction, Nature's mighty effort to establish an equilibrium in which she overshoots the mark and fever follows. Then the pouring out of the watery constituents of the blood in the sweat, the debility, etc."

This theory of the fermentation of the blood, though not by any means a new idea, is not universally believed, though indirectly proved by the success of the remedies exhibited. Dr. Samuel Jackson of this city, taught this doctrine in his late lectures at the University of Pennsylvania, and enthusiastically believed in the correctness of the theory of this ferment existing, as the *materies morbi* in the blood of the intermittent fever patient, and that any remedy that arrested and neutralized this action wrought a cure, hence the efficiency of cinchona and its preparations.

The powerful property of the sulphite of soda as an anti-ferment is a domestic fact well known to the farmer who, by its addition preserves his cider sweet for months. Acting upon these principles, this new remedy was administered with the following results:

Miss W., age 19, who resides in a malarious district was attacked with remittent fever, and continued for a few days without any medical advice, feeling miserable and unfitted for any duty. Finally the chill set in fairly, morning, noon, and night, with scarcely a cessation of a few minutes between the stages. Sulphate of quinia was administered immediately in varying doses and its constant use continued until at the end of four weeks the stomach became intolerant and not the slightest influence on the regular routine of chill, fever and sweat was perceptible; the patient also suffered from excessive nervousness, which somewhat complicated her case. Quinia was again, after two days' suspension, renewed, but with no remediable effect.

October 12. This afternoon I began with 15 grain doses every three hours, of the hyposulphite of soda in solution with a little orange flower water, which formed quite a pleasant preparation, to be continued through the night. At my visit the next morning at eleven o'clock, the pulse was eighty-four beats in a minute, and no chill had been felt, the first omission in the exacerbation for over four weeks.

The sulphite was continued for three days, and then at longer intervals and effected a perfect cure.

In those cases which resist the beneficial influences of quinia, the hyposulphite will prove of great value, while its rapid absorption and speedy action render it in congestive and malignant types, where

relief must be furnished immediately, a prompt and efficient remedy. The principle of its action holds good in all diseases of blood poisoning and of zymotic origin, hence the success of Polli of Milan, Cummins of Cork, and others. Dr. Leavit in 1866, speaks of the decay of the cinchona tree and warns us to seek in time a substitute for this most valuable drug, which he firmly believes is to be found in the hyposulphites.

In October, 1866, Dr. W. H. Baxter of Moscow, Iowa, writes to Prof. N. S. Davis that he was induced by Dr. Leavit's statement in the *American Journal of Medical Sciences* for April, as to the efficacy of the hyposulphite of soda in malarial fever, to employ that article. In the last month Dr. Baxter says he has treated over one hundred cases of simple intermittent and remittent fever with this remedy alone, and in no case has there been an exacerbation after taking the remedy a reasonable length of time. He gave it in 15 grain doses in solution in water. He has not trusted to this remedy alone in pernicious or malignant types.

Dr. Wood devotes considerable space in his "Therapeutics and Pharmacology," to the sulphites. The late Dr. Charles Turpin, a distinguished and accomplished physician of New Orleans, published a valuable article on "Sulphites and Hyposulphites" in the *New Orleans Medical and Surgical Journal*, for July, 1866.

B—CHEMICAL AND PHYSICAL CHARACTER OF THE SULPHITES AND HYPOSULPHITES.

The sulphites are compounds of sulphurous acid and salifiable bases, and are employed, almost to the exclusion of sulphur itself and sulphurous acid, as internal remedies or prophylactics, in diseases supposed to have a zymotic origin. The special salts employed are the sulphites of soda, potassa, ammonia, magnesia, and lime. These salts are prepared by passing sulphurous acid through a solution of the alkalies or their carbonates. Such, at least, is the case with the sulphites of soda, potassa, and ammonia; but the less soluble of these salts, as the sulphites of magnesia and lime are more conveniently prepared in the way of double decomposition. If one of the soluble sulphites, but especially sulphite of soda or ammonia, be added to a soluble salt of the base, the sulphite of which it is designed to prepare, as the chlorid of magnesium or calcium, in solution, the sulphite of the base employed, as of magnesia, or of lime, will be precipitated. The sulphite of lime, however, may be procured, like the alkalin sulphites, by passing the acid gas through lime suspended in water (Thénard). In all instances, the evaporation should be carefully conducted so as not to drive off the acid, and with as little exposure to the air as possible; as the sulphites in solution are strongly disposed to absorb oxygen from the air, and thus pass into the state of sulphates. Even in the solid condition, they slowly undergo the same change; and they should, therefore, when prepared, be kept, so far as can be conveniently done, from contact with the atmosphere.

These salts have in general a sulphurous taste, and, on exposure to heat, or by the addition of an acid, emit the characteristic odor of sulphurous acid, familiar to every one as that arising from a burning sulphur match. As before stated, they are disposed to absorb oxygen from the air, and are finally converted into sulphates. They are distinguishable from the hyposulphites, which, though occasionally used, are thought to be less efficient, by depositing no sulphur when their solution is treated with diluted sulphuric acid. In both kinds, sulphurous acid escapes, known by its peculiar odor; but with the hyposulphites a deposit of sulphur takes place, which the hyposulphurous acid gives up, when converted into the sulphurous. As the sulphites all operate through the qualities of their acid, they may be used indiscriminately in relation to their efficiency, though some of them are preferred for peculiar qualities, regarding convenience and administration. The bisulphites are sometimes used indiscriminately with the sulphites, and it may not always be very easy to distinguish them. The bisulphites, however, are neutral to test-paper, while the proper sulphites have a slight alkalin reaction. They are prepared by passing sulphurous acid gas *in excess* though the alkalin solution (Thénard). They are probably quite as efficient as the sulphites, and perhaps more so in consequence of their larger proportion of acid.

The hyposulphites consist of salifiable bases, combined in equivalent proportions with hyposulphurous acid, which as now generally viewed is composed of two equivalents of sulphur and two of oxygen (S_2O_2). This acid, however, exists only in composition; being decomposed into sulphurous acid (SO_2) and sulphur when separated from its salts. The hyposulphites may be prepared by boiling a sulphite or bisulphite for some time with sulphur; in the former case, the sulphurous acid taking up an additional equivalent of sulphur; in the latter, one equivalent of the acid escaping, while its place is supplied with an equivalent of sulphur. The hyposulphites are more stable than the sulphites, passing with greater difficulty into the state of sulphites by contact with the air. The alkalin hyposulphites, as well as those of lime and magnesia, are very soluble in water. They are known by the precipitation of sulphur when decomposed by an acid (Thénard, 6e éd. iii. 280), 460), sulphite of soda. According to Berzelius (iii. the salts formed by passing sulphurous acid through a solution of carbonate of soda, until the liquid shall sensibly redden litmus paper, is the bisulphite of soda. If to this be added a quantity of soda equal to that already contained in it, the neutral sulphite results. This salt crystallizes in prisms, which have a feeble alkalin reaction, and a taste like that of sulphurous acid; are soluble in four times their weight of cold, and in somewhat less than their weight of boiling water, and on exposure to the air are converted into sulphate of soda; while the former salt or bisulphite is neutral to test-paper, and by exposure becomes the bisulphate. Sulphite of soda is among the sulphites most used, and is especially preferred for external application. Sulphite of potassa is obtained in the same manner as the preceding salt. It crystallizes in plates or needles, decrepitates when heated, and effervesces in the air, at the same time absorbing oxygen. Berzelius states that there is also a bisulphite which crystallizes more readily than the sulphite, but is usually confounded with it by authors. (iii. 389).

Sulphite of ammonia is formed when the two gases are brought into contact; but may, no doubt, be prepared like the others by passing sulphurous acid gas through a solution of carbonate of ammonia. It has an acrid sulphurous taste, becomes moist in the

air, and afterwards dries, having been converted into the sulphate. It is dissolved in its weight of cold, and in less than its weight of boiling water. When heated, it decrepitates, loses a part of its ammonia and water and then sublimes as supersulphite of ammonia.

Sulphite of magnesia may be prepared by double decomposition between any two soluble salts, the one of sulphurous acid, the other of magnesia; sulphite of magnesia being thrown down, when the two salts are mixed in solution. It is, as thus prepared, a white powder, but slightly soluble, of a pale, earthy taste, with a sulphurous after-taste, but less disagreeable than that of the more soluble salts. It is soluble in a solution of sulphurous acid which on evaporation yields transparent crystals. These dissolve in twenty parts of cold water, and effervesce upon the surface on exposure to the air. If the salt is exposed to a great heat in close vessels, the acid is driven off, and pure magnesia remains. It is preferred by some for internal use to all the other salts.

Sulphite of lime is also prepared most conveniently by double decomposition. It is a white powder requiring 800 parts of water for complete solution. By an excess of acid it is rendered more soluble, and from a hot saturated solution is deposited, on the cooling of the liquid, in long six-sided needles.

C—PHYSIOLOGIC ACTION OF THE SULPHITES AND HYPOSULPHITES.

In accordance with the experiments of Polli, upon animals, neither vomiting, or diarrhea, or any general disturbance is observed as affecting dogs which have taken half an ounce (15 grammes) of the sulphite of soda or of magnesia. These experiments demonstrate that these salts, in doses of 2, 3 or 4 drachms daily, continued during ten to fifteen days, produce no inconvenience; and that, of all these preparations, the sulphite of lime appears to be the one best tolerated; and further, that autopsies made at several different periods of the treatment have always shown the intestinal mucous membrane in normal condition.

Experiments on man, similar to the above, have afforded like results. During the entire continuance of the treatment, the patients have presented only negative evidence of the action of these remedies, and especially have never voided sulphurous gas by any outlet. The urine remains clear, and free from ammoniacal odor, though long exposed to the air. A remarkable phenomenon, occurring in man, as in animals remains to be noticed, namely, that dead bodies and their fluids resist putrefaction when they have been impregnated with the sulphites. (Polli).

The sulphites remain in the body in the condition of sulphites, and are eliminated in the urine, where they are found undecomposed several hours after their injection, and they are not transformed into sulphates before the expiration of twenty-four hours. The reverse occurs with the hyposulphites, which preserve their characteristics intact though eliminated in the same manner. To test their presence, it is necessary to introduce a paper, rendered blue by the liquid of iodid of starch, into the mouth of a tube containing the urine previously acidulated with sulphuric acid. The paper loses its color if a hyposulphite is present.

Giving credit to the conscientious experiments of Polli and of Burgreave upon animals, it becomes difficult to refuse to admit: 1, that these salts exercise upon the economy a very marked action, an action almost specific in certain cases; 2, that their administration is able not only to retard death, but also to alleviate the symptoms of purulent infection, produced by the introduction into the circulatory system, in large doses of pus, or of blood rendered putrid by divers poisons, and to effect a cure in a marked number of such cases. Purulent infection, purulent diathesis and metastasis, phlebitis, pyemia, putrid infection, puerperal fever, form a group of septic diseases presenting a special character of putridity and a mixed alteration of liquids and solids. It is well known how grave the prognosis is in all these affections, and how powerless and uncertain are all therapeutic means. The indications can be much better met, and success becomes much more certain with the sulphites.

D.—THERAPEUTIC ACTION OF THE SULPHITES AND HYPOSULPHITES.

Illustrating the idea of Jobert and Robin in regard to the analogy between ferments and the toxic agent which appears to play the principal part in purulent infection, Dr. Polli, by his theory and experiments, induced a large number of confrères to use the sulphites, who, by their labors (Tagiuri, Capparelli, de Ricci, Mirone, Rodolfo Rodolfi, Spencer Wells), have greatly contributed to generalize their employment, and to demonstrate the real services which they are capable of rendering. To prove this, it is only necessary to quote the words of Semmola, clinical professor at Naples, whose testimony is all the more weighty, since he does not partake of the enthusiasm of his confrères, and has endeavored to specify, as far as possible, the cases in which the uses of the sulphites may be advantageous: "The diseases against which the action of the sulphites is incontestably remarkable, are putrid infections, not resulting from a specific cause. Thus, pus in putrefaction, depraved intestinal chylification, abnormal urine, produce intoxications, against which the sulphites are almost specific. They paralyze the action of the absorbed putrid substances, completely suppressing the putrid local emanations, provided that the topical applications of these remedies be added to their internal administration." In all the observations made, the dose of the sulphites has always been enormous (10, 15, 20 scruples in twenty-four hours), and their use long continued. Is this mode of employment a necessary condition for success?

The sulphites were indicated, in advance, in paludal intoxications, and the following table, prepared by Constantin Paul, illustrates the results obtained. It must not be forgotten that they are only substitutes for the sulphate of quinia, and that their action is much slower.

Fevers treated with the sulphites:

	CASES.	SUCCESSFUL.	UNSUCCESSFUL.
Mazzolini	403	336	36
Capparelli	1	1	0
Poma	15	7	8
Lattini	11	11	0
Maraglio	2	0	2
Ferrini	3	1	2
Tagiuri	2	0	2
Total	437	356	50

Ratio: cured, 81.46 in 100; unsuccessful, 11.44 in 100.
Fevers treated with quinin: Mazzolini, 184 cases; 102

cured; 82 relapses. Ratio: cured, 55.42 in 100; relapses, 44.56 in 100.

TYPHOID FEVER.

Before accepting the opinion of Dr. Polli in regard to the zymotic nature of typhoid fever, in which he admits the existence of a morbid and specific ferment susceptible of being neutralized by the sulphites, it is better to agree upon the signification of typhoid fever. This is difficult to accomplish, because of the difference of opinion as to the nature of typhus and typhoid fevers entertained by the various authorities, physicians of the French and English schools. Thus, by the French school, it is characterized by a lesion of inflammatory nature, seated in the glands of the Peyer and mesenteric ganglia, while the physicians of London, Edinburgh, and of Dublin, attach less importance to these lesions, because they have less occasion to observe them. This difference would probably continue to exist if the labors of Shattuck of Boston, of Gerhard and Pennock of Philadelphia, had not proved that there exists in the United States and England two diseases formerly confounded under the name of typhus fever, but really distinct and resembling each other only in some of the general phenomena. One, affecting young subjects, is the typhoid fever of the French school, while the other, common to all ages, is a distinct disease from the former, which bears the name of typhus fever.

As typhoid fever is less common in Italy than anywhere else, and as there is some doubt as to the nature of the typhoid fever treated by Terri, Parrigini, Finamore, Calapreta, Capparelli, Farrini, Tagiuri and Cavecri, it is best to abstain from forming any conclusions in regard to the results furnished by the sulphites in this disease.

A similar reserve will be maintained in regard to rubeola, scarlatina, variola, aartre, scorbutus, muguet, etc. In purulent catarrhs of the bladder and in cancers of the womb at a certain stage, injections of the sulphites are very active, either as disinfectants or as preventives or curatives of the nervous intoxication due to putrid fermentation (Semmola, Rodolfi, Capparelli).

I have thus endeavored to call the attention of the American medical profession to the well-known facts illustrating the chemic composition, the physiologic action and therapeutic value of the sulphites and hyposulphites. I would most respectfully urge upon the attention of the medical societies scattered over this great republic, the following subjects for careful examination and record:

1. Diphtheria, its systematic treatment with the sulphite of sodium, internally and also externally. It has been said by some that if the sulphite of sodium, in a recent case of diphtheria, be given in doses of 20 grains dissolved in a wineglass of water, every two hours, for a period covering several days, the disease will be arrested. Let the truth or falsity of this statement be determined by actual experiment. Let, then, the sulphite of sodium be systematically used, both locally and generally, in the treatment of diphtheria.

2. It has been affirmed that the hyposulphite of sodium given internally in regular doses, even in the presence of the poison in a yellow fever epidemic, will completely ward off this disease. I have no facts with which to prove this statement, but would advise that it be put to the test, as might easily have been done, as I suggested, in the recent epidemic at Brunswick, Ga.

3. Similar assertions as to the prophylactic powers of sulphite of sodium have been made in regard to scarlet fever, measles and typhoid fever. With reference to all these bold and highly important assertions, we have not a single recorded or well authenticated observation, and hence I would urge upon the American medical profession the importance of investigation.

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A CASE OF REMOVAL OF UTERINE MYOFIBROMA BY ENUCLEATION AND DRAINAGE THROUGH THE CAVUM UTERI.

BY J. H. ETHERIDGE, A.M., M.D.
CHICAGO.

The following report of a case of utero-myomectomy illustrates a means of avoiding the sacrifice of the Fallopian tubes, ovaries and uterus. The usual operations for removing uterine fibroids by hysterectomy or by tying off the broad ligaments are only too often necessary. Where these growths can be safely removed without sacrificing the organs that give to women her sex characteristics, no arguments can obtain to the contrary. The dangers from enucleation arise from imperfect drainage. The large cavity left in the uterine wall after turning out a myofibroma becomes a source of septic peritoneal infection unless the freest drainage be effected.

In performing a laparo-hysterotomy for fibroids, only selected cases can be taken. The steps of this operation consist of enucleation of the growth and securing drainage down through the uterus and vagina. The operation is wholly extra-peritoneal, the incision through the capsule being permanently closed. The two essentials to success are free drainage and complete hemostasis. In rare cases the sac can be sewed to the abdominal incision and drainage in this manner secured through packing it with iodoform gauze firmly enough to stop hemorrhage. By thus effectually closing off the peritoneum all danger of infecting this organ is averted.

To the distinguished surgeon, Dr. Senn, is due the credit of first describing the operation of laparo-hysterotomy with drainage through the uterine cavity for selected cases of uterine myofibroma. This procedure should hereafter be known as "Senn's operation."

The patient, age 47 years, had ceased menstruating two years previously. She had borne four children, the youngest of whom was 12 years old. Two years before the last confinement she began to have post pubic pains with much vesical irritability. These symptoms she continued to have till her operation. Between her third and fourth confinement she had had two miscarriages with great loss of blood, doubtless due to the beginning growth of her uterine tumor. After her last confinement she also experienced an enormous uterine hemorrhage. Ten years later—two years before her operation—she passed through the menopause somewhat abruptly. A year later there began a series of hemorrhages that eventually brought her to the Presbyterian Hospital in Chicago, in an anemic condition that threatened to extinguish her life.

Examination revealed a large myofibroma, freely movable, extending to the umbilicus. It was smoothly rounded and as uniform as a pregnant uterus in its contour. The cervix uteri was crowded firmly against the symphysis pubis, and the uterine cavity was four inches deep, the sound passing up directly behind the bladder. The tumor had developed wholly in the posterior wall. The usual preparations were made for an abdominal hysterectomy.

On May 25, 1892, the operation was performed. The usual median line incision was made. As soon as the nature of the tumor was determined the incision was lengthened to seven inches, the mass, free from adhesions, was eventrated, and the intestines were held back by a broad gauze compress. The fact that the mass sprang from the posterior wall of the uterus at once became evident. The entire uterus was outlined on the anterior surface of the mass with singular and striking clearness. After the elastic ligature was securely tied about the lower part of the growth an incision in the median line, five inches long, was made from before backwards across the top of the capsule. The entire growth was enucleated with astonishing ease without opening the cavum uteri. The cavity extended down to the Douglas cul-de-sac, and about six inches below the lower angle of the incision. Hemorrhage was entirely absent, apart from the escape of the residual blood of the capsule and the uterus. The lower two-thirds of the collapsed capsule was brought into strong coaptation with large catgut. An incision was then made into the uterine cavity with a scalpel, from just above the internal os to the fundus uteri, in the median line of the posterior wall. One end of a long piece of iodoform gauze four inches wide was then carried down into the vagina with a dressing forceps, and the remainder of it was crowded into the collapsed capsule. It was placed like the pleats of an accordion in order that its removal could be accomplished without unnecessary disturbance.

Afterward the incision in the capsule was closed over the packing as tightly as large catgut could draw it. The edges of the incision which were half an inch thick were closed with three rows of sutures, the inner one, heavy catgut, the second of the smaller catgut, and the third of silk. The greatest care was exercised in placing the second row of stitches, the object being to bring in contact a layer of the peritoneal surfaces about one-third of an inch wide on either side of the wound. For this purpose a cutting needle was avoided. An ordinary sewing needle was used. Seven interrupted stitches were placed, two to the inch, the incision having contracted about an inch and a half. The needle was inserted nearly half an inch from the edge of the wound and emerged a line or two from the free border. It was made to include the peritoneum and considerable of the substance of the capsule tissue to prevent tearing out. Upon the opposite side of the wound a similar method of introducing the suture was used. After this second row of closing sutures was tied, a third row of intermediate sutures of fine silk, cut short, was introduced. Thus was effectually secured a coaptation of the serous surfaces over the incision in the capsule, and the entire cavity of the peritoneum was shut off.

The time had now arrived for testing the efficacy of the hemostasis. The elastic ligature was removed, and at once arterial blood oozed freely from between the stitches. Recognizing the fact that the blood supply must come from below, three heavy, double, saddler's stitches of large catgut were introduced through the capsule from side to side, extending from before backwards. The first was placed well into the substance of the cervix, the second one-half an inch posterior to that, and the third still farther posterior to the second. They were tied as tightly as they could be drawn. Afterward, no further hemorrhage appearing, the abdominal incision was closed with interrupted silk sutures, and the patient was put to bed in good condition. The amount of hemorrhage could not have exceeded three ounces. Time of the operation, thirty-five minutes.

For two days afterward there was free drainage of blood and serum. The first night the patient slept two hours soundly. On the fifth day the gauze was easily removed. From that time the progress of the patient was entirely satisfactory, and she left the Hospital on the thirty-fifth day, and has remained well ever since.

The condition of a patient, before the menopause, undergoing this operation of laparo-hysterotomy—or Senn's operation—compared with what it would be after an abdominal hysterectomy, with its abruptly induced menopause and nerve storms, so graphically described by Professor Goodell in a recent lecture, can but be impressed upon the mind of the gynecologist.

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BRIGHT'S DISEASE.

Read before the Pennsylvania State Medical Society, 1893.

BY JOHN M. BATTEN, M.D.

PITTSBURG, PA.

J. McK., age 40, a molder, while putting up an iron fence, Nov. 16, 1885, sat on the cold damp ground; the following evening was taken with chills, fever and backache. In a few days afterward I was called in and found him with general anasarca and urine almost suppressed. Upon examination of the urine I found it highly albuminous and his bowels constipated. I ordered him to take a very hot bath, wet cups to back and compound jalap powder in 30 grain doses, three times a day. With this treatment, continued to suit the varied conditions of the case, the patient recovered in about two weeks.

F. S., age 6, a male. In June 1886, suffered with an intractable albuminuria and hematuria, following a mild attack of scarlet fever which came near ending my little patient's life. The anasarca had extended all over the body, so that he looked more like an alabaster statue than a human being. This condition had developed, notwithstanding I had almost exhausted all remedies, internal and external, within my therapeutic knowledge till I had about lost all hope of my little patient's recovery. In this dilemma I put him on small doses of muriate of pilocarpine gr. 1-12, three times a day, when the anasarca and hematuria soon began rapidly to subside and he recovered.

R. S. E., a painter, a male, age 21, came into my office on Sunday, Jan. 10, 1891, complaining of dizziness and imperfection in vision, accompanied with great pain in the back, loss of appetite and bowels constipated. He stated that he had been at an oculist's in the month of May last, and the oculist had ordered him to wear glasses. On this examination I could not make a satisfactory diagnosis. I ordered him home and to bed and to take a dose of compound jalap powder. On the following day I examined his urine which revealed albumen in it. I prescribed iodid of potash, a number of wet cups to back, and milk diet. On Jan. 19, 1891, the highly albuminous urine became very bloody with great pain in region of right kidney. So great was the pain that I suspected calculus in this kidney. I ordered wet cups applied over loins and ergot combined with the iodid of potash. On Feb. 7, 1892, the blood and albumen in the urine disappeared, sight became normal and patient recovered.

This patient no doubt had had albuminuria since May when he was fitted for glasses. He gave no cause other than his business for his sickness.

In albuminuria with anasarca following scarlet fever, I have found the following medication successful in many cases:

℞ Submuriatic hydrargyri gr. iv.
Pulv. jalapæ. gr. vi.
Antimonii et potassii tartras gr. ¼.

M. ft. pulv. in chart. dividendi T (1) Sig. To be given to a child 5 years old. After the bowels have been moved freely put the patient on

℞ Potassii nitrates ℥i.
Tinc. digitalis ℥ij.
Aquæ ℥vi.

M. Sig. A tablespoonful carefully given every six hours.

The frequency and size of the dose may vary according to age and condition of the patient. A hot bath may be given daily to encourage diaphoresis. The patient should be kept in bed.

M. B., a boy 5 years old; anasarca, convulsions and albuminuria following scarlet fever. Patient very sick. I followed the above line of medication and he recovered.

I have found that the tincture of the chlorid of iron given in suitable doses, together with fresh sweet cider *ad libitum* in the convalescence of scarlet fever to be very useful remedies in preventing albuminuria. Patients should not leave the bed too soon after an attack of scarlet fever.

On Friday, Oct. 24, 1890, R. S., age 11 years, female, came into my office with the assistance of her mother after having convalesced from a severe attack of typhoid fever. Her gait was shuffling with right shoulder depressed; she complained of backache, colicky pains in bowels, loss of appetite and inability to walk erect. I ordered her home to bed,

dry cups to back, and hot poultices to bowels. The following day I found albumen in her urine. I ordered her nitro-glycerin internally, milk diet, dry cups repeated to the back and hot poultices continued to the bowels. Under this treatment she did not improve. Nov. 1, 1890, I substituted iodid of potash in 5 grain doses for the nitro-glycerin, and Nov. 21, 1890, the urine became normal, the shoulder resumed its wonted position, the shuffling and uncertain gait disappeared, the appetite improved and patient recovered.

The cause of this girl's sickness was obscure because of the difficulty of determining as to whether the disease of the kidneys might not have been secondary to a disease of the spine, which I at first suspected. I finally concluded and correctly, too, that the drooping right shoulder and shuffling gait was secondary to the disease of the kidneys.

In 1872, I examined and prescribed for a case of chronic albuminuria and anasarca in a man, age 50 years; addicted to alcoholism. I remember that my prognosis of the case at first was not very encouraging, but to my utter surprise and entire satisfaction the patient recovered. My treatment at first was compound jalap powder in suitable doses two or three times a day, till the anasarca was relieved, when I put him on 10 grains of iodid of potash three times a day till he recovered. The rapidity with which he recovered under a specific treatment would point to a syphilitic taint which I have no doubt he had.

On Friday, March 24, 1893, I was called to see P. D., age 37, a saloonkeeper; intemperate; occasionally got intoxicated and would remain so for a week; high liver. When I saw him he had been sick for about a month under the care of a doctor, but continued to get worse till the urine was almost suppressed and highly albuminous, and there were anemia, ascites, general anasarca of the body, constipation, orthopnea, great tension of heart's action, and cough. I ordered patient to take a hot bath, go to bed and then commence to take 3 grains of compound jalap powder every eight hours. I continued the hot baths once every day and compound jalap powder as directed for about a week, till ascites and anasarca disappeared. Then I put him on a tablespoonful of Basham's mixture of iron with 5 drops of tinc. digitalis every eight hours, 1 drop of nitro-glycerin in 9 drops of absolute rectified spirits of wine every eight hours alternating with the Basham's mixture, and dry cups to back three times a week; the bowels to be kept open once or twice a day with the compound jalap powder, and the patient to be kept on milk diet. The albumen did not diminish in his urine as rapidly as I had hoped it would do, and I suspected my patient might have had syphilis, although he positively denied ever having had that disease. However, on April 17, in addition to the other treatment, I put him on 10 grains of iodid of potash every eight hours which iodinized him. After he had suffered with intense headache, swollen face and eyelids, scanty urine and hoarseness for three days, and after he had taken a drachm and a half of iodid of potash, I suspended all medication for twenty-four hours and wet cupped my patient over the loins. At the end of this period I resumed the Basham's mixture, tinc. digitalis and nitro-glycerin. The urine commenced to flow and my patient became more comfortable. Sunday, April 23, the urine, for the first time since I saw patient, is free of albumen and he passes about three pints of that fluid daily; his appetite is good, tongue clean, and says he feels well. The specific gravity of the urine is 1000. The bowels move once or twice a day by taking a wine-glassful of Vichy water three times a day.

The following day the patient was up and about his room and passed three pints of urine with 10 per cent. of albumen in it. He continued to be up and about his room and to pass the same amount of urine daily but the albumen in it ranged at different times from 10 to 20 per cent. till May 12, 1893, when it became clear, straw-colored, and free of albumen. Specific gravity, 1010. The same treatment has been continued. I think now my patient has fully recovered, and he will be allowed to go out during favorable weather. The same diet will be continued for some time.

I wish to emphasize what appears to me to be a fact, that is, that there are certain pathologic conditions in chronic albuminuria which should not be overlooked in making a prognosis of the case. It is a well-known fact that a part of one kidney or a part of both kidneys may be diseased, while the healthy parts of one or both kidneys may perform the necessary functions of those organs. Again, only one kidney may be affected, while the healthy kidney will perform the function necessary for both. In the examination of the urine of such cases, albumen and casts may be presented and the physician learning these facts by testing the urine will be apt to give an unfavorable prognosis. In the case where only a part of one kidney or a part of both kidneys are diseased, the prognosis would be favorable, according to the extent of the kidney or kidneys involved.

We should carefully inform ourselves as to what may have been the cause of the kidney disease; whether acquired or hereditary? If acquired, the causes of the disease should be searched after and if possible eliminated. If he has been a gormand his diet should be prescribed. If sedentary in his habits he should take more exercise. If intemperate in alcoholic beverages he should abstain from drinking them. If he is syphilitic, specific treatment should be inaugurated. When the cause is hereditary there are many irregularities in the constitution that are worthy of study and thought, and there are many conditions arising in the course of the disease that may be ameliorated by hygiene, diet, climate and drugs.

Nitrite of amyl and nitro-glycerin relax and dilate the whole arterial and capillary system. Iodid of potash makes the heart's action more regular. Digitalis increases the force of the heart's action, but at the same time contracts the arterioles. Aconite and veratrum viride make the heart's action slower and more feeble. Convallaria makes the heart's action slower and stronger. Hydrate of chloral dilates the arterioles. The volume of blood can be diminished by blood letting and by eliminating the plasma of the blood indirectly by sweating, purging and diuresis. Now, no doubt we can give relief to a patient suffering with Bright's disease by judiciously prescribing the above remedies, suitable to the varied conditions which may arise in the course of the disease.

If, upon examination of the urine, we find albumen, we may give nitro-glycerin. If there has been a previous history of syphilis, iodid of potash should be prescribed in large doses three times a day well diluted in water, or mercury may be given in small and repeated doses, or the iodid of potash and mercury may be given combined. If the bowels are constipated, we may give the compound jalap powder in suitable doses to keep them sufficiently open and soluble to accomplish what may be indicated in the case. If dropsy and anasarca have made their appearance accompanied with pain in the back, we should put our patient to bed, apply wet cups to back, order a hot bath taken every day by the patient and give nitro-glycerin, iodid of potash, or compound jalap powder as may be indicated by the condition of patient. If there are indigestion and nausea of the stomach we should direct our remedies to that organ by giving vegetable bitters, diluted muriatic acid, diluted sulphuric acid or alkalies.

If there is irregularity in the heart's action, we should direct our remedies to that organ; if irregular, iodid of potash with small doses of opium. If the heart's action is increased and strong, aconite or veratrum viride may be given. If weak, digitalis. If the volume of the blood is too great, we should

give cathartics, diuretics and diaphoretics. In the earlier stages of dyspnea, iodid of potash in 5 grain doses, combined with small doses of opium may effect a relief. In severe attacks of dyspnea, dry cups to the chest and the inhalation of oxygen may be beneficial. In the worst cases of dyspnea it may be justifiable to keep the patient under the influence of an anesthetic. If there are convulsions, opium may be resorted to. The old doctrine that opium is a very dangerous remedy in Bright's disease of the kidneys is true, yet it is equally true that it is a very useful remedy. If the patient is anemic we should give large doses of tincture of the chlorid of iron and oxygen. In certain conditions sometimes one of the natural mineral waters, such as Carlsbad water, may be given.

In the later development of the disease we have restlessness, sleeplessness, headache, twitching of the muscles of the face, nausea, vomiting, delirium, convulsions and coma. To relieve these varied conditions we may resort to opium, hydrate of chloral, nitrite of amyl, convallaria, digitalis, caffein, blood letting, sweating and cathartics.

The diet in the management of a case of Bright's disease of the kidneys is a very important feature. It would seem, as nitrogenous ingesta in great part undergo metamorphoses and yield their nitrogen to be carried off in combination with a portion of other elements under the form of urinary products, that a non-nitrogenous diet or one approximating it, is the proper food in this disease, notwithstanding, Dr. Ephraim Cutter asserts that he has seen a full-fledged case of Bright's disease of the kidneys restored to health by absolute beef diet in six or more months.

THE WATERS OF THE GLEN SPRINGS, WATKINS GLEN, NEW YORK.

WITH COMPARATIVE TABLE BY J. K. KING, M.D.

Read in the Section on Materia Medica and Pharmacy, at the Forty-fourth Annual Meeting of the American Medical Association.

BY F. E. STEWART, M.D., PH.G.

WATKINS, N. Y.

It has long been our habit as physicians to send our patients to the healing waters of Europe for health and recreation. When it is considered that there are nearly a thousand mineral springs in the United States of America, many of them fully equal to any that may be found abroad, this fact seems anomalous. One feels like saying with Naaman, the Syrian, "Are not Abana and Pharphar, rivers of Damascus, better than all the waters of Israel? May I not wash in them and be clean?" While it is true that the Spas of Europe, being older, are, as a rule, better equipped with establishments where the waters may be used under the direction of physicians specially trained in their administration, there are similar places in the United States, and I believe in developing the resources of our own country. Advantages may be given to our patients in America similar to those found in Europe at a figure within the means of the ordinary American citizen. But we must study the subjects of balneology, climatology, hydrotherapy, etc., that we may send our patients to American Spas where the correct principles of treatment are carefully carried out.

Dr. Titus Munson Coan of New York city, who has made the subject of the mineral springs of the United States a special study, says in his paper on "American Mineral Waters with some remarks on American Climates," read before the Ninth International Medical Congress: "There are about six hundred mineral springs in the United States now utilized as places of resort. At few of these, indeed, are there fine hotels; at fewer still are there regular establishments. But the constant process of natural selection, swifter among us than elsewhere, will cause rapid progress in all that relates to balneology among us. Of all the communities of the world, that of the United States is the one for which the restful influences of spring treatment are indicated."

And how are we to realize this development of American Mineral Spas, except through the efforts of the medical profession? Institutions should be established at the mineral springs in convenient parts of the country from Maine to Florida, and from the Atlantic to the Pacific. Such establishments should be put in charge of competent physicians for their development. But they can never reach the high standing desirable until the medical profession, as a whole, educates itself to know and demand the higher class of facilities.

Quoting again from Dr. Coan's paper: "And what data have we for the survey of this vast territory from the balneographic point of view? We have the various surveys, whether made by States or by the general Government. A considerable number of monographs by different geologists and physicians and medical societies, notably the AMERICAN MEDICAL ASSOCIATION, and a lesser number of general treatises. We have, as yet, little to show that will compare with the learned works of Trousseau, Durard-Fardel, Braun, Hellft-Thilenius, Rotureau and Leitchtenstein. Dr. Walton has produced an excellent manual, one that may be called a pioneer work in this direction, though it is necessarily incomplete from the lack of sufficient data. These, however, are now being developed on every hand, and particularly by the United States Geological Survey, to whose publications the student of American mineral waters is under great obligations, and especially to Dr. Albert C. Peale's recent monograph, 'Lists and Analyses of the Mineral Springs of the United States,' published as Bulletin 32 of the Geological Survey, a work which must be consulted for the fullest data yet available in the matter of analyses, of which 859 are given."

In the light of such facts as these, no apology is necessary for bringing to your notice the waters of several mineral springs in central New York, near Watkins Glen, which hitherto have not been mentioned in literature.

The existence of a mineral spring on the hillside near Watkins Glen, New York, has long been known to the residents of the town, who have for many years ascribed to it marvelous healing powers. The spring is on the site of an ancient "deer lick," and was known to the Seneca Indians, who had erected a log curbing around it, the remains of which were found during subsequent excavations. The waters closely resemble those of the European Spas, Kreugnach, Hall, Duerkheim and Krankenheit. Professor Chandler's analysis of this spring shows it to contain chlorid of sodium and of potassium, the bromid and iodid of sodium, the bicarbonates of ammonium, iron, calcium and magnesium, with traces of other mineral salts, among them bicarbonate of lithium.

INGREDIENTS.	Glen Springs Deer-lick.	Glen Springs Neptune.	Saratoga Vichy.		Glen Springs Vulcan.	Kissingen Racozzi.	Kranken-heit Johan George-quelle.	Durck-heim Virgilline, Brunnen.
Chlorid of Sodium	114.7561	400.444	128.689	32.80	149.06	357.68	14.192	631.336
" Potassium	0.2309	8.045	14.113			17.60		5.424
" Magnesium						18.64		30.064
" Calcium								110.592
Bromid of Sodium	.5962	8.559	0.990			.48		1.544
" Magnesium								
Iodid of Sodium	0.0362	0.138	Trace			Traces	.096	.152
Sulphate of Lime				18.32		23.92		1.344
" Soda							.760	
" Potash		0.889	Trace	Trace			.752	
" Magnesia						36.00		
Bicarbonate of Soda		10.775	82.873	312.72			19.864	
" Lime	41.7667	143.399	95.522	26.16	29.80	Carbonate 65.12	5.624	14.816
" Magnesia	19.2804	121.757	41.503	20.72	11.37		1.832	.472
" Iron	1.7257		0.052	0.24	1.87	1.92	.008	.752
" Ammonia	1.0841							
" Potash				22.72				
" Strontia		Trace	Trace	0.16				
" Manganese				Traces			.008	.032
Phosphate of Soda	Trace	0.016	Trace	4.24				.048
Silica	0.6415		.758	0.40	Trace	.72	.552	.648
Alumina	Trace		.473		Trace	Chloride 1.20		Chloride .312
Bicarbonate of Lithia		4.761	1.760					
Phosphate of Lime								
" Alumina							.168	
Aluminum								.008
Nitrogen								
Carbonic Acid Gas						47.77 C. T.		
Temperature	51°							
Specific Gravity								

For a statement of the percentage composition, see the comparative table kindly furnished by my friend, Dr. J. K. King, appended to this paper. The waters of the Deer-lick Spring are clear and limpid, without odor, and with a slightly astringent, mildly saline taste.

Several years ago certain parties were boring in the hillside not far from the Deer-lick Spring, and hoping to discover natural gas. Seventeen hundred feet below the surface the tool struck a layer of strong brine. This brine was found to contain upon analysis a large proportion of calcium chlorid, thus unfitting it for the manufacture of salt for commercial purposes, and the well yielding neither gas nor brine fit for manufacturing purposes, was abandoned. The waters, however, resemble the celebrated brines of Kreugnach, Rheims and Nauheim, and are now being used for medical purposes.

According to Professor S. A. Lattimore of the University of Rochester, this brine, which has a specific gravity of 1133, each gallon yielding 1.62 pounds of salt, contains per gallon 3,499.08 grains of calcium chlorid, 6,368.33 grains of sodium chlorid, and 635.67 grains of magnesium chlorid, with traces of the iodid and bromid of sodium, iron and alumina. He says it differs from all brines that he has hitherto analyzed, and from nearly all those whose composition has been reported, on account of the total absence of calcium sulphite (gypsum) which is almost invariably present in brine everywhere. No other sulphates are present in this brine, and he says: "The very large percentage of lime (calcium) in the form of chlorid is equally exceptional in my experience." The name, Neptune, has been given to this spring.

Two other mineral waters were struck by the drill in the same locality last summer. One of them is a delightful table water, and has been named Salubria, to perpetuate the ancient name of Watkins, which it bore before Dr. Watkins purchased the real estate in the neighborhood and gave the town its present name. The other spring contains iron, and has received the name, Vulcan.

Salubria water contains in each sixteen fluid ounces 196.28 grains sodium chlorid, 19.68 grains calcium carbonate, .05 grains magnesium carbonate. It is therefore a saline calcic water. In composition it resembles in some respects the waters of Vichy, Tachingen and Bilin, but is more closely related to the waters of Kissingen, Homburg, Wies-Baden, Baden-Baden, Mondorf, Constatt and Sodan. It also resembles the waters of Saratoga. The taste of the water is quite similar to Kissingen. When artificially charged and bottled in the same manner as similar waters elsewhere, it compares favorably with those now on the market.

Professor Lattimore's analysis shows the Vulcan Spring to contain in each sixteen fluid ounces calcium carbonate 29.80, magnesium carbonate 11.37, iron carbonate 1.87, sodium chlorid 149.05. The water also contains much carbonic acid gas. By consulting the comparative table it will be observed that this water stands midway between the Pandur and Maxbrunner waters of Kissingen in regard to the amount of chlorid of calcium present; that in regard to the amount of iron the Kissingen, Ragoczi, contains in each sixteen fluid ounces, 1.92 grains; the Pandur 1.62, while the Maxbrunner contains no iron at all. It is evident, therefore, that the Vulcan water possesses the great advantage of being more mildly saline than either of the waters of Kissingen containing iron.

The site of these springs is a beautiful spot on the shores of Seneca Lake, west of the village of Watkins, and about ten minutes walk from the famous Watkins Glen. The altitude of the spot is about three hundred feet above the surface of the lake, and seven hundred and thirty feet above sea level. The hotels in the village are good, and well patronized in the summer time. The Sanitarium situated near the springs was established by representative physicians from similar institutions at Clifton Springs and Dansville, and is an assured success as a sanitarium doing scientific work, and an attractive summer resting place, with bathing facilities, massage, electric treatments, etc.

Manheim Acidulous Alkaline.	Rehme Bülow Brunnen.	Carlsbad Sprudel.	Schnalbach Winbrunnen.	Arkansas Hot Springs.	Hesse Apollinaria.	Bethesda Wankesha.	Glen Springa Neptune.	Nauheim Salzbrunnen.	Austria Hall Hauptquelle.	Mount Clemens.	Kreugnach Brine.
2.780	1445.04	69.7960	0.528	0.216	28.56	1.160	6368.33	1134.488	896.32	11900.00	10495.12
Traces				0.040				43.832	0.39		28.00
6.184							635.67	16.816	20.97	648.48	585.72
1.288							3499.08	85.712	23.46	934.50	1928.00
.							Trace				
Traces								3.200	4.08	6.37	
.							Trace		0.48		
.824				0.362				6.200		100.55	
.	129.52	159.6848	0.404		18.40	0.542					
.		2.9568	0.448			0.454					
.											
	Carbonate	Carbonate			Carbonate						
30.104	59.12	72.4982	15.072		77.20	1.256					
	Carbonate	Carbonate								Carbonate	
20.048	52.00	16.1584	35.152	1.160	3.60	17.022		95.232	3.84	0.98	
	Carbonate	Carbonate							Carbonate	Carbonate	
. . . .	39.44	3.1922	35.736	2.400	27.12	12.388			1.92	0.70	
		Carbonate								Carbonate	
.608	.40	0.2456	3.544		1.20	0.042	Trace	1.592	0.64	5.60	
.									2.24		
										Iodid of Mag.	
.				Oxid.Lime					0.24	0.07	
			0.560	0.328							
Traces											
.			Trace			Trace					
.552	.08	8.4160	2.856	1.400	0.48	0.944			0.56	27.60	
.		1.7200				0.122	Trace			29.47	
.											
.									0.16		
.											
.											
.304											
54.208		62.4264						138.856			
.							50°				
.							11.33°				

Therapy:—The medicinal value of these waters is the same as that of similar waters in other parts of the world. The water of the Deer-lick Spring, therefore, is tonic and alterative, diuretic and mildly aperient. The use of waters of this class results in an improvement of the appetite and digestive processes. Tissue metabolism is promoted, and the red globules of the blood increased. This being the physiologic effect of their administration they are recommended by all authorities in the treatment of anemia, chlorosis, hysteria, neurasthenia, chronic diseases of the kidneys, glycosuria and diabetes, and in various diseases peculiar to women, such as chronic endometritis, dysmenorrhea, amenorrhea, etc.

Like the waters of the celebrated Spas of Kissingen, Homburg, Wies-Baden, etc., which it resembles in many respects, the water of the Salubria Spring is a stimulant to the mucous surfaces generally, especially to that of the stomach and bowels. This class of waters, according to the leading authorities, when taken into the stomach dissolves the mucus, and by increasing the secretion of gastric juice and bile, promote the absorption of food. This effect is probably enhanced by the well-known property of sodium chlorid upon osmosis. In large doses these waters are purgative. They aid tissue building by increasing both constructive and destructive metamorphosis. They are used extensively in Europe in the treatment of catarrhal processes, especially of the stomach and bowels, also in chronic inflammation of the pharynx, stomach, duodenum and bile ducts, in constipation, in congestive affections of the abdominal and pelvic organs, chronic endometritis, hepatic and splenic congestion, chronic inflammatory diseases of the respiratory tract, obesity, scrofula, gout, rheumatism and neuralgia. Salubria is eminently a table water, and when put up in bottles, it rivals Apollinaris.

The Vulcan water of the Glen Springs, as already pointed out, belongs to the same class of mineral waters as those of the Kissingen Spa. Like the Kissingen, it is somewhat alterative, diuretic, tonic, and mildly aperient. In gout this class of waters prove useful by exciting the secretion of the intestines, kidneys and the skin thereby reducing the habitual plethora, eliminating the gouty poison, and promoting a healthy tissue metabolism. They have been highly recommended in scrofula (though the ioda-bromated waters such as the Deer-lick are preferable), in chronic catarrh of the stomach, abuse of alcoholic stimulants, deficient secretion of gastric juice, congested liver from sedentary habits, calculus and catarrh of the bladder, and externally in various swellings of the glandular organs.

For external use, however, the Neptune brine is preferable. Like the chlorid of calcium brine of Kreugnach, so celebrated for its healing virtues, this water has a place in the treatment of a certain class of diseases. The baths given at the European Spas of Kreugnach, Rheims and Nauheim are of various kinds, and known respectively as ordinary baths, wave baths, froth baths, graduated brine baths, and baths with the addition of mother lye. The latter has great popularity. By comparing the analysis of the Neptune water with that of the graduated brines of the European Spas, it will be found that the American water does not require concentration to make it fully equal to the best of them.

Brines are graduated at the European Spas by letting the water run down great scaffoldings of thorns whereby it is concentrated by evaporating from the extensive surfaces thus exposed to the air. When the evaporation has been repeated several times, and the brines are concentrated to such a degree that they contain from 140 to 180 grains of salines to the pint, they are in many places boiled, in order that those salines which are not easily soluble, such as chlorid of calcium, silica, carbonate of lime, carbonate of magnesia, alumina, iron and manganese may be precipitated, and removed from the liquid. That which remains after several weeks boiling is called "Mother Lye." This is half salt and half water, containing from 2,000 to 4,000 grains of salines to

the pint. Its chief solid constituents are chlorid of calcium, magnesium and potassium, and bromid and iodid of sodium and magnesium. The water of the Dead Sea will serve as an illustration of Mother Lye. There is no visible outlet to the great basin of saline water, and the waters, concentrated by evaporation in the sun, precipitate the more insoluble salines, and hold those which are more soluble in solution. The most celebrated mother lyes in Europe are those prepared at Kreugnach, Halle, Volterra and Durcheim. The quantity generally added to baths varies from two to thirty quarts. By a fourth concentration, crystallization ensues, and the hard substance finally remaining is known as "Mother Lye Salt." This contains a certain proportion of water, and is very hygroscopic, so that when exposed to the air, it soon becomes liquid again.

Arrangements have been made at Watkins for evaporating the Neptune brine for the purpose of preparing salt for giving what are known as salt-rubs. As will be seen, however, the water does not require concentration, but dilution, for use in bathing. Indeed, for some purposes, especially in treating uterine troubles by irrigation, great dilution is required at first, to be gradually employed in stronger solution if required.

TREATMENT OF PIGMENTATIONS OF THE SKIN.

Read by title in the Section on Dermatology and Syphilography at the Forty-fourth Annual Meeting of the American Medical Association.

BY JOHN V. SHOEMAKER, A.M., M.D.
PHILADELPHIA, PA.

Every blemish upon the skin is the source of anxiety and mortification to its possessor. In addition to those lesions produced by inflammatory, hypertrophic and neoplastic processes, we meet with a number of affections in which the normal pigmentation is decidedly altered. A generalized or local discoloration is produced by various causes, some of which are constitutional while others are local in their action. In some cases we are able to improve the quality of the blood or remove the exciting cause and in this manner to restore the normal hue. In others the discoloration of the skin is one of the least important manifestations of the disease and depends upon conditions which are beyond the reach of remedial agents. We are constantly consulted by patients whose chief trouble would seem to be abnormality of pigmentation. It is necessary in each case to ascertain the origin of the difficulty before we can adopt a rational therapeusis or form a sagacious prognosis. The constitutional maladies attended by discoloration of the skin belong to the domain of general medicine and surgery. Even those, however, which we classify among diseases of the skin frequently depend upon the operation of some systemic cause. The integument is a faithful index of the healthy action of the organs and tissues of the body. In constitutional maladies the skin is blanched, discolored or subject to inflammatory processes.

Chlorosis.—This affection is characterized by a peculiar greenish or greenish-yellow tinge, indicative of the loss of hemoglobin. The number of red cells is not greatly diminished but the quantity of hemoglobin is disproportionately diminished. When viewed under the microscope the red cells are perceptibly paler than under normal conditions. The impoverishment of the circulating fluid, associated with imperfect ovarian function, accounts for the symptoms of the disease. The limits of space forbid any present discussion of its symptomatology and etiology.

The first indication of treatment is, therefore, to restore the wasted hemoglobin. This object is, in brief, accomplished by the administration of iron, with which arsenic may often be advantageously combined. As, however, chlorotics have weak stomachs, we are compelled to feel our way very cautiously in regard to medication. We should lay great stress upon the requirements of hygiene. The patients need fresh air, sunlight, gentle exercise, a nutritious but digestible diet and cheerful, or even gay surroundings. Their apartments should be well ventilated, windows should be kept open when weather and season permit; they should take short walks every day or carriage rides wherever practicable. Among the poor, in summer time, the open street cars furnish an inexpensive mode of procuring fresh air. Sunlight is of decided value in these cases, stimulating, as it does, both digestion and absorption. Sanguification proceeds favorably under the influence of light while its absence favors or perpetuates the loss of hemoglobin. The living rooms should, consequently, be sunny as well as airy. A change of climate is frequently the best initiative in the treatment of chlorosis. The mere change of surroundings, by rousing the attention and interesting the mind, is of decided assistance, for both the production and cure of chlorosis are decidedly influenced by mental conditions. In general terms, the best climate for chlorotics is one which allows the patient to spend the day in the open air, swinging in a hammock, taking a short walk or a ride—horseback or bicycle exercise if the strength is sufficient. According to the season of the year, we may select the seaside, the mountains, Florida or Southern California. Increased oxygenation is an important factor in the cure of chlorosis. Ventilation, exercise and a suitable climate promote oxygenation and thus aid in the generation of hemoglobin. One of the most valuable therapeutic measures is a sea voyage. Salt air provokes an appetite, improves digestion, stimulates the activity of the glandular follicles and viscera of the alimentary system, strengthens muscular tissue, invigorates the heart, improves circulation and respiration, communicates oxygen to the blood and promotes sanguification. The uncertain, fastidious and perverted appetite becomes normal, the discoloration gradually disappears, the lips and mucous membrane acquire a rosy hue, the skin becomes soft and acquires a healthy color, and by the time the voyage is ended the patient is restored to health or on the high road to sure and speedy recovery.

The direct inhalation of oxygen gas is beneficial in chlorosis. The use of ozonized water is another efficient method of introducing oxygen into the system. The practice of massage is likewise followed by improvement. This procedure operates favorably in several ways. It induces an increased absorption of oxygen, invigorates the general muscular system and the action of the heart, stimulates the circulation, strengthens the nervous system, excites secretion of the digestive fluids and, consequently, improves the appetite and digestion. Massage is likewise of value by exciting peristalsis and relieving the constipation

which generally attends chlorosis. Moreover, it exerts a favorable influence upon the womb and ovaries, and thereby regulates the menstrual function, which is so notably deteriorated in this disease. Music, by its effect upon the nervous system and circulation is also capable of doing good in chlorosis, and for this reason concerts or operas generally assist in improving the condition of the patient.

I have casually alluded to diet and have mentioned several important methods by which appetite and digestion are strengthened. As regards the nature of the food, it should contain as large a proportion of albuminous material as can be appropriated. It is necessary to be very circumspect in beginning the treatment. Oysters, plainly cooked, sweetbread, underdone beef with bread, with potatoes well boiled, mashed and covered with meat gravy, together with a little wine or ale, are generally tolerated. In extreme cases it is advisable to commence with the administration of prepared or predigested food. Kumyss is an excellent preparation in these cases. At once nutrient and stimulant it fulfills all the indications of a food. It is almost invariably well borne and, in fact, is usually effective in relieving gastric irritability. It stimulates the appetite and the action of the heart, deepens the respiratory movements, increases the proportion of hemoglobin in the blood. Kumyss now can be readily made from the kumyssgen powder. Another form of fermented milk which answers the same purpose is known as kefir. This preparation has a pleasant, acidulous taste, is acceptable to the stomach and has been used with advantage. It possesses less alcoholic strength than kumyss. Kefir, however, is less easily procured in this country.

In the medicinal treatment of chlorosis it is essential that the bowels should, from the beginning, be kept open, relieving the system of waste products which otherwise are re-absorbed and assist in the destruction of hemoglobin, perpetuating the morbid condition. Aloes or aloin, given in pill, combined with iron and with the addition, perhaps, of belladonna, strychnin, ipecacuanha and myrrh, as prescribed by Sir Andrew Clark, answers a good purpose. Instead of aloes, Hugh Woods makes use of the double sulphate of iron and magnesium in the dose of 10 grains three times a day. The old-fashioned ferro-saline mixture, consisting of sulphate of magnesia, cream of tartar and dried sulphate of iron, dissolved in water will efficiently fulfill the same indications, provided its styptic taste does not prove a bar to its use. Colocynth, also, in conjunction with iron, has been employed with advantage. Collinsonia canadensis, by improving appetite, digestion and elimination, is serviceable in chlorosis. Dr. Alexander claims to have secured improvement by the hypodermic injection of camphorated oil in the dose of 15 minims. Iron is the remedy *par excellence*. The form of its administration depends principally upon the tolerance of the stomach. Bland's pill is an excellent preparation and is generally well borne. When there is excessive gastric irritability we may make use of some of the more recently introduced preparations, such as the albuminate, solution of the malate or lævulose of iron. Again, chalybeate spring water may beneficially enter into the treatment. Another excellent method consists in the direct administration of hemoglobin. This substance, it has been shown, is well borne by irritable stomachs, does not excite dyspeptic symptoms and is rapidly absorbed. It increases the number of red corpuscles and restores their normal composition. Hemoglobin improves the appetite, promotes menstruation, increases body-weight and strength and favors the excretion of urea. Modified forms of hemoglobin have recently been produced by Prof. Kobert, and have been presented to us under the names of hemol and hemogallol. The hypodermic injection of salts of iron is also advocated as of especial value in severe cases. Given in this manner it is rapidly absorbed and rapidly efficient. It acts directly upon the entire blood-forming apparatus. A combination of arsenic will often enhance the efficacy of iron in the treatment of chlorosis.

Local therapy is of but little value in chlorosis. All that is necessary is scrupulous attention to the hygiene of the skin by means of warm baths.

Chloasma.—As chloasma usually appears upon the face of women its successful treatment is a matter of much interest. The patches exhibit great variety, both as regards size and color. The hue may be yellowish, yellowish-brown, dark brown or even black. Chloasma may depend upon local causes, such as scratching, pressure or friction, or it may be produced by systemic affections, as tuberculosis, cancer, malaria, uterine and ovarian affections. It may also develop in the course of scleroderma, morphea, etc. Chloasma uterineum may be due to pregnancy or to disturbances of the menstrual function. Chloasma may also be associated with grave anemia.

The treatment of chloasma embraces both constitutional and local measures. Internal medication must, of course, be dependent upon the cause of the affection. If the pigmentation is merely symptomatic of a wasting affection we are not justified in expecting a favorable result from our efforts. Our attention must be directed to maintaining the general condition and checking or retarding the progress of the constitutional malady. When the discoloration has been induced by uterine or ovarian disease, we must aim to correct the disorder upon which it depends. Chloasma as the result of pregnancy usually but not invariably disappears after delivery.

Local therapy should be governed by two principles. As the pigment is deposited in the rete mucosum the removal of the epiderm will be attended by the removal of the pigmented spots. At the same time, active irritants must be avoided, as their application favors pigmentation and whatever improvement they may effect by the destruction of the affected cuticle will be but temporary. I would for this reason discountenance the use of mustard, cantharides, mineral acids and croton oil. The cautious employment of strong acetic or carbolic acid may, however, be attended by success, each spot being touched by a pledget of cotton dipped in the agent chosen. Merck's concentrated lactic acid, diluted with three times its bulk of water, applied upon a glass rod, is recommended by some writers. An ointment or plaster containing 5 per cent. of salicylic acid has also been employed. Alkalies, in the form of soap, especially the green soap, may be effectual. A solution of borax in the tincture of green soap is a good remedy. Another method consists in painting the patches with tincture of iodin. The tincture of benzoin may be used with success. The veratrine ointment of the "Pharmacopœia" spread upon the patches, will sometimes cause disappear-

ance of the pigmentation. A method of treatment much in vogue is that by some form of mercurial, corrosive sublimate; white precipitate, nitrate of mercury and mercurial plaster are the preparations most frequently employed. Hebra was accustomed to dissolve 5 grains of corrosive sublimate in an ounce of distilled water, alcohol or collodion, apply it upon a compress for four hours, prick the resulting blister and dress the surface with powdered starch. Unna, after washing the surface with alcohol, recommends the application over night of a plaster containing ammoniated mercury, which is removed in the morning and succeeded by an ointment of which the subnitrate of bismuth is a principal ingredient. In every case, when too much irritation is produced by the agent used, an emollient application should be placed upon the surface. The ointment of nitrate of mercury, either of official strength or weakened, may be preferred. The sulphocarbolate of zinc, in the strength of about a drachm to a pint of water, glycerin and alcohol, has been advised. Some practitioners rely upon plasters containing sulphur, and the late Professor Hardy mentions with approval the use of sulphurous mineral waters in the form of douches. Dr. G. H. Fox gives a formula for 4 per cent. carbonate of potassium and 2 per cent. of chlorid of sodium dissolved in orange flower water. Dr. White recommends a 1 per cent. solution of chlorid of ammonium with 15 per cent. of cologne water. Some authors advise the use of oil of cade. Professor Leloir, after cleansing the surface with soft soap or alcohol, applies several layers of a 15 per cent. solution of chrysarobin in chloroform. After the liquid has dried he covers it with a coating of the solution of gutta percha.

My own preference is for remedies which, if more slow in action, are productive of less cutaneous irritation, an effect which, as I have already stated, it is desirable to avoid. The preparations upon which I generally rely are the ointments of mercuric or mercurous oleate or an ointment containing from 30 to 60 grains of copper oleate to the ounce of excipient. A good procedure, also, is to cover the pigmented patch with the solution of hydrogen peroxid, applied by means of a camel's hair brush. Finally, I can recommend the frequent application of the galvanic current as one of the most efficient and reliable agencies at our command.

Jaundice.—A sallow complexion is the result of functional activity of the liver. The digestive disturbances and the cutaneous discoloration are best relieved by an appropriate regulation of the diet, by active exercise and by occasional employment, when an emergency arises, of a purgative dose of calomel, or by the use of such remedies as nitro-muriatic acid, or ipecacuanha. When the bile is produced in sufficient abundance but its passage into the intestine is prevented, the fluid is reabsorbed and occasions the yellow discoloration with which we are all familiar. Under these circumstances our principal aim must be the removal of the obstruction. In many, perhaps in most cases, the occlusion is due to swelling of the mucous membrane or impediment by a plug of mucus or a gall-stone. In other instances the common duct is compressed by a tumor and the outflow of bile is thus arrested. As long as the tumor is present, the jaundice will endure. Many of these new growths are of malignant character and, therefore, our efforts are necessarily devoted to relieving, as far as possible, the symptoms to which they give rise. Hydatid tumors are amenable to operative interference and with the absence of pressure the jaundice will gradually vanish. Occasionally a colon enormously distended with impacted feces presses upon the common duct and causes jaundice. Here our indication is to unload the colon. If obstruction be due to the presence of a calculus in the ductus choledochus we must administer a purgative, such as resin of podophyllin or calomel in small and repeated doses and relieve the pain by hypodermic injection of morphin and atropin and the administration of ether and chloroform. The phosphate of sodium is of value when the concretion occupies the gall-bladder as it softens and breaks up the mass. Patients who exhibit a tendency to the formation of biliary calculi should be careful as regards diet, should consume alkalin mineral waters and take an abundance of exercise. In catarrhal jaundice if, as is frequently the case, the tongue is heavily coated, it is serviceable to begin the treatment with an emetic dose of ipecacuanha. If there is decided irritability of the stomach, broken doses of calomel are efficient. This procedure allays nausea and loosens the bowels but requires to be watched closely as it is liable to excite salivation. If constipation is present a full dose of calomel, alone or combined with sodium bicarbonate, a purgative dose of rhubarb, aloes or colocynth should be administered and repeated if required. Instead of these drugs, a saline mineral water may be ordered. In chronic cases sulphurous waters are beneficial. It is of importance to regulate the diet. The food should be simple and of easy digestion. Fat should be avoided and starches are not generally well borne. Skimmed milk, oysters raw or stewed, mutton or chicken broth, sweetbread and baked potatoes are sufficiently nutritious and will not strain the digestive organs. Undigested food within the alimentary tract aggravates the duodenal catarrh and prolongs the jaundice. The activity of the kidneys should be maintained. This can be accomplished by the use of the vegetable diuretics, the acetate or bitartrate of potassium, sweet spirits of niter, etc. Frerichs was fond of giving from 1½ to 3 ounces of lemon juice in the course of the day, finding it well borne and an efficient diuretic. The skin, also, must be kept active by means of baths. The vapor, the Turkish or Russian bath may be used with benefit. This practice alleviates the itching and diminishes the pigmentation. Water impregnated with soda accomplishes the same purpose. In some cases sulphur baths are preferable. Nitro-muriatic acid added to the bath has likewise been used with advantage. A Dover's powder at bedtime is serviceable on account of its action upon the skin. Pilocarpin, however, is much more efficient. Warm baths and diaphoretics favor elimination of toxic products. Massage, likewise, is of service in reducing the discoloration and allaying pruritus. Enteroclysis has proved a valuable device in the treatment of both catarrhal jaundice and that due to the obstruction of gall-stones. Enteroclysis is a method of introducing, by means of the fountain syringe, large quantities of water into the bowel, the fluid being carried, by an antiperistaltic motion, through the ileo-cecal valve into the small intestine. A simpler method of injection has been practiced by Krull, from two to four pints of water at the temperature of 60 degrees F., being thrown into the rectum and retained as long as pos-

sible. The procedure is repeated two or three times a day and is reported to be very efficient.

Certain drugs are of decided service in catarrhal jaundice by relieving inflammation of the mucous membrane, softening mucus plugs and permitting the free escape of bile. One of the best of these is the phosphate of sodium, which may be administered alone or in combination with the arseniate of sodium. The phosphate of calcium can also be recommended. The chlorid of ammonium yields good results. Small and repeated doses of the iodid of ammonium can be given with benefit. Nitro-muriatic acid is a good remedy in obstinate cases. It has a good influence upon the gastro-duodenal mucous membrane and facilitates the passage of bile. Chelidonium, taraxacum, triticum repens and carduus benedictus are of assistance in the treatment of jaundice. The oxid of manganese has been given with success in catarrhal or malarial jaundice. The bicarbonate of sodium, conjoined with rhubarb, is serviceable in the catarrhal form. The oxid or the nitrate of silver are recommended in the same condition. Oxgall is of utility. It may be administered alone or associated with the chlorid of ammonium. Narcotic remedies, such as morphin, belladonna, hyoscyamus or conium, are sometimes of service. If obstruction is due to a stone they relax spasmodic contraction of the duct and quell pain. They also probably aid in allaying inflammation of the mucous membrane. The passage of a calculus is facilitated by the use of massage and electricity.

Malaria.—The yellowish pallor observed in chronic malaria, or malarial cachexia, represents a waste of red blood cells and hemoglobin. Not infrequently, an actual jaundice occurs, from the presence of gastro-duodenal catarrh and the deleterious influence which miasm has exerted upon the liver. Local measures, further than the frequent use of warm baths, are of but little avail in this condition. The first step toward recovery should be, wherever practicable, removal to a country in which malaria is not prevalent. A sea-voyage is one of the most valuable means of restitution to health. The toxic impress will, however, often linger long after departure from the region which gave it birth. We must aim, therefore, to regenerate the normal constitution of the blood. Quinin is, in such cases, of comparatively little efficacy. It is of value only as a general nerve tonic, given in moderate doses and associated with iron and arsenic. Iron is the remedy upon which we must chiefly rely. Irritability of the stomach may, for a time, interfere with its administration. In that case it is best to begin with some of the more elegant ferruginous preparations alluded to when discussing the treatment of chlorosis, or the ammonio-citrate of iron may be subcutaneously injected. An excellent plan is to begin the treatment by the use of kumyss. Small doses of Fowler's or Pearson's solution of arsenic assist the action of iron. Black pepper will also aid the action of the remedies mentioned. Podophyllin or podophyllotoxin is of service when there is decided hepatic involvement. The functions of the liver may likewise be promoted by the administration of euonymus or iris. Eucalyptus is a good remedy in chronic malaria. Dioscorea villosa, or wild yam, is of undoubted service and may be advantageously used in conjunction with iron, quinin and arsenic. I esteem the chlorate of potassium as of value in this condition by virtue of its favorable influence upon the composition of the blood.

Amyloid Degeneration.—Amyloid disease occasions a peculiar waxy pallor of the skin. Inasmuch as this degeneration is secondary to chronic suppuration, especially of bones, its therapy must be regarded as rather prophylactic than remedial. After deposits have taken place in the liver, spleen or kidneys, the case is not far removed from a fatal issue. The chief causes of the infiltration are scrofulosis, tuberculosis and syphilis. It is essential, therefore, that a correct and early diagnosis be made and every possible measure be taken to prevent or avert the course of chronic suppuration. Antiseptic methods and improved surgical technique have abbreviated the course of many chronic suppurative processes, and we may infer that amyloid degeneration is not now as common as it was a quarter of a century ago. Surgical intervention, together with the use of iodoform, aristol, europhen, alumnol or other disinfectants operate upon the original cause. The constitution needs support by the use of codliver oil, phosphorus, iron, strychnin, hoang-nan, kumyss, alcoholic beverages, etc. If syphilis underlie the degeneration it claims its own appropriate treatment.

Graves' Disease.—The normal pigmentation of the skin is sometimes disturbed in exophthalmic goitre. Most commonly it is accompanied by discolored patches, resembling chloasma. In other instances the opposite condition obtains, and spots devoid of pigment, similar to those of vitiligo, are seen. These patches may receive the local treatment adapted to an abnormal increase or decrease of pigmentation. In treating the constitutional cause we endeavor to moderate the excessive action of the heart and derangement of the nervous system and to improve the quality of the blood. The best means at our command for fulfilling the last requisite are travel, change of scene and climate, cheerful company, a nutritious diet, an out-door life, and the administration of iron and arsenic. In order to strengthen the nervous system and allay cardiac excitability we must rely upon belladonna, digitalis, aconite, strophanthus, veratrum viride, spartein, sulphate, opium, cannabis indica, the bromids and hydrocyanic acid. Galvanism is also of service.

Addison's Disease.—The bronzing of skin and mucous membranes which usually occurs in this affection is generally associated with degenerative changes in the supra-renal capsules. Caseous, cretaceous, fatty, tubercular and cancerous lesions have been found in different cases. Exceptions exist to the general statement, however, for on the one hand, pigmentation may occur without disease of the capsules, and on the other, structural alterations of the adrenals may be unaccompanied by pigmentation of the skin. In some instances of pigmentation the capsules are unaffected but lesions are found in the solar plexus, cœliac plexus or semilunar ganglion.

These facts of pathology leave little room for hope of improvement. The malady steadily progresses to a fatal termination, and therapeutic efforts seldom exert any influence upon its course. It is proper to administer reconstructive medicine together with a nutritious diet. The late Professor Flint mentions a case in which decided improvement, both as regards general symptoms and the bronzing, took place in consequence of general faradization and galvanization of the sympathetic. The amendment continued for two years, when a rapid decline was followed by death within a few weeks.

Leprosy.—Leprous macules vary in color from pale red to dark brown. Exceptionally they are white and shining. The nodules or tubercles are of a deep red or brown tint. In those rare instances when tubercles are absorbed, an atrophied and pigmented spot indicates their former situation. A white or pigmented cicatrix is also left after rupture of the bullæ which precede an outbreak of anesthetic lepra. Patches of discoloration and other anomalies of pigmentation are observed in this disease. Unfortunately, our ability to ameliorate leprosy bears no correspondence to our knowledge of its etiology, pathology and symptomatology. Improvement is sometimes observed from the persistent use of chaulmoogra oil, gynocardic acid, ichthyol, and the external use of gurjun oil or cashew-nut oil, etc.

Syphilis.—Spots resembling chloasma sometimes occur during the first year of syphilitic infection. They are more common in women than in men, appear most frequently upon the face and neck, are smooth to the touch, vary in size and shape, and range in color from dark gray to yellowish brown. Sometimes spots occur having a blanched surface surrounded by a darkened periphery. The so-called "pigmentary syphilide" is not a direct manifestation of syphilis, but is rather the result of the toxic influence of that disease upon the terminal filaments of the cutaneous nerves. The discolored spots are uninfluenced by anti-syphilitic treatment. The deposit is situated principally in the deep strata of the epiderm, though the superficial layer of the derma is, to a less degree, infiltrated.

These pigmentations may be treated in the same manner as chloasma dependent upon other causes.

Heart Disease.—A pallor is the result of the anemia which develops in the course of chronic heart disease, especially fatty heart and stenosis of the mitral or aortic valves. Our efforts in these cases must be directed to keeping up the nutrition of the cardiac muscle by means of iron, strychnin, kola nut, potassium chlorate, etc., together with fresh air and nutritious diet. The habits must be regulated and the action of the heart influenced, according to the circumstances of the case, by digitalis, caffein, strophanthus, etc.

Morbus Cæruleus.—Cyanosis depends upon malformation of the heart, great vessels or lungs. The color varies from a duskiness to purple or almost black. It is not always the same, but is deepened by physical exercise and mental excitement. The blood is deficient in oxygen and contains an excess of carbonic acid. All that can be done in the way of treatment is to maintain bodily heat by warm clothing and warm rooms, to avoid excitement, to restrict the diet to easily digested food and to administer digitalis with the aim of strengthening the heart.

Carcinoma.—The alteration in the composition of the blood induced by cancer is evidenced by the cancerous cachexia, a peculiar icterode and earthy hue of the skin. Of the treatment of cancer I need say no more than that I attribute some importance to the exclusion of meat from the diet for periods of months at a time. No drug has any certain action upon the progress of the disease. Early excision, especially if the growth be superficial, may be followed by complete recovery. A continuous use of corrosive sublimate in alternation with arsenic may retard the course. In tumors unamenable to operation I should be disposed to try the effect of injections of pyoktanin, as practiced by Professor Moorhof. The published results are, indeed, conflicting, but good seems to have been accomplished in some cases.

Melanosis.—Excessive pigmentation occurs in certain cases of both sarcoma and carcinoma. These varieties are always rapidly destructive, and little good can be effected by any mode of treatment.

Argyria.—This dull bluish-gray discoloration is comparatively infrequent at the present day, since we no longer rely upon silver in the treatment of epilepsy and have learned to use it cautiously in locomotor ataxia. It has been sought to remove the color by the use of iodid of potassium but the results have been very unsatisfactory. Alkalin lotions have also entirely failed. Silver is valuable in the management of many chronic nervous maladies, but should never be uninterruptedly administered for a longer period than a month or six weeks. The advent of argyria is indicated by the appearance of a bluish line upon the gums, similar to that produced by lead.

Arsenicism.—The prolonged use of arsenic sometimes gives rise to a yellowish or brownish-yellow discoloration of the skin. The pigmentation may be diffuse or localized to regions already the seat of some cutaneous malady. This discoloration gradually disappears after suspension of the remedy.

Freckles.—In this common lesion the pigmentation is removed by the same local measures which have already been described as efficacious in chloasma. Among the most reliable agents to employ are copper oleate, corrosive sublimate, and salicylic acid.

Striæ atrophicæ.—Atrophic lines and spots, of a glistening, bluish-white color, due to partial or complete rupture of the superficial bundles of connective tissue by extreme distension, the common causes of the stretching of the integument during pregnancy, dropsy and obesity. They may also be produced by flatulence and the presence of abdominal tumors. These lesions are permanent.

Vitiligo.—I have seen no result from any form of internal treatment. The most success attends the effort to remove the darkened margins which surround the white patches. This object may be accomplished by means of galvanism, mercurials, tincture of iodin, soft soap, acetic acid or carbolic acid. It has been attempted to excite pigmentation in the patches by the use of sinapisms, cantharides, capsicum, croton oil, turpentine, ammonia and other irritant substances.

Morphœa.—This disease requires constitutional treatment. The most effective remedies are codliver oil, phosphorus, iron, quinine, arsenic and the chlorid of gold and sodium. The most promising local measures are massage, galvanism, mercurial potash soaps and mercurial lotions. These applications may be used singly or in combination.

Scleroderma.—Hygiene, nutritious food, change of climate, and tonic medicines, such as iron, quinin, strychnin, arsenic and codliver oil are required in this affection. Locally, massage, electricity, warm baths, and stimulating ointment are the most efficient means at our command. The ointment of copper oleate, half a drachm to the ounce of lard, or a mixture of half an ounce of green soap and an ounce of mercurial ointment are the most satisfactory unguents. Electrolysis, in the hands of Brocq, produced decided improvement. As a rule, treatment is but of little avail in scleroderma.

Tinea versicolor.—The yellowish or brownish discoloration of this affection can be removed by the use of a parasiticide of which I give the preference to the oleate of copper, which can either be diluted with oleic acid or made into a 10 or 20 per cent. ointment. This remedy not only destroys the parasite upon the surface but penetrates the interstices of the cells. It is of importance, also, that the surface should be cleansed by means of medicated lotions of borax and thymol, for example, instead of plain water. I am satisfied that the use of water facilitates the development of the fungi. Other agents which may be used are alcohol, naphthol, resorcin, carbolic acid, creolin, and an ointment containing chrysarobin and a 1 per cent. of picrotoxin.

Nævus pigmentosus.—The best treatment for this lesion is excision. The ethylate of sodium, galvanocautery, the actual cautery or the ligature may also be successfully employed.

Xanthoma.—These yellowish patches or tubercles can be removed by excision, cauterization, the application of a 10 per cent. solution of corrosive sublimate in collodion and by electrolysis. As the cause is unknown we have no rational constitutional treatment and can only use systemic remedies in response to the general condition of the health. A course of nitro-muriatic acid, with an occasional blue pill, and followed, after a time, by the administration of arsenic was suggested by Erasmus Wilson. Besnier advises the administration first of phosphorus and subsequently of turpentine.

Xeroderma pigmentosum.—This rare affection begins at an early age. The lesions generally appear upon the face and under the eyes. At first they resemble freckles but, at a later stage dilated capillaries can be discerned upon or between the lesions. Finally the affected spots become more or less atrophied. It is apt to be followed by new formations which, in most instances, are of malignant character. It is advisable to remove the tumors at an early date. No treatment seems to have any influence upon the disease.

A CASE OF AMŒBIC DYSENTERY.

BY FRANKLIN E. MURPHY, M.D.
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Cases of amœbic dysentery, which have been reported in recent years, are of especial interest as evidence is afforded which shows that not only may the so-called tropical dysentery exist at a distance from the tropics, but also that the disease may originate in localities very much farther north than has heretofore been supposed.

The case reported and described by Osler in 1890 called attention to its occurrence in the United States. The report of this case, the first reported in North America, prompted a special study of chronic dysenteries and since that time other cases have been reported.

At the Johns Hopkins Hospital, the most extended study of amœbic dysentery has been made.

Councilman and Lafleur (*Johns Hopkins Hospital Bulletin*, Vol. II, 1891) review the literature of this disease, and analyze a number of cases occurring in Osler's wards, together with a few other cases; in all fifteen.

A case has been demonstrated by Musser in Philadelphia. Stengel, in Philadelphia, has also demonstrated the disease. Other cases I have seen reported, have been by West of Galveston and Harris of Atlanta. Hektoen of Chicago, reports the case of a man who contracted the disease in Texas.

The history of the following case is given as determining the existence of the disease in this part of the country, and as a case having its origin here:

R. H., age 30; tailor, native of Russia, has been in the United States ten years. Six years in New York; four years in Kansas City. Family history excellent; has never at any time in his remembrance been sick in bed. In this four years residence in Kansas City, he has never been away from the city. Patient first seen Oct. 11, 1893.

About June 1, 1893, patient was attacked with diarrhœa which he attributed to indigestible food taken. This continued for some days when he noticed the stools were blood tinged. He was treated by a physician and improved. Relapse after relapse occurred, each relapse greater in severity than the preceding. At one time the number of stools passed in the twenty-four hours was fifteen to twenty.

He went to a hospital and under treatment became much better. When he left the hospital he was having about three semi-solid passages in the twenty-four hours. Since that time he has been growing steadily worse until at the present time and for the past week has been having thirty to forty stools in the twenty-four hours. The stools are very offensive and he suffers more at night.

The shop at which he works is supplied with water from a shallow well. At his home, city water is used.

Patient is greatly emaciated and anemic; skin of a sallow earthy color, dry and harsh; tongue flabby and slightly coated. Temperature 99½, pulse 90, respiration 22. Examination of chest negative; no enlargement of the liver could be made out. Abdomen soft and very tender to pressure in epigastrium, and in the area corresponding to the splenic flexure of the colon. The stools were watery, brownish in color, contained much mucus and were alkalin in reaction. At times they contained blood-tinged gelatinous masses.

On microscopic examination were found blood corpuscles, pus cells, epithelium, crystals of triple phosphate and amœbæ in active motion.

The amœbæ correspond to descriptions given. They were five to eight times the diameter of a red corpuscle and in the active amœba a division into ectosarc and endosarc could be clearly made out. The granular interior contained microörganisms and some contained red corpuscles. In one very active amœba five red corpuscles were counted. Larger or smaller vacuoles were present in the body of the amœbæ and a change in size of larger vacuoles was detected. The movements were of progression and thrusting out of blunt pseudopodia. In the gelatinous masses found in the stools were at times present, shreds of a material lighter in color, in which the greater number of the organisms were found. In feces brought a distance of several squares, through the cold, no movement in the amœbæ could be detected. On slightly warming the slide the movements were induced. I had several opportunities of examining the feces immediately after being passed. In these were found the most actively moving amœbæ. Slowly moving amœbæ would be stimulated to more active motion on gently warming the slide.

Among the amœbæ in motion were found bodies a little larger than white corpuscles. They were motionless, granular, contained a nucleus and were highly refractive. These bodies, I think, correspond to those described by Losch and thought by him to be spores.

In the treatment of this case, rest was enjoined and the usual dietetic treatment instituted. High, rectal injections of dilute solutions of quinin limited the number of stools and the amœbæ were decreased in number. The best results were obtained from large enemata of water acidulated with nitric acid, the internal use of salol and Dover's powder and tonic doses of quinin.

A sufficient length of time not having elapsed, I am not justified in pronouncing a cure in this case. The general condition of the man is good. He is gaining flesh, and is at work. From this, I am encouraged to think there will be no return of the symptoms.

WHAT THE GENERAL PRACTITIONER SHOULD KNOW ABOUT DISEASES OF THE EYE.

BY W. A. FISHER, M.D.
CHICAGO.

Yesterday I noticed an article in the *American Practitioner and News* with the above title, written by a professor of diseases of the eye in a medical school, and read before a State medical society. His ideas were so foreign to mine and so different from most of the teachings of the present day, that I am prompted to write this article.

It is conceded by most of the teachers of medicine to-day that the recent graduate should know more of diseases of the eye than most physicians now practicing their professions as regular practitioners. It is injurious to the doctor, the specialist and the patient that he does not know more. The patient often suffers by not being referred to the specialist in time, simply because the doctor does not make a diagnosis and patients are often sent to the specialist, or drift into his hands when it is too late for any one to be of service to them. As a rule the student has no examination on the eye, or so little that he gives it little or no attention. If he was compelled to know some things that would be of practical benefit to him he would learn these the same as he does other things that are required. The student is supposed to know how to use the microscope to a limited extent and it is highly proper that he should. He puts in a good many hours on work that is not as useful to him in many ways as the use of the ophthalmoscope, when one-half that time spent in use of this valuable instrument in a practical way would be of much more importance to him in his every-day work.

The article that inspired this one, cautions the doctor against glaucoma, advises its early diagnosis and prays him to send it to the specialist. This is good advice, and I think all will agree with him. But the same article advises the doctor not to attempt the use of the ophthalmoscope for several reasons; among them, it will not pay, the instrument costs too much, the time for learning the use of it will be too long and he can not keep in practice. He is also advised not to fit glasses. In answer to the first one, we might ask what will pay better? The cost of the instrument is trivial; the best, or one of the best ophthalmoscopes on the market, the one I and many others use, costs $10. The time necessary for learning is comparatively short, and if he once learns how can he forget it? The writer of the article alluded to also says the doctor should not attempt to fit glasses. He surely does not advise the doctor to refrain from fitting glasses because it will not pay. If it were not for the specialist's refractive work his income would be seriously contracted. It is a matter of very great importance to diagnose glaucoma early, but if he is barred from the use of the ophthalmoscope, how can we expect him to make an early diagnosis? The doctor does not want to send a case to the specialist for operation, and have him returned with a pair of glasses and a complete cure. Then how can we expect him to refer his cases of glaucoma until he knows he has glaucoma; and barring the ophthalmoscope he would be seriously handicapped in an early diagnosis. Any doctor with ordinary intelligence should be able to diagnose glaucoma, with the aid of the ophthalmoscope, in less than a dozen hours in a practical way, and if he can do that in such short time with the instrument costing $10, I consider his time well spent; and when he can do that much, he can do more. Unless he can use the ophthalmoscope he will be at a loss to tell much, if anything, about diseases of the eye. If he can diagnose glaucoma with the aid of the ophthalmoscope, he can diagnose atrophy of the optic nerve, and how valuable it will be to the physician to be able to diagnose glaucoma and optic atrophy in the early stages. It will certainly be a great help to his patients who chance to have these dreaded diseases. It is not much to the doctor's credit to diagnose glaucoma and optic atrophy when the patient is blind, only to recommend him to some asylum for the blind. The time to make a diagnosis of either of these diseases, to be of service to the patient, is in the early stages; to demonstrate this, I will mention a case sent to me for consultation by a former student, Dr. Shinn, of Chenoa, Ill:

Mr. B.——, age 58, retired farmer, consulted Dr. S.—— about October 1, 1892. Diagnosis, beginning optic atrophy of both eyes. Mr B. has been an excessive drinker and smoker; advised to stop both; he partially quit. Dr. S.—— referred him to me Oct. 10, 1892, as he thought with another opinion he might have better control over his patient. R. E. V. = 20-40; L. E. V. = 20-60 +. Diagnosis, optic atrophy. Not only advised total abstinence, but told him if he did not abstain he would certainly be blind. This he seemed to appreciate. Dr. S. put him on strychnia hypodermics. A letter from Dr. S. Jan. 1, 1893, says: "Patient is a total abstainer." He is not able to give exact results as Mr. B. is away for a short time, but he is no worse.

Dr. Shinn made the diagnosis and realized the importance of early abstinence from alcohol and tobacco, and sent him to me to have the diagnosis confirmed and the patient impressed with the importance of early treatment. This patient has had the benefit of the profession, for his diagnosis was made when he complained to his family physician. Dr. S. recognized the worth of the microscope and ophthalmoscope; came here last summer and learned to use them. He has certainly made it pay if he never gets another chance, and whatever benefit the patient may receive he will owe to Dr. S. How much credit should he receive if he had made the diagnosis when his patient was blind?

(Dr. S. has received $25 for his trouble in this case and says he has had more than that much satisfaction; and while he don't consider himself an expert with the ophthalmoscope, he could not get along without it in a general practice.)

The doctor ought to know enough about the microscope to diagnosticate troubles he might find by examining urinary deposits, etc., at least; he can learn the use of the ophthalmoscope just as easy and in as short a time. The doctor should know how to use the ophthalmoscope to aid him in spinal affections, particularly tabes dorsalis, locomotor ataxia. Last week a doctor was referred to me by an optician to fit his wife with a pair of glasses, he failing to get any improvement in her vision. I found she had atrophy of both optic nerves. Upon further examination found she had tabes dorsalis. We often find atrophy when the ataxic symptoms are slight or absent. Albuminuric retinitis often gives us such a distinct picture that from it, alone, a diagnosis is often made.

I will not attempt to say what eyes the doctor should treat; it depends upon his diagnostic ability, and if he can not use the ophthalmoscope he will not make many early diagnoses of diseases of the fundus, and if he does not have the diagnosis, treatment is out of the question. I would not advise a

physician to use a drug in a single case in which he has not made a satisfactory diagnosis; but if he can make a diagnosis and has some good text-book on ophthalmology, he can often find good treatment for his patient. Diagnosis first always, then treatment. I will report a case of glaucoma where the ophthalmoscope was not used:

Mr. K., age 64; first taken with severe pain in eyes and loss of vision four months ago. The doctor ordered hot applications; the attack passed off in a few days; returned with severe pain one week later—same treatment. This treatment was kept up with medicine internally until I saw him about four months after first attack, when I told him there was nothing to do for him, that promised anything, but an operation, and that did not promise much. He was astonished, for he had never had an intimation of an operation. He consented to the operation, which was done next morning; was relieved from pain, but no improvement in vision.

I do not say all cases of glaucoma would have useful vision with an early operation, nor do I say this one would, but early diagnosis in glaucoma and optic atrophy is the only chance the patient has, and for such cases, if for no other reason, why should the doctor ignore or be barred from using the ophthalmoscope?

Primary glaucoma is a common disease, constituting about 1 per cent. of all cases of eye disease, and the general practitioner sees many of the cases early. Many cases are unfortunately sent to the ophthalmologist too late for any benefit because of an improper diagnosis in the beginning. Inflammatory glaucoma is often confounded with iritis and irido-cyclitis, and treated with atropin, which is contraindicated in glaucoma. Cases of glaucoma simplex which present no external symptoms are often mistaken for beginning cataract, and put off to get ripe until iridectomy is too late.

I saw a patient in the hospital to-day, with senile cataract of both eyes, who spent one year in a poor-house and was sent to the blind asylum, where he remained four months. He was resigned to his fate, learning to make brooms as other blind people do, when he was found by an oculist and sent to the hospital for an operation. He has good perception and good projection, and I have every reason to believe he will be reading a newspaper by the time this is in print. Then why should the doctor ignore the ophthalmoscope?

Now for the fitting of glasses. From a specialist's standpoint, the doctor might be barred from fitting glasses, and I believe with the surgeon that cases of laparotomy should be done by the surgeon; but there are some cases of laparotomy that must be done by the doctor or not done at all, "and the doctor must do something." Some patients must have glasses prescribed by the doctor or not prescribed at all, and if he is looking for the financial gain, to say nothing about the good he does his patient, he will find it quite successful work. If he makes a mistake and gives the wrong glasses he has not done an irreparable damage, but can make another effort and change the glasses, and if he finds he can do no good he will have done no harm. I will report my first dozen cases I fitted with glasses when I was practicing general medicine:

Case 1.—Annie R., age 16; symptoms, headache and blurred vision; could not read or sew but a few minutes when everything would blur and run together; if she persisted she would have severe headache.

L. E. V. = 20-20; R. E. V. = 20-20; no improvement with glasses ordered.

R. Atropin sulph gr. iv.
Aq. dist ℥i.

M. Sig. Gtts. ii in each eye four times a day for three days. L. E. V. = 20-80, with + 0.25 ⊂, with + 1.25c 180 = 20-20. R. E. V. = 20-20.

Ordered above for continuous work; result, complete relief from all headache; can read and sew as long as she wants to; no blurred vision.

Case 2.—Ethel McK., age 17; nearly constant headache; had to go to bed two or three times a week with sick headache. R. E. V. = 20-20, with +0.50 = 20-20; L. E. V. = 20-20, with + 0.50 = 20-20.

Ordered atropin as in Case 1. R. E. V. = 20-120, with + 1.50 = 20-20; L. E. V. = 20-120, with + 1.50 = 20-20.

Ordered above for continuous wear; result, relief from all headache. She did not think the glasses helped her looks and left them off one night to go to a spelling match. Sick headache returned; she tried it several times with the same result and found she could not get along without them.

Case 3.—J. N. K., age 39; sick headache so often and had tried so many things he thought it was natural, and would take a dose of morphia and sleep it off. R. E. V. = 20-20, accepts no glass; L. E. V. = 20-20, accepts no glass.

Ordered atropin as above. R. E. V. = 20-40, with + 1. = 20-20; L. E. V. = 20-40, with + 1. = 20-20.

Ordered above for continuous work; they seemed to help him for awhile, but soon laid them aside.

Case 4.—Mrs. H. M. F., age 27; watering and burning sensation in eyes. R. E. V. = 20-20, accepts no glass; L. E. V. = 20-20, accepts no glass.

Ordered atropin as above. R. E. V. = 20-80, with + 1.50 = 20-20; L. E. V. = 20-80, with + 1.50 = 20-20.

Ordered above for constant use; could not wear them; changed to + 1. each; no benefit.

Case 5.—Eliza C., age 17; constant headache. Others, as well as myself, had treated her at different times with temporary benefit.

R. E. V. = 20-20, with + 0.25 = 20-20; L. E. V. = 20-20, with + 0.25 = 20-20.

Ordered atropin as above. R. E. V. = 20-60, with + 1.25 = 20-20; L. E. V. = 20-60, with + 1.25 = 20-20.

Ordered above for constant use; headache all disappeared.

Case 6.—Hattie H., age 10. Chorea for several years; others, as well as myself, having treated her with varying success.

R. E. V. = 20-20, accepts no glass; L. E. V. = 20-20, accepts no glass.

Ordered atropin as above for one week.

R. E. V. = 20-60, with + 1.25 = 20-20; L. E. V. = 20-80, with + 1.25 ⊂ with + 0.25 c 65 = 20-20.

Ordered above for continuous wear. Medicine stopped to see what glasses would do; result better than when taking medicine; so much improved the parents thought she needed no more medicine. Two years later all nervous symptoms had disappeared and she is well.

Case 7.—Mrs. J. R., age 30. Eyes have been failing for the past year; can not see to do close work; headache when attempting to do such work.

R. E. V. = 20-20, accepts no glass; L. E. V. = 20-20, accepts no glass.

Ordered atropin as above for three days.

R. E. V. = 20-80, with + 1.50 = 20-20; L. E. V. = 20-60, with + 1. = 20-20.

Ordered above for constant use; result perfect; says she could not do without them.

Case 8.—Mrs. J. D. C., age 26; headache and blurred vision.

R. E. V. = 20-20, accepts no glass; L. E. V. = 20-20; accepts no glass. Ordered atropin as above for three days.

R. E. V. = 20-50, with + 1. = 20-20; L. E. V. = 20-50, with + 1. = 20-20.

Ordered above for constant use; result perfect; could not get along without them. Ordered a duplicate, so would not be without glasses if they should break.

Case 9.—Thos. F., age 19. Medical student. While taking his first course of lectures he was troubled with headaches; about Christmas they were so severe he consulted one of the professors, and he advised him to go home, fearing typhoid fever. After being home for a few days his headaches disappeared and he felt all right. As I was beginning to be an eye specialist, I attributed his trouble to his eyes.

R. E. V. = 20-20, with + 0.50 = 20-20; L. E. V. = 20-20, with + 0.50 = 20-20.

Ordered atropin as above for three days.

R. E. V. = 20-120, with + 1.75 ⊂ with + 0.50 c 100 = 20-20; L. E. V. = 20-120, with + 1.75 ⊂ with + 0.25 c 90 = 20-20.

Ordered above for constant wear. He returned to school and has had no more trouble; has graduated and is now wearing same glasses; could not get along without them.

Case 10.—Mr. G. F. F. age 25. Farmer. Eyes water and burn when reading in the evening.

R. E. V. = 20-20; accepts no glass; L. E. V. = 20-20 accepts no glass.

Ordered atropin as above for three days. R. E. V. = 20-40, with + 0.50 = 20-20; L. E. V. = 20-40, with + 0.50 = 20-20.

Ordered above for constant use and to my surprise they gave perfect satisfaction; he also had duplicate made after he had broken them so he would always have a pair.

Case 11.—Maud G., age 18; blepharitis marginalis both eyes.

R. E. V. = 20-20, accepts no glass; L. E. V. = 20-20, accepts no glass.

Ordered atropin as above for three days.

R. E. V. = 20-60, with + 1. = 20-20; L. E. V. = 20-80, with + 1. ⊃ with + 0.50 c 90 = 20-20.

Ordered above for constant wear; result, complete recovery. I had treated her many times with temporary benefit with yellow oxid of mercury ointment.

Case 12.—Annie S., age 3 years. Converging squint alternating for one year. Ordered atropin same strength as above three times a day for one week; fitted her by retinoscopy; examined in four weeks; result, perfect when glasses are on; converging when glasses are off.

Case 3.—Was a case of muscular asthenopia and he might have been relieved had he been in more competent hands, but while I did him no good, I did him no harm.

Case 4.—Received no benefit. I do not think I could benefit her any now if I were to try again. She did not like the looks of the glasses and that may have had something to do with the result; at least, I did not benefit her any.

I had a patient in my clinic, Illinois Charity Eye and Ear Infirmary, not long since, suffering from headaches. She was relieved by glasses, but she had a divergence. She was operated upon for convergence by a surgeon not long since. Had she been fitted with glasses in first place she might have saved herself two operations, the one the surgeon did and the advancement to correct it.

Operations for squint should not be attempted by the doctor unless he can correct errors of refraction.

WAS IT SYPHILIS?

BY S. F. ROGERS, M.D.
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This question could in all fairness be asked, after a careful analysis of the subject, particularly the evidence presented, in the very able paper, read last June before the Section on Surgery and Anatomy at the forty-fourth annual meeting of the AMERICAN MEDICAL ASSOCIATION, bearing the title, "The Antiquity of Syphilis, and Moses as a Health Officer," by Dr. J. T. Jelks of Hot Springs, Ark. In this paper the Doctor has evidently touched the keynote of discussion; and without doubt, has been the means of turning many thinking men in a direction hitherto not sought, for clinical evidence in the diagnosis of disease. I think it quite worthy the profession to turn aside for a moment from our text-books, and consider some of the leading points in the arguments presented by Dr. Jelks, from a Scriptural standpoint. However, it will be our aim (as the reader will observe), in the treatment of the subject, to have it suggestive, rather than exhaustive; to render full justice to every argument and quotation presented by Dr. Jelks, would swell this paper to a volume of no small dimension.

The reader will observe the necessity of first carefully perusing Dr. Jelks' paper, and then, with the open Bible, study with us the evidence presented; not forgetting the fact, however, that—for a purpose—the Doctor has quoted from the writings of Dr. Buret, who carefully gathered all his *Scriptural* evidence from the Latin version of the Hebrew text (edition of 1715, found in the National Library at Paris). Let me state for the benefit of the reader, this Latin version is an obscure volume—the very location teaches that—an edition known to a few; used by Dr. Buret, however, to prove his arguments. His purpose, as you will very readily see, could not be met, had our more modern or common versions been consulted. The great difference will be plainly seen, by comparison of the quotations, which will account for the remark by Dr. Buret: "We show our preference for the Latin version." (1715). (Why?) It will be unnecessary to remark, that, granting the preference to either the Latin or the more common versions, the evidence is very hypothetical in the former, and much more so in the latter. With our knowledge of Hebrew history, it would not be arrogance to suppose that syphilis did prevail to some extent, and was a disease then as now, much to be dreaded.

We are not, however, justified in asserting that syphilis was prevalent among the prominent Bible characters. A great deal of question hovers over such terms as plague, pestilence, etc., words used in the Scripture many times, without any definite meaning, i. e., specific name; thus we are not at fault if we do not know just what the plague was. The declaration shows a visitation on the people, of divine judgmeuts. However, there are many instances given (I think about one-half), where the nature of the plague and pestilence are fully defined. The ten plagues which visited Egypt during the captivity; as also the leprosy. This latter is amply elucidated in Leviticus, thirteenth chapter. I would ask the reader to carefully peruse this chapter throughout, and see if he does not see in it more of the laws and tokens given to enable the priests to correctly establish the differential diagnosis between leprosy and a prevailing, yet harmless skin disease, than he does of any symptom accompanying syphilis.

It will be well to remember also, that this chapter is referred to by Dr. Buret in his endeavor to prove secondary and tertiary syphilis. As before remarked, Scriptural writers have in many instances given us but a vague idea of what many plagues were. See in this connection Num. 16: 46. Here a plague is spoken of as begun, also the same chapter (fiftieth verse), the same plague was stayed. Num. 11: 33 records a like instance. Not to over-tax our readers farther, we will close this line of thought with this fact; that plagues were administered in various ways, not necessarily in the form of sickness or bodily infirmity. (See plagues of Egypt also, Deut. 28: 59, 60, 61.) These verses in Deuteronomy might be accepted as the key to the term, plague, by enabling us to assimilate our minds to the circumstances and conditions of the people living at that age, and upon whom the plagues rested.

Let us bear in mind the fact, that medical men are not *entirely* exempt from all weaknesses of the flesh; one of which is a great tendency on the part of human discoverers to plainly see what they are seeking for; particularly a "diagnosis." It has been said the "seekers after a miracle will accept anything rather than be disappointed." It is not ours to say such is the case with either Dr. Jelks or Buret whom the former quotes. We observe, however, objects can be presented to the vision in varied hues, according to the color of the light cast upon them; rendering many times the true pigment quite obscure.

In the case before us, Dr. Jelks accepts the diag-

nosis of syphilis among the Hebrews, made by Dr. Buret, who "shows a preference," for the obscure Scriptural light before alluded to. We are free to confess, the Doctor's object *could* be gained by the aid of such a light reflected upon the science of etiology—with less strain upon the imagination than any other. When Scripture is called upon to prove, not only the antiquity of syphilis, but any other reasonable doctrine, men are quite apt to grasp at the old and sacrilegious adage with a great deal of vehemence. True, there are some rather strong passages quoted to prove such doctrines.

We recognize in the subject before us, a possibility of producing some which could be used as a fulcrum, upon which to place the strong lever of scientific research, viz.: the twenty-fifth chapter of Numbers. In this, if there be any, is the strong hold of the syphilitic argument, and yet the writer would feel safe in saying there is not a physician at the present day who would dare to diagnose so grave a disease as the one in question with so little clinical evidence.

The plague here spoken of *might* have been syphilis. Evidence is lacking to warrant a too decisive opinion in either direction. However, we do claim the evidence is greatly wanting to prove this disease, in the persons presented by Dr. Buret, and from whom Dr. Jelks quotes. Space in this JOURNAL will not permit a too lengthy discussion of every detail; therefore we will cast some glances at Scripture along the narratives in which Sarai, the wife of Abram, and David the king of Israel occupy a prominent position. Sarai is mentioned by Dr. Buret as being the infective agent in the household of Pharaoh. (See narrative in Gen. chapter xii to end.) We here see that Sarai's beauty was the passport of admission. At the same time we must not lose sight of the existing custom among Egyptian rulers: Gen. 12: 15. This action of Abram was the result of his best judgment, founded on a knowledge of this custom; and to save his life these methods were resorted to. Abram explains his situation and feelings in a similar peril. (Gen. 20: 11.) "I said, surely the fear of God is not in this place, and they will slay me for my wife's sake." This also applies to their condition while with Pharaoh, vividly marking the character of that ruler, whose unbridled lust would not stop at murder to gratify its passions.

When the offended Deity troubles Pharaoh for his sin, he lays the blame to Abram for leading him astray by this device. Right at this point the question presents; could Sarai be afflicted with syphilis, and Abram have no knowledge of the same? Again, if such was her condition, would not Abram have presented the fact to Pharaoh, as the strongest possible argument against prevailing custom or passions? Would a syphilitic subject be so extremely comely as to attract the attention of the king? Have we any just reason to presume, that both Abram and Sarai were ignorant of the fearful consequences accompanying syphilis? Not in the least. This could not possibly have been the true situation.

Note also the time of their marriage relations. Sarai's barrenness, yet in possession of great beauty; so many years a syphilitic subject, in a land where therapeutic measures were simply rudimentary, if known at all. Again, please consider the intervening time between the admission of Sarai into Pharaoh's household, and the visitation of the plague mentioned. Was it sufficient for the true nature of syphilitic poison to manifest itself among so many? correctly considering the stages of incubation, primary lesion, etc.! We have reason to suppose—if this were the case—the word, wife, would have been supplemented by the word, syphilis, or its equivalent Hebrew term, to finish the interrogation of Pharaoh to Abram, when Sarai was returned to him: "Why didst thou not tell me that she was" (syphilitic)?

Can we presume for a moment this disease was not known among so licentious a people as the Egyptians? Let me ask you to turn to Gen. 17: 1 to 6. Here we find Abram, at ninety-nine years, covenanting with the Almighty (verse 4); here we notice a change in name occurs (verse 5); also a change in name for Sarai (verse 15); the promise continues, viz.: "She shall become a mother of nations." This occurs prior to the sojourn at Gerar; also (to continue the narrative) we see Sarah, "old and well stricken in years, and it ceased to be with Sarah after the manner of women." (Gen. 18: 11). At this time we recognize Sarah as having passed the menopause, and to this the passage refers; and to this Sarah herself refers, when she laughed at the announcement. In this condition she is found by Abimelech the king, as before alluded to. (See Gen. 20: 2.)

Now it would be quite reasonable to ask Dr. Harmonic of Paris—to whom Dr. Jelks refers—what causes the barrenness in Sarah at this time, syphilis or menopause? Our modern Scripture (Gen. 18: 11) says, "and it ceased to be with Sarah after the manner of women." In this statement we recognize the menopause, at which time, (according to the quotation by Dr. Jelks from Dr. Harmonic's "Monograph on Venereal Diseases among the Hebrews," the Doctor in alluding to Sarah says: "It is not irrational to suppose that syphilis was concerned in this sterility. It disappeared with age in Sarah, who became pregnant late; which is good proof that her sterility was not due to organic causes; and, outside of syphilis, we can not see any other disease of genital origin, which would correspond with the foregoing facts.") We see by this quotation that the disease "disappeared." Granting the Doctor's statement correct, we would ask how Sarah could convey the disease to Abimelech, after all the foregoing changes mentioned had taken place? All of which did occur, prior to her sojourn at Gerar. And yet, notwithstanding all this, the Doctor charges Sarah with the crime of imparting syphilis to a man whom the Scriptures declare she had no connection with, nor ever saw, prior to the period of menopause; at which time, according to the Doctor's own statement, the disease (if she ever had it) had disappeared. It will be well to state, before leaving this part of our subject, the penalty in the case of Abimelech is more definite than in the similar incident with Pharaoh, the term, plague, being used without a specific definition; while in this latter case the plague is well defined (see Gen. 20: 18): "For the Lord had fast closed up all the wombs of the house of Abimelech, because of Sarah, Abraham's wife."

The writer already feels like asking forgiveness for so much time and space already taken, and will briefly consider the part taken in this by Israel's king. That David was a great sinner, as also a great repenter can not be denied. Yet according to our common versions of Scripture we fail to find evidence that he was a syphilitic subject. Dr. Jelks quotes Dr. Buret in his paper as authority that he was. To

prove the argument, the Latin version (1715) is again "proffered." The statement is advanced that David contracted syphilis from Uriah's wife, (see narrative chap. xii. Kings). The reader will remember that this Latin version does not give the same division of its contents into books and chapters, as our common version, which *we* prefer; and we ask your attention to II. Samuel, chap. xii. In this we recognize the blackest chapter in the life of David. Much more space is given in the Bible to this one crime then to many of his virtuous achievements. The object in this will be seen by the Bible scholar as obvious; a line of thought which, were we to follow would lead us farther from the subject now in hand; and we will but glance at it from this direction, viz.: the simple fact that this was a great sin against God and Uriah, does not establish the fact that Bathsheba had syphilis. Again, the child dying does not prove the same. While the twenty-fourth verse, tells us that, "David comforted her and went in unto her, and she bare a son, and called his name Solomon, and the Lord loved him."

The reader will very readily see the time here mentioned is remarkably short for Bathsheba and David—both pronounced syphilitics—to recover sufficiently to bring forth so healthy an offspring as Solomon. If the first was a case of congenital syphilis, what can we look for in the second? Our best judgments in this case would hesitate before pronouncing either of them syphilitic. Stopping just to glance at the lamentations referred to by the Doctor, we would ask the reader to consider the following, (these are all the quotations contained in the Scriptures, wherein the word, bones, is mentioned) and see if there are any syphilitic bones to be discovered among them: Ps. 6:2; 22:14; 31:10; 32:3; 35:10; 38:3; 42:10; 102; 3:5. Particular attention is asked to the prophetic psalms, the twenty-second having been quoted by the Doctor, which is conceded by our most biased Bible scholars to contain no allusion whatsoever to David, but is a grand prophetic description of the sufferings of Christ, whom none would declare to be syphilitic.

The reader will see many words occurring in the Latin (1715) so preferred by the Doctor, that do not occur in any place in our common versions. For instance, the words, cure and mocked, do not appear in the Psalms. As for the words, opprobrium, healthy, ulcer, or ulcers, they are not in the Bible, i.e., our common version. The careful student, looking more for Scriptural facts than a diagnosis of syphilis, will plainly see the Psalms, especially the prophetic, are speaking so beautifully and often in poetic metaphor of the coming Christ, and not the syphilitic symptoms of which David the king, is supposed to be the direct sufferer. Proof of this will call our attention to the thirty-eighth Psalm as a sample of what they contain, regarding the punishments by disease inflicted upon David, as mentioned by Dr. Buret. I would ask the reader to consider, with this Psalm, in order to better define our argument, what the punishment was: See Ps. 6:1; Deut. 32:23; II. Sam. 16:12; Ps. 31:10; 40:12). By this, we are more enlightened regarding the use of such terms as arrows, bones, loins, etc. The word, loins, being considered by all Bible scholars as being the seat of strength; a weakened or exhausted condition therefore calls forth groans, etc. (See Rom. 8:26).

The reader of Dr. Jelks' paper will notice great emphasis is laid on such symptoms as are recorded in the seventh verse of the thirty-eighth Psalm. This is one of the very strongest arguments that David was syphilitic: "For my loins are filled with a loathsome disease: and there is no soundness in my flesh." See also, second verse of same Psalm: "For thine arrows stick fast in me, and thy hand presseth me sore." These have been previously alluded to and commented on. The word, tongue, is found only in the following Psalms: (Ps. 22:15; 35:28; 39:1,3; 45:1; 51:14; 66:17; 119; 172; 137:6; 139:2). The reader of these will see at a glance there is no reference whatsoever to a disease of any kind. The worship of Baal-peor, as quoted by the Doctor will, I think, receive the indorsement of all Bible students, as the narrative seems clearly to show that this form (and they were many) of Baal worship was connected with licentious rites. The bloody health officer, Moses, however, did not slay (kill by the steel) twenty-four thousand. Here another great difference may be seen between the two versions: Verse nine of this twenty-fifth chapter of Numbers reads: "Those that died in the plague (what plague, syphilis or ?) were twenty and four thousand." However, you will see in I. Cor. 10:8, only twenty-three thousand perished from pestilence. By this, we must remember Moses includes the thousand *only* who died by the execution of the judges. In other words, Moses only caused to be killed, one thousand.

Dr. Buret's Chinese history will permit of no question by the writer—neither the historic skulls and tibiæ excavated from the caves and dolmens of France, the tombs of the Incas, or mounds of the United States; in these every physician will agree, having any knowledge whatever of syphilis and its lasting results.

To the medical profession, the writer would say: This has been written in reply to those arguments presented by the Doctor, regarding the persons mentioned; not defending the great wrongs, which were many (especially David's), but as the old saying reads: "Give the Devil his due." After a careful study of the subject the writer does not dispute the existence of syphilis among the Hebrews, and every other people that ever existed, since the foundation of the earth. But we think our common versions *will not bear us out*, in pronouncing the disease upon either of the prominent Bible characters mentioned by Drs. Jelks or Buret. A glance at Bible history will convince the reader, why these Latin versions (and they are many) are not pronounced to-day as correct versions, particularly the version of 1715.

MIGRATION OF SYPHILIS FROM EAST ASIA INTO AMERICA BY WAY OF THE BEHRING SEA.

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In the October issue of the *Sei-I-Kwai Medical Journal* re-appear two articles of mine, both on pre-Columbian syphilis, in which I endeavor to show a possible relation between East Asia and pre-Columbian America.

The antiquity of syphilis in Japan and China is admitted by all Japanese students. Waké and Tamba, who both belong as far back as the seventh

century, mention this disease. The authors of the Dai-do-rui-shiu-ho[1] refer to a medicine used against it by Sukunahiko, the Esculapius of Japan, who lived in the time of Jimmu Tennō (660 B. C.) In China, syphilis was certainly known in the Chu dynasty 1122 B. C. to 314 B. C. From China the disease is supposed to have come to Japan, in the migratory way, landing first at some harbor in the Hijen district, it may have been Nagasaki. Hence, the newcomer spread in all directions over Japan.

China itself seems to have imported syphilis from the south, as it has received smallpox from the north. Both these facts are affirmed by very hoary authorities; they call syphilis the demon of the south, and smallpox the demon of the north. They have no doubt but that the first of these monsters originated in heat and moisture, the southern elements, and that the other was born from cold and frost, the elements of the north.

If I observe here that smallpox penetrated first into northern Japan, being introduced from Tartary, the reader, remembering what I said before, that syphilis first settled in Hijen, will be struck by the fact that the same thing happened here as in China: syphilis from the south, smallpox from the north. We may presume, therefore, that there was some reason for the belief of these ancient writers, that syphilis arose in heat and moisture, and smallpox in cold and frost; besides, it is but fair to consider that these writers were 3,000 years nearer to the origin of both plagues than we are.

Let us see whether the same manner of introduction which we have found in China and Japan, is also that of American syphilis.

Syphilis is admitted by Prof. Brinton to have existed in America when Columbus landed. Yet this author will not see any connection between ancient Americans and East Asiatics; in fact, he denies it positively. He is inclined to think that the disease existed independently in America and in Europe, and that Columbus, therefore, could not have introduced it from Europe to America. Now, if syphilis existed in America, that is the now Spanish America, before the arrival of Columbus, it either originated in the south, in moisture and heat, to speak with the Chinese, for nowhere but in the south have we any evidence of its presence, or it was brought over, say from China or Japan. This happened, if at all, by way of migration, for commerce there was none. We hear, indeed, of a drifting of Chinese junks to ancient Peru and Ecuador; of course, this may be only a myth. But the fact that the Aztecs of Mexico, and the Incas of Peru, the most ancient American races, came from the north, is not mythical. If they came from the north, say from the Behring Sea, it is reasonable to believe that they crossed from the nearest point of Eastern Asia.

Mr. Farnsworth, recently, in *Science*, speaks of the carvings and designs of the Alaskans and Vancouver Indians as being Japanese in appearance. He also believes that at some remote period, some people from Japan had drifted into these regions, and left there traces of the arts of the mother country. It seemed to him that some Indian traditions clearly point that way. "In looking over the collections in the Exposition at Chicago," says Mr. Farnsworth, "it occurred to me to verify these facts. In the Anthropological Building was a large collection of 'totem poles,' carved implements, and drawn figures from Alaska, also from California, Mexico, Central America and Peru, as well as from other parts of the Americas. In many places Japan was largely represented.

"There is a most striking difference between the arts of the Western coast and the interior of America. They have something of the grotesqueness of Japan, but not much other likeness. They are akin to those of ancient Mexico, and would indicate that the arts and the people of the Western coast were of like origin; that the 'totems' and other figures of Alaska and Vancouver are survivals of the arts of Central America and ancient Mexico."

Now, if a Japanese settlement was formed in Alaska, syphilis must have existed in it, and if the Alaskans and Vancouver Indians were directly connected with Central America and Mexico, the syphilis of these two countries from which we derive our first knowledge of American syphilis, had a northern origin.

Judge Wickersham of Tacoma, Washington, thus speaks in *Science*, Dec. 8, 1893, under the title, "Pottery on Puget Sound:" "That the reader may not be misled by the above headline, I hasten to say that there never was any aboriginal pottery made either on the Columbia River, Puget Sound or in the regions northward to Alaska. Baskets of such strength, firmness and texture were made, however, that the absence of pottery was not a hardship upon the Indians, for they carried water in baskets, and even boiled food in them by the use of hot rocks constantly dropped in the water. But what lesson, if any, can the ethnologist learn from the absence of pottery on this Northwest coast?

"Let us first look at the character of the civilization existing here prior to the advent of the white man, and compare it with that of other localities—say San Francisco Bay, but a few hundred miles farther south on the same shore. The Indians of Oregon, Washington, British Columbia and Alaska made and constantly used the finest canoes in the world, capable of holding fifty or sixty men. They fearlessly pursued the whale on the Pacific Ocean far out of sight of land; and fastening their harpoons to the monster, by the use of inflated bladders they caused him to float, and after his death he was towed by a line of great canoes to the shore, where, landing the huge carcass, his captors feasted in truly Indian style. But a few hundred miles away the Indians of San Francisco Bay rode on a raft or bundle of reeds! The conclusion follows irresistibly that a different aboriginal civilization existed from the Columbia River northward to Alaska than that on San Francisco Bay. From a careful examination of the archæological remains it seems quite certain that the lines connecting the middle type of civilization of the Puget Sound region with other American civilizations lay—one up the Columbia and across to the Ohio region, and the other by way of the Snake River, Great Salt Lake and the Pueblo region, and connecting with the Mexican country. But in each of these regions—in Ohio and Mexico—we find pottery in abundance, but none in the Puget Sound basin. This can not be on account of lack of material, for the finest potter's clay exists in great beds throughout this region on the surface, and many potteries now work it. What is the conclusion,

[1] A work composed 806–809 A. D.

then? It is that the high civilization of the Northwest coast did not come either from the East or South!

"This middle type of civilization on Puget Sound made splendidly carved war canoes; the finest basket work in America; featherwork like the Aztecs; metates like those of Moqui; woven blankets equal to the Navajo; worshiped the sun like the Mexican, and made stone gods equal in carving to those of Central America; as carvers of wood they have no equals in America; they were artisans skilled in carving, weaving and painting; they built permanent homes of great posts and cedar boards, exactly like the Mongolian tribes of Asia—exactly like the Japanese; their beds were arranged on each side of the house on platforms in the true Mongolian style; their language yet preserves the identical tongue spoken by the Apache and other southern Athapascans; many pure Aztec words linger north of Puget Sound—and yet they made no pottery!

"No nation ever lost the art of pottery-making. The art never was known to the people of this northwest country; though they are cousins to the Algonquins and Aztecs, and brothers to the Apaches, yet they had not the art possessed by these people of making vessels from clay. Not a trace of the potter's work can be found in the Columbia River or Puget Sound regions. Although these people are of kin, yet in this particular they are as distant as the poles. It follows that the Athapascans of Mexico learned the potter's trade after they left the early home of their kinsmen on Puget Sound; it also follows that the Apache and kindred tribes were migrants from the North, and it is true that the Algonquin was not a potter until after he reached the Mississippi Valley.

"It seems to me that one certain result follows from the known facts, viz.: That the Athapascan tribes of Mexico, and possibly the Aztecs, migrated to Mexico from the Puget Sound region—for if our Athapascans came to the North from Mexico and settled in the Puget Sound basin, why did they not bring that most characteristic manufacture, pottery, with them? I take it that the conclusion must be conceded that the migration was southward, and not by San Francisco Bay, either, but via Great Salt Lake to Mexico.

"Humboldt, Prescott and other eminent authorities place Aztlan, the ancient Aztec hiving place, in the Puget Sound region, and certainly the absence of pottery here is a strong additional fact in support of their statements. If, now, it be conceded that the hiving place of the Aztecs, Apaches and other southern Athapascans was on Puget Sound, may it not also be granted that this is some further proof of the Asiatic origin of the same tribes?"

If the conclusions of Judge Wickersham are true, they directly connect the Ohio mound-builders and the Aztecs with the northwestern settlement I have referred to above, and therefore the earliest traces of syphilis in America, which we find in the bones of Ohio and Tennessee mound-builders and of ancient Mexicans, have also an East Asiatic origin.

This becomes still more probable, if we consider the extreme of antiquity of syphilis in Eastern Asia. An autochthonous syphilis in America, which we should have to admit, if we accept Dr. Brinton's assertion that there is no connection between East Asiatics and Americans, commends itself to us as little as the autochthonous syphilis and smallpox of the Chinese.

The route from Behring Sea seems to me the only satisfactory solution.

SELECTIONS.

Experiments with Intra-Venous Injections of Solutions of Sodium Chlorid in Cholera Asiatica.—In a paper read before the Dorpat Medical Society, Dr. Karl Dehio gives the results of numerous experiments pursued by himself and his colleague, Dr. Graubner, in the treatment of Asiatic cholera. These experiments consisted in the intra-venous injection of warm salt solutions in the later stages of cholera. Dr. Dehio considers the hypodermic method of injecting, as recommended by Samuel and Cantani twenty years ago, of no value whatever, as it is not only painful to the patient, but the solution is not as quickly absorbed as the serious condition of the case would necessitate. Dr. Dehio states that he uses a process similar to that employed by Ziemssen in his well-known operation of blood transfusion. A sharp, hollow needle about three times the size of an ordinary hypodermic needle is introduced through the skin into a large subcutaneous vein, to which is connected the rubber tube of an Esmarch irrigator, which has previously been filled with a warm, sterilized salt solution. A vein is selected in the forearm near the elbow-joint or on the posterior aspect of the leg. The introduction of the needle is usually difficult, owing to the very slight distension of the vein, but this was overcome by compressing it over the seat of the intended puncture, and by a stroking motion of the hand from below, the vein becomes more prominent. By preventing the overlying skin slipping, the vein could be easily pierced. Between the needle and rubber tubing is fastened a glass connection or tube of about 5 cm. in length by which, besides furnishing a convenient handle, the presence of air in the tube could be at once detected, and prevented from entering the needle. The temperature of the injected fluid was kept at from 37 to 39 degrees C., and was easily controlled by a thermometer introduced into the receptacle. As it was necessary to prevent cooling during its passage through the tubing, the fluid in the reservoir was kept some degrees above body temperature. A height of from two to four feet furnished sufficient pressure for the fluid to flow steadily into the vein, and within a half hour as much as one to two liters was introduced.

Antisepsis was thorough, and the needle, apparatus and field of operation were all sterilized before proceeding with the operation. If the needle could not be as quickly introduced as was necessary, a small incision was made in the vein, and after the operation closed with cotton and collodion dressings.

In this manner, Dr. Dehio, in connection with Dr. Graubner, chief physician of the Dorpat Cholera Hospital, performed thirty intra-venous injections in eighteen cholera cases. These experiments were all made on patients in whom there was pronounced collapse and an almost imperceptible radial pulse. All were deeply cyanotic and ice-cold. As much as 2 liters of the saline fluid was injected at one time, but usually 1½ liters was found to be sufficient. The operation was discontinued as soon as the radial pulse could be distinctly felt and counted, and was repeated whenever the cyanosis and pulse indicated approaching collapse.

In nearly all instances the patient seemed to revive somewhat, the pulse became stronger and the heart sounds clearer, and the patient again complained of the muscular cramps from which he had ceased to react. The effect, how-

ever, was only temporary, lasting from three to six hours, the case again relapsing into its former condition.

Dr. Dehio details a number of cases and the different effects of the intra-venous injections, the effect of which were all marked. The pulse became stronger, the eyes which before were deep sunken and glassy, brightened, the patient became conscious of his surroundings and able to answer questions put to him. Of the eighteen cases detailed, only three were saved. In five of these, however, the stage of asphyxia was safely overcome and the direct cause of a change for the better was clearly due to the injections, but death was caused by the sequela.

In conclusion Dr. Dehio says: "One thing is certain, that the injections are infallible to enliven the heart's action and circulation, and as it can not be assumed that these injections of salt solutions had any chemic or therapeutic action on the heart, the actual strengthening of the heart-beat can only be explained by the fact that the injection increases the volume of blood in the vascular system. The blood pressure is increased, and as we know, every elevation of blood pressure necessitates a stronger heart contraction. In so far as the weakness of the circulation in cholera depends on the thickening of the blood, from loss of its serum, we certainly have it in our power to prevent this. Although, notwithstanding the fact that we have succeeded, in only a few cases, in keeping up the heart's action it is proof that the fatal cardiac failure does not alone depend on the diminished volume of blood, but must have other causes. These causes I consider the poisoning of the system by the absorption of the toxin in the bowels. . It is this which injures the heart's automatic action and above all, acts directly on the heart muscle causing the weakness of the circulation.

"In all of the postmortem examinations made there was invariably found a high grade of parenchymatous changes in the heart.

"It is clear that the thinning and increasing of the blood through the saline injections is in itself unable to eliminate the poison; if it were, recovery would be certain. It is not to be expected that these injections contain specific antitoxic action; in order to eliminate the poison we must depend on the action of the kidneys. Our experience has shown that the injections have no effect on the kidneys; the anuria is not relieved by increasing the blood-circulation, a fact which proves that in the kidneys of cholera patients we have not to deal simply with an ischemia, but parenchymatous changes, which like those in the heart muscle, is due to the toxic poisoning.

"Although we have in these intra-venous injections efficient means to overcome the cardiac weakness, the main point is not reached any nearer than in the old hypodermic method.

"*Where the poisoning of the system is not severe enough to destroy life in itself*, and where heart failure has not become irreparable, *then* the injections are able to save life. In the majority of cases, however, the conditions are not so favorable. We have noticed in *postmortems*, that the universal dryness throughout the body, (as in the serous and mucous membranes, et cetera) is not found where these injections have been used. The fact that the injections are less effective when undertaken later in the disease, is due to the higher degree of poisoning present at that time.

"I quite agree with the views and experiences of Rumpf in the recent Hamburg epidemic, with the intra-venous injections. That these saline injections are, with rigid antisepsis entirely safe. Fränkel has already shown. The edema of the lungs was not found more frequently than in the other cholera dead who were not injected.

"Better results might be expected if these intra-venous injections could be combined with diaphoresis. The favorable effects of hot baths in the algid stages of cholera, as well as the great praise given to hydrotherapy might be a point in its favor It is possible that the peripheral circulation could be improved and more fluid absorbed if the patient could be brought into a free perspiration. Then possibly the increased activity of the skin would replace the function of the kidneys and eliminate the toxic products."—Dr. Karl Dehio in the *St. Petersburg Medicinische Wochenschrift*, December, 1893. [Abstracted for the Journal].

BOOK NOTICES.

Hernia: Its Palliative and Radical Treatment in Adults, Children and Infants. By Thos. H. Manley, A.M., M.D., Visiting Surgeon to Harlem Hospital, etc. 8 vo. cl. pp. 231. Philadelphia: Medical Press Co. 1893.

The scope of this work is sufficiently indicated by its title. Its author is a well-known member of the American Medical Association, and an experienced general surgeon.

The author while pessimistic as to the advantages of the operation for the radical cure of hernia, nevertheless gives a resumè of the different operations in vogue, and furnishes a table giving the results of his own operations.

The author's conservatism is shown in the following from page 227, where referring to his own operations:

"At the present time, my purpose, when I herniotomize, is not so much to secure a radical cure as to place the hernia in such a position that it will give no inconvenience, and may be safely controlled by a truss support."

The book is marred by many typographical errors, but notwithstanding is a valuable addition to the literature of the subject.

A Practical Treatise on Nervous Exhaustion. (Neurasthenia); Its Symptoms, Nature, Sequences, Treatment. By Geo. M. Beard, A.M., M.D. Edited with notes and additions by A. D. Rockwell, A.M., M.D. Third edition (enlarged) 8 vo. cl. pp. 262. New York: E. B. Treat. 1894. Price, $2.75.

In this edition of this excellent monograph, Dr. Rockwell has added a short chapter, recapitulating some points in the etiology and pathology of neurasthenia as developed by recent investigation.

The book which everywhere preaches the gospel of temperance, and advocates rest as the panacea, concludes the volume with a quotation from Benedict: "If the Americans would learn from the Germans how to amuse themselves, instead of yawning on holidays, the danger of neurasthenia would be diminished. Whoever has not learned how to play and jest, easily succumbs to mental work."

How to Use the Forceps, with an introductory account of the female pelvis and of the mechanism of delivery. By Henry G. Landis, A.M., M.D. Revised and enlarged by Charles H. Bushong, M.D., Asst. Gynecologist and Pathologist to Demilt Dispensary. Illustrated. New York: E. B. Treat. 1894. Price, $1.75.

The views of the late Prof. Landis upon this important topic were published first in 1876, and in book form in 1880. Dr. Bushong, thinking the monograph contained too much of value to let it be lost to the science of midwifery, has revised the present edition. The book like all Gaul, is divided into three parts. The first is devoted to the mechanism of labor; the second to the forceps, and the third to the application and the recital of typical cases. The book is thorough, well written and trustworthy.

A Clinical Text-book of Medical Diagnosis for Physicians and Students. Based on the most recent methods of examination. By Oswald Vierordt, M.D., Professor of Medicine at the University of Heidelberg, etc. Authorized translation, with additions by Francis H. Stuart, A.M., M.D. Third revised edition, with 178 illustrations, many of which are in colors. Pp. 700. Philadelphia: W. B. Saunders. 1894.

The success of Vierordt's diagnosis has been very great, for we now have a third edition in a very short space of time. The notice of the first translation was published in this Journal, Vol. XVII, 1891, p. 275. It was then greeted as a a welcome arrival, and fully described. In this system of diagnosis, normal anatomy and physiology are the lamps by which the pathologic processes are illuminated. Anatomy is ever kept in the foreground, and its necessary features are frequently brought forward. No scholar can examine

the work without pleasure, and no student can study it without profit. The favorable opinion expressed in respect of the first translation, can be repeated now with the accumulated interest the lapse of time causes us to greet the reappearance of an old favorite.

Transactions of the American Association of Obstetricians and Gynecologists. Vol. VI. Philadelphia: Wm. J. Dornan. 1894.

This volume contains the proceedings and the papers read at the annual meeting of the Society for the year 1893.

These papers have for the most part been published as a part of the current medical literature of the year.

The book is beautifully printed and handsomely illustrated, and like every other work performed by the accomplished Secretary, Dr. Wm. Warren Potter of Buffalo, is well done.

Braithwaite's Retrospect of Medicine. Vol. CVIII, July to December, 1893. Issued January, 1894. Pp. 412. London: Simpkin, Marshall, Hamilton, Kent & Co.

This well-known periodical, established more than half a century ago, lies on our table and contains the usual condensation of the original articles that have appeared during the preceding six months, in the coterie of excellent journals from which the *Retrospect* quotes, and considering the limited sources of its supply, it has really done a great deal toward establishing the truth of its assertion that it contains a "retrospective view of every discovery and practical improvement in the medical sciences." This rather broad statement would seem to require that the sources of supply be somewhat enlarged. Continental journals are only quoted at second-hand, and only six journals in America published on the eastern fringe of the continent are quoted—those on the fimbriated extremity, so to speak.

The Diseases of Personality. By TH. RIBOT, Professor of Comparative and Experimental Psychology in the College de France. Authorized translation. Paper. Pp. 157. Chicago: The Open Court Publishing Co. 1894. Price 25 cents.

The book treats of organic and emotional disorders; disorders of the intellect and dissolution of personality. The author seeks to prove that "the organism and the brain as its highest representation, constitute the real personality, containing in itself all that we have been, and the possibilities of all that we shall be.

"The complete individual character is inscribed there with all its active and passive aptitudes, sympathies and antipathies; its genius, talents, or stupidity; its virtues, vices, torpor or activity. Of all these, what emerges and actually reaches consciousness is only a small item compared with what remains buried below albeit still active. Conscious personality is always but a feeble portion of physical personality."

NECROLOGY.

W. W. Waugh, M.D. of Faribault, Minn., January 8, aged 47.

William Clark Collins, M.D., a veteran of the war with a brilliant record died at Bucksport, Me.

Samuel W. Duff, M.D., at Salem, Ind., January 13, age 53, of apoplexy. He was graduated at Miami Medical College, in 1878.

Engene Tisler, M.D. died recently at Falkenstein, Germany. He was Director-at-large in the Board of Freeholders, served in the Franco-German war, and was 44 years old. For several years he resided at Baltimore, from whence he went to Newark, N. J., where he had much influence among his countrymen. He went abroad for the benefit of his health.

Joseph Hobbins, M.D., died at his home in Madison, Wis., January 24. He was a member of the Royal College of Surgeons, London; Fellow of the Geological Society of England, and Corresponding Member of the Royal Horticultural Society of England. He was born Dec. 28, 1816, in Wednesburg, Staffordshire, England, and was educated in his native country. In 1854 he settled in Madison, where he has lived ever since. He organized the medical department of the State University, and was elected a Professor in 1856. He was a member of Madison's first City Council. He was President of the State Horticultural Society for five years, and by his untiring efforts gained the title of "Father of Horticulture in the Northwest." He was surgeon-in-charge at Camp Randall during the war. His first wife died in 1870, and in 1872 he was married in Baltimore to the youngest daughter of the late Louis McLane of Delaware. The wife and four children survive. A daughter is the wife of Robert P. Porter, Chief of the Census Bureau.

Herbert Judd, M.D., died at Galesburg, Ill., Jan. 10, 1894, of apoplexy, aged 50 years. He was born in Franklin, N. Y., when after a common school course, he went through all the grades at the Franklin and Delaware Literary Institute. He then began the study of medicine with Dr. Albert E. Sullard, remaining with him for two years; then he went to Albany, N. Y., and studied two years with Drs. Freeman and Craig, during which period he attended the Albany Medical College, from which he graduated in 1867. In the spring of 1868 he began the practice of medicine at Galesburg, and in May, 1872, was married to Mary S. Slater, whose death in November, 1892, was a severe blow to him. For many years he occupied a prominent position in the profession, and took a great interest in the medical organizations with which he was connected. He was, for several years Secretary of the Military Tract Medical Association; a member of the Illinois State Medical Society, and also of the AMERICAN MEDICAL ASSOCIATION, to all of which he contributed papers of value mainly upon matters pertaining to railroad surgery. He was for several years Surgeon of the C. B. & Q. Railroad Company, but at the time of his death was Surgeon of the A. T. & S. F. Railroad Company.

Professionally he was strong, and took great delight in exposing fraud. In this, however, he was not always politic and as a result became involved in unnecessary litigation. With all his idiosyncrasies his impulses were right and kind. The writer last saw him in June, 1893, and then noted that he was both physically and mentally breaking. He leaves three sons and many friends to mourn his death.

Hon. James Cecil Phillippo, M.D., L.R.C.S., Edin., of Kingston Jamaica, died recently in his sixty-third year. He was the son of the Rev. James Mursell Phillippo, who, in 1825, at the age of 25, was appointed by the Baptist Missionary Society for service in Spanish Town. He was a graduate of the University of Edinburgh. On returning to Jamaica he began to practice, and in 1856 was appointed Physician to the Middlesex City Gaol. He rapidly made his way in his profession, and was very popular, from the urbanity of his manners not less than from his care and patience as a medical attendant.

In 1860 he was made a Justice of the Peace for the parish of St. Catherine, and in 1863 became a member of the Board of Visitors to the Public Hospital, Kingston, and of the Central Board of Health in 1873. He was President of the Medical Council in Jamaica, and was the first President of the Jamaica Branch of the British Medical Association, and to him, in conjunction with Mr. Gayleard, is due the formation of this, the first Colonial branch of the Association. He was reëlected President in 1885, which office he held until December, 1888. There are now fifty-six members of the Jamaica branch, and it meets regularly for the discussion of scientific and other questions.

Dr. Phillippo was appointed a member of the Commission to inquire into the condition of the juvenile population in 1876, and in 1889 he became a member of the Privy Council of Jamaica. He took a leading part as delegate from the British Colonies at the recent Pan-American Medical Congress.—*British Medical Journal.*

The announcement of his death will be received with sincere regret by the many friends he made during his recent visit to this country, and especially those who came in contact with him during the Congress. He was a good speaker, with a hearty, pleasing manner, and of commanding presence.

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MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues and subscription for THE JOURNAL. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above amount the weekly JOURNAL of the Association will be forwarded regularly.

All members of the Association should send their Annual Dues to the Treasurer, RICHARD J. DUNGLISON, M.D., Lock Box 1274, Philadelphia, Pa.

SATURDAY, FEBRUARY 3, 1894.

SUPERFLUOUS SPECTACLES.

A recent discussion in the New York Academy of Medicine gave evidence of a healthy reaction against the one-sidedness which has of late years been noticeable in American ophthalmological literature on the subject of asthenopic complaints. DR. TH. R. POOLEY related his experience with asthenopia not dependent upon errors of refraction and insufficiencies of the ocular muscles, and his views seemed to receive general indorsement.

Germany has not inaptly been called the land of spectacles. But the reason which has led to their extensive employment in that country, viz.: the great frequency of myopia, fortunately does not apply with us to the same extent. Yet it has become the practice of many of our oculists to advise glasses for weak eyes at a rate which would soon lead to their use on nearly as large a scale as in German cities. Is this sound practice?

Of all facts in medicine none are better founded than the knowledge that even moderate degrees of far-sightedness or astigmatism lead in many persons to discomfort in the use of the eyes and often to headaches and other nervous disturbances. The basis for the rational prescription of convex glasses and cylinders is hence as positive as the results are gratifying.

But does every optic defect need correction and is every case of painful vision curable by glasses?

No ophthalmologist can overlook the fact that many persons can tolerate moderate optic defects and some even high degrees of ametropia without ever suffering therefrom. This fact has been well brought out by a statistic published over a year ago by DR. ROOSA. Among 100 persons with normal eyesight and *who had never suffered from asthenopia*, he found only 9 emmetropic. Forty-five persons had hypermetropia of about one dioptry, thirty-nine of about two dioptries and seven over two dioptries. Of the total number only twenty-five had no astigmatism measurable with the ophthalmometer, seven had astigmatism of 0.25 to 1 D in one eye only, thirteen had 0.25, twenty-three had 0.5, two had 0.75, twenty-five had 1 D and four had more than one dioptry of astigmatism in both eyes.

On inquiring into the general health of patients complaining of eye-strain and its consequences it becomes apparent that the amount of optic imperfection which can be tolerated without distressing sensations depends on the vigor of the system at large and especially the condition of the nervous system. It is not rare that patients call for correction of moderate far-sightedness or astigmatism, accept the glasses with satisfaction for the time, but lay them aside as unnecessary after some improvement of their general condition.

Since errors of refraction are stationary conditions, (except progressive myopia which is foreign to this topic) there is hence no object in correcting them, unless they cause some annoyance, be it by poor sight or in the form of discomfort or headache or distress of any kind. If, however, any discomfort referable to the eyes is present, what is the lowest amount of ametropia which can be considered as the cause of the eye-strain?

It is the general experience that a hypermetropia of 0.75 D or any degree of hypermetropia uncorrected to the extent of 0.75 D can cause distress in many persons. But that a hypermetropic eye can appreciate a correction of half a dioptry or less will not be admitted by most observers. There is more diversity of opinion as to the amount of astigmatism which may require correction. While again 0.75 D represents the lowest cylindrical lens which is ordinarily of benefit, cases do occur beyond doubt in which half a dioptry of astigmatism leads to discomfort or headaches.

Such cases, however, are exceptional and occur as a rule only when the general health is below par. It is true that a cylinder of 0.25 D is not only employed but even highly recommended by a few prominent oculists, but they have as yet furnished no proof that such lenses benefit their patients. The majority of oculists have learned from their own experience, as well as from the failures of the champions of the 0.25 D cylinder, that such weak glasses are merely of mythical value.

The history of therapeutics furnishes so many instances of remedial measures highly praised by their originators, endorsed for a short time by their followers, but soon discarded as useless, that we may well decline to believe in the efficacy of 0.25 D. cylinders until convincing proofs are furnished. It must not be forgotten that the accuracy in measuring refraction

has its limits. Whenever the patient's vision is not markedly improved by correction, two equally competent observers can easily disagree up to ¼ or even ½ D. of the astigmatism present.

From the short report of DR. POOLEY'S paper and its discussion it does not appear whether the fact was brought out that asthenopia may be of ocular origin independent of the refraction. There are cases of slight blepharitis and mild chronic conjunctivitis often associated with lachrymal obstruction, in which the asthenopic complaints do not depend on ametropia, even if a low degree of it be present, while the patients can be cured by proper attention to the lids or lachrymal ducts. In another small per cent. of patients with asthenopia not curable by glasses, the cause can be found in some intra-nasal lesion and the discomfort removed by appropriate nasal treatment. It is not to the credit of the profession if such patients are ordered to wear useless and often expensive glasses.

DR. POOLEY further emphasized that discomfort in the use of the eyes may be due to a general neurasthenic condition and to derangements in distant organs, the teeth, kidneys and uterus. More stress might have been laid on the relation of digestive disturbances to asthenopia, as observations in practice frequently show not merely a coincidence of the two, but also decided improvement in the eyes when the stomach and bowels receive due care. It is a matter of doubt whether asthenopic complaints can logically be considered as reflex disturbances due to gastric or uterine derangements, or whether they should not more properly be viewed as a part of the neurasthenic condition to which chronic disease of the viscera can lead.

At any rate, the discussion in the New York Academy will be productive of good if it teaches oculists that the eye is one of the organs of the general system, and that in all of those cases where asthenopia is not clearly the result of a demonstrable optic imperfection, its cause must be sought by an inquiry into the patient's habits and general health.

SMALLPOX.

Outbreaks of smallpox were reported during the past week at a number of places in the country. Chicago and New York seem to be the main points of infection. The former city has almost daily for the last two weeks had its smallpox sensation, in patients riding in street cars and entering crowded public buildings, and finding an infected nest in the Ironside lodging building, where there are now quarantined about one hundred inmates, but nothing like the outbreak that has occurred in the Charity Hospital, Blackwell's Island, New York. The Warden and ten patients suffering from the disease were removed to North Brother Island, and on January 18 the Hospital was placed under rigid quarantine, and the inmates, about one thousand in number, vaccinated. A woman having smallpox was removed from the Florence Mission. The inmates of the Mission are also under quarantine and have been vaccinated.

All these cases came from a single case in which the nature of the disease was not recognized until after death. The patient was taken from a lodging house to Governeur Hospital, where the case was diagnosed as a malignant blood disease. On December 26 he was taken to Bellevue Hospital, and the next day was transferred to the Charity Hospital, and placed in the ward where skin diseases are treated, and on January 2 died. His body was removed to the morgue, where it was kept nearly a week to give friends an opportunity to claim it. Then it was taken to the Bellevue Medical College for dissection. So obscure was the disease that it was only here that suspicion was excited with regard to its true nature, and the Chief Inspector of the Bureau of Contagious Diseases was notified, and upon investigation pronounced it smallpox. It is asserted that the man had two diseases which seemed to run together. The woman taken from the Florence Mission had been employed to keep the ward clean in which the patient was lying.

CHOLERA.

Cholera still prevails at St. Petersburg, and cases also occur in Belgium. A commission was appointed to investigate the cause of the recrudescence of cholera in St. Petersburg. The commission reports that the fresh outbreak of the disease is not an exceptional occurrence, as exactly similar outbreaks were observed in many parts of Russia toward the end of the epidemic in 1892; that no one particular circumstance or condition can be pointed to as the cause of the recrudescence; and that it can not be ascribed to the increased consumption of dried or salted fish. As the revival of the epidemic followed not long after the commencement of the pre-Christmas fast, when salted fish form the principal article of diet among the orthodox, it was thought that some form of poison had developed in the fish, and that the cases that were set down as choleraic were in reality due to some irritant poison. The commission, however, declares that though many samples of fish have been examined, in none has any poison been found. Many of the cases first thought to be due to irritant poisoning have since been proved to be choleraic by bacteriologic examination of the dejecta. This occurred in a number of cases among the attendants of two orphan institutions in the city. Between December 16 and 20, fifty of the attendants in these institutions were attacked with diarrhea and vomiting, the illness following the consumption by the attendants of salted fish and unboiled water. It was

only after the patients had been removed to the Marie Hospital that the symptoms were found to be due to cholera and not to poisoning as at first supposed.

The disease, however, seems to have altogether disappeared in Germany. There were only six cases of a mild type reported in the German Empire between December 6 and 22, and since the latter date none at all. The *Times'* (London) Berlin correspondent reports that in 1892 there were 19,719 cases of Asiatic cholera in Germany, of which 8,590 died. Between January 1 and March 4, 1893 there were 213 cases and 89 deaths registered, and during the summer there were 569 cases and 288 deaths. In addition to these, there were 92 cases, in which cholera bacilli were discovered in healthy persons who had been infected by intercourse with cholera patients, without, however, suffering any great inconvenience.

THE JOURNAL.

In our issue of January 6 we printed the following table:

July 1, to December 30, 1893.	Journal Am. Medical Association.	N. Y. Medical Record.	N. Y. Medical Journal.	Boston Medical Journal.	Philadelphia Medical News.
Number of Original Articles . .	240	176	158	132	175
Number pages Original Articles	665	334	380	300	397
Total unmber pages	1,024	860	816	660	756

The *New York Medical Record* of January 20, asserts that we gave a wrong impression of the relative size of this JOURNAL; "as there are nearly a hundred and fifty more words to a page on the *Medical Record* this is not a fair presentation of the matter."

We were aware that the *Record* page is a little longer than that of the JOURNAL, but the type differs. Thus: in the issue of the *Record* for January 20, there are 32 pages, and an average of 1,400 words to the page; this gives for that number, a total of 44,800 words of long primer type.

The JOURNAL of the same date had 16 pages of long primer with an average of 1,250 words to the page, making 20,000 words of long primer. There were 16 pages of brevier type (counting the nonpareil as brevier) with 1,720 words to the page, making 27,520 words of brevier, and a total for that issue of 47,520 words or **2,720** words in excess of the number printed in the *Record*.

This is really an under statement, for the JOURNAL usually has from one to two columns of nonpareil type, one-fourth smaller than brevier, which would give a still greater number of words.

If we multiply the number of words in that issue by 26, the number of issues in a volume, it will be seen that on an equal number of pages, the JOURNAL led in amount of matter by **83,720** words, and then if we add one-half the number of pages in excess of those of the *Record* it will be seen that the JOURNAL led for the volume by the enormous number of **329,060** *words!*

We had no intention of emphasizing the fact that the AMERICAN MEDICAL ASSOCIATION, now publishes the largest weekly medical journal in America, beyond letting the friends of the JOURNAL know that they were doing well, but as the *Record* challenged the statement, we were forced to complete it. The table, therefore, as will now be seen was rather an under than an over statement.

We have great and enduring respect for the old publishing house that furnishes the medical profession with so excellent a journal as the *Record*, but the AMERICAN MEDICAL ASSOCIATION is greater than any single firm; the JOURNAL is its property, and it has only fairly started. Just wait!

DENTISTS ARE NOT PRACTITIONERS OF MEDICINE IN MISSOURI.

Dentists are not "practitioners of medicine." So the Supreme Court of Missouri holds, in the case of State v. Fisher, decided Dec. 5, 1893. A statute of that State provides that no person exercising the function of "practitioner of medicine" shall be compelled to serve on any jury. A dentist possessing a diploma, granted him by a reputable dental college, and a city register's certificate, showing the filing of that diploma and the enrollment of his name on the "roll of dental surgeons," steps in, and claims the exemption. But it is denied him.

After an exhaustive consideration of the statutes, to see if they can be given a broader construction, the court becomes somewhat humorous. It says the dentist "evidently feels unsteady on his logical legs," if a sole reliance is to be on the statutory exemptions noted, and so he resorts to the lexicographers, and quotes the definition of "dentist" from the *Century* Dictionary. If he "had delved more deeply into the science of definitions, and had turned another page of the same work, he would have found: 'Chiropodist. One who treats diseases or malformations of the hands or feet; especially a surgeon for the feet, hands and nails; a cutter or extractor of corns and callosities; a corn doctor.' So that if he is exempt from jury duty because, as he says, he 'treats, professionally, diseases of the oral cavity,' so also is his less pretentious professional brother, who with equal scientific skill treats diseases or malformations of the hands or feet, and who is content to be dubbed 'corn doctor.' Certainly, the argument and definition which would support the exemption of the dentist as a 'practitioner of medicine and surgery' would also equally support that of his cognate scientist, albeit of humbler pro-

fessional pretensions. The disposition of persons to magnify and exalt their callings or occupations has become wonderfully prevalent in these latter days."

It is perhaps only fair, after quoting so much of the court's opinion with regard to the dentist—who is also here, by implication, classed with the mechanic who is no longer called a "carpenter," but an "architect and builder;" the solicitor of orders from our retail merchants, who is no longer a "drummer," but a "commercial traveler;" and the loquacious individual who is no longer a "barber," but a "tonsorial artist"—to state that JUSTICE BRACE dissents. He says, among other good things, that while dentistry may have had a humble and comparatively recent origin, it has now become a very important branch of medical science, quoting as his authority, "Address N. S. DAVIS, M.D., to the AMERICAN MEDICAL ASSOCIATION."

SECRECY IMPOSED UPON CONSULTING PHYSICIANS.

The same rule which governs a regular attending physician in any case, with regard to the communication of what he learns in that capacity affecting his patient, applies as well to a consulting physician. Thus, in the case of Morris v. N. Y., O. & W. Ry. Co., decided Dec. 1, 1893, the Supreme Court of New York, general term, holds that what either a regular attending physician or another called in professionally, as consulting physician, says in consultation in the presence of their patient is inadmissible in evidence. Nor will the fact that they do not agree upon the disease, permit the confidential relation between physician and patient to be rendered nugatory. Here the court cites and follows the decision of the New York Court of Appeals, rendered in the case of Renihan v. Dennin, decided some years ago. In that case it was further held to be of no moment that the patient did not himself call or procure the consulting physician's attendance. He was called by the attending physician. To bring him within the regular rule, it was considered sufficient that he attended as a physician upon the patient and thereby obtained his information.

WITHIN THE SCOPE OF A PHYSICIAN'S AUTHORITY.

When it comes time for settlement, the question of whether all the services rendered were within the scope of a physician's authority may be an important one. Thus, in the case of the Succession of Short, decided by the Supreme Court of Louisiana, Dec. 18, 1893, some of the legatees contended that the physician's bill was excessive. Among other things the doctor at different times remained a number of extra hours beyond his professional visits, in order to administer medicine and nourishment to his patient, an old gentleman and a personal friend, who refused to receive them from any other hands than those of his physician. Now, where the patient, being feeble, and in a nervous and delirious state, requires attention entirely unusual, and the services are skilfully and faithfully rendered; where surgical operations are performed, and extra time is devoted by the physician in endeavoring to relieve the patient from his sufferings, which are intense, the court holds that the performance of the operations, and the time, in addition to the regular visits, taken in attending the patient, are within the scope of the physician's authority, if, in his judgment, it is necessary.

A MEDICAL STATESMAN.

DR. GUIDO BACELLI, the Professor of Medicine in the Policlinico of Rome, is sometimes styled "the VIRCHOW of Italy." He has recently been appointed Minister of Public Instruction. He had formerly held the same portfolio from 1881 to 1884. He was late President of the Board of Health for the Kingdom of Italy. He is an eloquent orator, and has been chosen to preside over the International Congress, to be held in Rome, next Easter.

PROFESSOR BACELLI will be remembered as having made the eloquent response, in Latin, to the address of welcome, at the Tenth International Medical Congress. To those who never before heard the Latin language spoken by an Italian, its effect was thrilling beyond expression.

CORRESPONDENCE.

Proposed Revision of the Constitution and By-laws of the American Medical Association.

To the Editor:—As the report of the Committee, in the form of a *revised Constitution and By-laws* for the AMERICAN MEDICAL ASSOCIATION, made at the last annual meeting, is to come before the next annual meeting to be held in San Francisco, June next for final action, it is desirable that its provisions should be considered with candor and thoroughness. In carefully comparing the revised document as presented by the Committee, with the Constitution and By-laws as they now exist, I find but four proposed alterations of sufficient importance to require notice. These four are: 1, the very faulty, ambiguous, and even contradictory style in which the revised instrument is written; 2, the omission of all provision for general addresses except the one from the President; 3, the abolition of the Nominating Committee and the giving of the nomination of general officers and the recommendation of the time and place of the annual meeting to the General Business Committee; and 4, the total abolition of the representative character of the ASSOCIATION; the abolition of all permanent memberships and the limiting of the annual membership solely to the membership of the several State and Territorial medical societies.

In regard to the first of the foregoing specifications it is no exaggeration to say, that every paragraph of the present Constitution is expressed in language so plain, direct and explicit as to be easily understood, and to admit of no ambiguous or doubtful meaning. Let every reader take up a copy of the Constitution as it is, and compare the clear cut and expressive language in which the origin and objects

of the Association are expressed in the introductory preamble and resolution, with the introductory paragraph called "history," proposed by the Committee on Revision as a substitute. The first says the Association is organized "for cultivating and advancing medical knowledge; for elevating the standard of medical education; for promoting the usefulness, honor, and interests of the medical profession; for enlightening and directing public opinion in regard to the duties, responsibilities and requirements of medical men; for exciting and encouraging emulation and concert of action in the profession, and for facilitating and fostering friendly intercourse between those who are engaged in it." The proposed substitute says it is "formulated for the purpose of promoting the *best activity* of a general *medical organization of the profession in North America*." What a contrast! What kind of *activity* is the "best activity?" And what is meant by "a general *medical organization* of the *profession?*" Is it intended for a general organization of the *medical profession* or the general organization of some profession on a medical basis in accordance with physiologic and pathologic laws? And again, by what process can we extend such an organization from the Rio Grand south to the Isthmus and from the Great Lakes to the North Pole? Leaving the initial paragraph, let us briefly as possible compare the language of the present Constitution with that of the proposed substitute in relation to *membership*. The first says: "The members of this institution shall collectively represent and have cognizance of the common interests of the medical profession in every part of the United States; and shall hold their appointment to membership either as delegates from State and local institutions, as members by invitation, as permanent members, or as members by application." The proposed substitute says: "Membership shall be limited to members of the several affiliated State medical societies recognized thereby or represented therein. As membership in these societies is open to all reputable practitioners in each State, the membership in the American Medical Association is open to all reputable physcians in North America." Now, which are "the several affiliated State Medical Societies" mentioned in the first sentence, and how are they *affiliated*; and what is meant by the "recognized *thereby* or represented *therein?*" Do the "thereby" and "therein," refer to recognition by the affiliated State societies or by the American Medical Association?

After long study, I had arrived near to the conclusion that the Revising Committee intended to declare that, "Membership shall be limited to members of such State medical societies as have been heretofore recognized by or represented in the American Medical Association." Such a conclusion, however, only involved me in greater difficulty when I encountered the logic of the next sentence which is in true syllogistic form as follows: "As membership in these societies (meaning of course the affiliated *State* societies) is open to all reputable practitioners in *each State*," therefore, "the membership in the American Medical Association is open to all reputable physicians in *North America*." Or, if we put the several parts of the syllogism in more direct connection they would read thus:

1. "Membership (of the Association) shall be *limited* to members of the several affiliated *State medical societies* recognized thereby or represented therein."

2. "As membership in *these societies* is open to all reputable practitioners in *each State*," therefore

3. "The membership in the American Medical Association is open to all reputable physicians in North America." But why stop at North America? Are there any more "*affiliated State medical* societies in British America, Mexico, Central America and the West Indies, than there are in South America or in the several States of Germany? Are there any petitions on file from the physicians in all the inhabited parts of North America asking for *annexation* to the affiliated State medical societies" of the United States? Or does the Committee on Constitutional Revision intend to take them in *vi et armis?*

While, as has been shown, the first sentence of the section relating to membership positively declares that membership in the Association "*shall be limited to members* of the several *affiliated State medical societies*," yet before we get half way through that section we read: "Any member of a recognized State or *local* medical society may become a member of the Association by presenting," etc.; and a few lines further, we read: "All members of the recognized State or *local* medical societies who are unable to attend the annual meeting may become members of the Association," etc. It is quite as difficult to understand how the membership of an association can be *limited* to members of *State societies*, and at the same time receive members from various *local societies*, as it is to see why the eligibility of reputable physicians to membership in the several State societies of the United States and through them to membership in the American Medical Association, should make all the reputable physicians in North America eligible to membership in the same Association. Still further on in the same section we find the expression: "All State medical societies with their *constituent local societies*," without anything to indicate what is meant by a "constituent local society." It is well known that there is no uniformity in the organization of State and local medical societies throughout the United States. And consequently there is no recognized standard by which to decide what constitutes a recognized or "constituent" local medical society, except as given in the present Constitution, namely, "such county and district medical societies as are recognized by representation in their respective State societies." But this definition is rendered inapplicable by the fact that the Committee on Revision throughout the section on membership takes no recognition of *representation* by delegates or otherwise, but directly abolishes all representation by delegates so far as relates to the American Medical Association. The introductory paragraph called "history," and the section on "membership" from which we have been quoting, constitute nearly all the *original* work of the Committee on Revision, the rest of the revised instrument being nearly all copied from the present Constitution and By-laws. And the ambiguous, indefinite and inconsistent if not positively contradictory language in which they are expressed, should cause their prompt rejection by the Association, if there were no other objections to the work of the Committee.

The second important change in the Constitution and By-laws proposed by the Revising Committee, is the omission of the provision for three general addresses at each annual meeting. Section XIV of the present By-laws reads as follows: "The Association shall annually elect on the nomination of the Nominating Committee, three members of the profession, eminent in some of its departments, to deliver addresses in the general session of the next ensuing annual meeting—one on some topic or topics relating to general medicine, another relating to general surgery, and the third relating to public medicine, including under that head hygiene, sanitation, prophylaxis, education and medical legislation, each of such addresses not to exceed one hour in its delivery." Under the operation of this rule, each annual meeting has been provided with one important, carefully prepared address for each general session, by including the address of the President on the first day; and in no other part of any general session is the audience so large or so attentive as during the hours assigned for the delivery of these addresses. They are the most efficient items on

the program of each general session to enlist the attention of the many general practitioners and hold them in attendance from day to day. These addresses are, with very few exceptions, among the most important papers that fill the Transactions of the ASSOCIATION. Similar general addresses have constituted, certainly, one of the most attractive features of the annual meetings of the British Medical Association throughout its whole history. And the AMERICAN MEDICAL ASSOCIATION, instead of omitting them altogether, as is done in the revised By-laws of the Committee, should only exercise greater care in obeying the letter of the existing By-laws by electing *only* members of the profession actually "*eminent* in some of its departments."

The *third* important change proposed by the Revising Committee is the abolition of the Nominating Committee and the requiring of all nominations of officers and the recommendation of the times and places of the annual meetings to be made by the General Business Committee, which is to consist exclusively of *ex-chairmen* of the several Sections. This identical change was proposed when the amendment of the Constitution creating the General Business Committee was adopted at the meeting in Detroit in 1892, but was stricken out by a decisive vote. It was claimed with much emphasis that the general officers and place of annual meeting for a truly National organization, like the AMERICAN MEDICAL ASSOCIATION, should be nominated by a committee composed of, at least, one member from each State and Territory having members present. On the other hand, the General Business Committee is, or will be hereafter, composed exclusively of ex-chairmen of the Sections, and therefore almost certainly concentrated in a few large cities, instead of representative of the profession of the whole country. This is well illustrated by the fact that of the thirty-six members constituting the General Business Committee at the present time, eight are residents of Philadelphia, five of Chicago, four of Cincinnati, and two of Detroit. And of the twelve present chairmen of Sections, who will become members of the Business Committee at the close of the next annual meeting, one-half are from two cities, namely, three of Philadelphia and three of Chicago. A committee thus constituted may prove practically efficient for the better regulation of the work of the various Sections, and may constitute a convenient and safe body to consider and report upon such questions and topics as may be referred to it by the ASSOCIATION, but it certainly can not be regarded as a direct representative of the profession in all parts of the country. Consequently, if the nomination of the general officers of the ASSOCIATION should be confided to it, as is proposed by the Committee on Revision, it would constitute a long step in the direction of lessening the interest of the great body of general practitioners in the ASSOCIATION and of concentrating all control in the hands of the specialists. Objectionable, however, as are the three foregoing proposed changes in the Constitution and By-laws, they are far less important than the fourth, which is embraced in the section relating to membership. For, whatever may be the faults and inconsistencies of language used in its construction, as I have already pointed out, there is no difficulty in seeing clearly that its adoption would at once destroy the representative character of the ASSOCIATION, and rapidly reduce its National character by placing the control of each annual meeting directly in the hands of the profession of the State in which the meeting is held. It makes no provision for delegates representing State, county or district medical societies, and no conditions for permanent membership. A very careful study of the whole section will show that four conditions are made essential for the acquisition of membership in the ASSOCIATION: 1, the applicant must be a member of some one of the "several affiliated State medical societies recognized thereby or represented therein;" 2, the State society, to be recognized, must have accepted the Code of Ethics of the ASSOCIATION; 3, the applicant must present to the Treasurer of the ASSOCIATION a certificate that he is a member of a recognized State society, in good standing, accompanied by five dollars as the annual membership fee; 4, if he desires to attend or participate in the work of any meeting of the ASSOCIATION, he must present to the Committee of Arrangements, both a certificate of his good standing in his recognized State society and his receipt from the Treasurer of the ASSOCIATION that his dues for the year are paid. And if he fails to comply with the foregoing conditions for one year his name must be stricken from the roll of members. The section also declares that, "no person shall be permitted to take part in any annual meeting until he or she has completed the conditions of membership at that meeting and can exhibit a certificate to this effect from the Committee of Arrangements."

The whole section would have been much more explicit and easily understood if it had simply declared, that the members of all State and Territorial medical societies adopting and upholding the Code of Medical Ethics of the AMERICAN MEDICAL ASSOCIATION shall be eligible to membership in the last named organization; and that any member of such State or Territorial medical societies may at any time become a member of the National organization by sending to the Treasurer a certificate showing that he is a member of his State society in good standing, accompanied by the annual subscription price of the JOURNAL OF THE ASSOCIATION, five dollars, and therefor shall receive the JOURNAL one year; and during the same year may attend and participate in an annual meeting, by presenting his receipt from the Treasurer and an additional certificate of his good standing in his State society to the Committee of Arrangements. If he fails to renew his subscription to the JOURNAL for *one* year his name must be stricken from the roll of members. No thoughtful reader can fail to see that the adoption of the section under consideration, as proposed by the Committee on Revision, would utterly destroy the general representative character of the ASSOCIATION and rapidly reduce the permanency of its membership. The several State and local medical societies no longer appointing delegates with any special or important functions, the attendance from parts more distant from the place of meeting would be less; the interest of the State and local societies in the ASSOCIATION would grow less from year to year, and each annual meeting would be completely under the control of the members living within one hundred miles of the place of meeting, one-half of whom would allow their membership to expire the very next year for non-payment of dues. By thus abolishing the representative character and permanency of membership on the one hand, and the placing of all nominations and business questions in the hands a Business Committee composed exclusively of ex-chairmen of the several sections it would not take five years to convert the AMERICAN MEDICAL ASSOCIATION into as perfect an agregation of specialists and with as limited a basis of membership as is the so-called Congress of American Physicians and Surgeons. While the Committee on Revision make considerable pretension of placing the ASSOCIATION more "*in touch*" with other medical organizations, and of even taking in "all of North America," every important change they propose would actually produce directly the opposite effect as I have shown.

On the other hand, our present Constitution by its liberal provision for *delegates* from State and local medical societies, most effectually encourages the formation and support of such societies in every part of our country; and by limiting the privilege of voting to such *delegates*, it equally estab-

lishes and maintains its own true National representative character, and guards against centralization and local or sectional dominance. By awarding to such delegates the privilege of remaining permanent members and participating in all the doings of the Association except voting, by continuing to pay the annual dues; and by the section on admission of permanent members by *application* without the expense of attending an annual meeting, the door is kept wide open for every member in good standing in the recognized State and local medical societies to make himself or herself a member of the National Association whenever he chooses to do so.

Consequently, the present Constitution and By-laws are more liberal and more in harmony with every legitimate interest of the medical profession in the United States and their representative or delegate feature is far more in accord with the modes of thought and action of all English-speaking people, than is the substitute proposed by the Committee on Revision. Then why not stop wasting valuable time every year in tinkering constitutions and by-laws? Neither the legitimate interests of the Association nor the value of its Journal will ever be advanced by mere constitutional or by-law changes. They can be advanced only by such earnest, thoughtful, persistent work as will bring to every general meeting better addresses; to every Section more original papers and more thorough discussions; and to the Journal more and better material for its pages. More patient scientific research, more complete aggregation of facts and close deductive reasoning, and more care in the preparation of papers, with less desultory talk or office hunting, should be the motto of every friend of the American Medical Association, not only at the coming meeting in San Francisco, but at all the meetings of the future. At least, such are the deliberate sentiments of one who has studied the practical working of medical organizations, and all other interests of the medical profession for nearly sixty years. Yours truly,

Chicago, Jan. 23, 1894. N. S. Davis.

The Income Tax.

To the Editor:—The determination of Congress to adopt the income tax as a source of revenue, calls for some remarks on its application to practitioners of medicine. It is to be noted that there are no exemptions in the bill in favor of certain methods of earning a living, but that all incomes, no matter how created, are lumped together. Justice would seem to require a distinction to be made between certain and permanent incomes and those which are precarious. Some incomes result from investments and require no expenditure of work or money to earn them, on the part of those by whom they are enjoyed. Others are derived through personal services rendered to employers or the public, and perhaps inadequately paid for. Some incomes are not diminished by the temporary illness or absence from duty of their earners, while others are immediately arrested when they are even for an hour off duty. The President may go fishing for a week, and his *per diem* is paid as punctually as if he were at work in his office. But a medical man takes a holiday or occupies a sick bed only by paying a penal fine for the privilege. Nevertheless, the bill treats both incomes alike. The exemption of small incomes from the tax is not unjust, inasmuch as a minimum living income should be exempted, and also because small incomes are generally precarious and earned by personal services. But a medical man's personal service is even more disadvantageous than that of a mechanic working for wages in a factory. The latter is sure of pay for every hour he works; the doctor has all the risk of collecting his dues. Again, if the mechanic falls ill, his wages stop; but, on recovery, he resumes his income as before his illness. The medical man falling ill loses his income during his incapacity, and further loses many patients, who used to treat with him regularly, to some other doctors. He not only suffers loss of a portion of his income for the work that he was unable to do, but breaks up his business to a certain extent also. Hence, the physician is in a worse plight as a payer of income tax than even a mechanic.

The bill, to be just, should make a distinction between precarious and permanent incomes; and a special exemption should be granted medical practitioners on account of the risks that their earnings are subject to, beyond those of any other members of the community. Certainly, in returning an estimate of income a physician should be entitled to deduct so many days for necessary recuperation and illness; he should make another deduction for the difficulty of collecting his fees; which all State laws seem to increase; and he should make a further deduction for the extra cost over lawyers, ministers, office holders, clerks and mechanics which he has to incur in carrying on his business. It is a well-known fact that doctors who seem very prosperous have to expend almost up to the margin of their earnings to keep up their business. This is a subject for the county societies to discuss and, if possible, take action upon.

W. P. Whery, M.D.

Fort Wayne, Ind.

From Dr. Lewis.

Chicago, Jan. 22, 1894.

To the Editor:—Until you published Dr. Howle's answer—which is proper—to my communication on "Crime and Criminals," I hesitated to ask an explanation for the "heading" to my correspondence.

So, now, please state in the next number, that the "heading" to my correspondence was put to it in the Journal office—not by me.

My objection to the Journal heading is, that it is short three words; with these, it would read: "How to Encourage Criminals to Eschew Crime."

As to the answer, I beg leave to ask Dr. Howle to re-read my correspondence, for I am inclined to the opinion that he will find sufficient ground therein to justify his making a new version. This, however, I will leave to him and other readers of your most excellent Journal to determine.

Respectfully, Charles J. Lewis, M.D.

ASSOCIATION NEWS.

Omaha, Jan. 28, 1894.

To the Editor:—Proposed Amendment to Art. II, Sec. 2, Constitution of the Nebraska State Medical Society:

"That any legally qualified practitioner shall be eligible for membership in this Society, whatsoever his source of education, provided that he or she proclaims in writing adherence to no particular dogma or line of practice other than rational medicine."

Will some one kindly answer the following: Is there any reason in Code or Constitution of American Medical Association why the above amendment should not be adopted by the Nebraska State Medical Society? If such is adopted does the Nebraska State Medical Society lose its affiliation with the American Medical Association? This amendment is to be voted on this year.

Respectfully, George Wilkinson,
Sec'y Nebraska State Medical Society.

American Medical Association.—Don't forget about that $5 to be sent to Dr. J. B. Eagleson with your application for

membership in the AMERICAN MEDICAL ASSOCIATION. This is the opportunity of a lifetime for Pacific coast doctors and they must not forget it. To live in this region and not go to San Francisco this year, when you can take in the Midwinter Fair and the AMERICAN MEDICAL ASSOCIATION all at once and with fare the cheapest on record, would not only be a shame, but almost inexcusable. Pay that $5 now. Eagleson, you know, lives in Seattle.—*Medical Sentinel*, Portland, Oregon, January, 1894.

SOCIETY NEWS.

The Queen's County, N. Y., Medical Society met January 30. Papers were read upon "Milk," "Appendicitis," "Infant Feeding," and "Long Island Water Supply."

North Central Illinois Medical Association.—Dr. J. C. Corbus of Mendota, was recently elected President of the North Central Illinois Medical Association, at the session held in Princeton.

The King County (Wash.) Medical Society at its regular annual meeting held at Seattle, Wash., January 22, elected the following officers for the coming year, viz.: President, Dr. W. A. Shannon; Vice-President, Dr. F. S. Palmer; Secretary, Dr. P. W. Willis; Treasurer, Dr. D. A. Mitchell.

Gloucester County, Penn., Medical Society held its annual meeting at Woodbury January 25. The following officers were elected: President, Dr. H. A. Stout of Wenonah; Vice-President, Dr. E. T. Oliphant of Bridgeport; Secretary and Treasurer, Dr. George E. Reading of Woodbury. Drs. S. F. Flick, M. Price and J. N. Rhoades of Philadelphia, were the guests of the Society.

The Annual Meeting of the Fulton County Medical Society, N. Y., was held at Gloversville January 11.

The following officers were elected: President, H. C. Finch; Vice-President, L. J. Dailey; Secretary, A. L. Johnson; Treasurer, J. K. Thorn; Board of Censors, W. C. Wood, J. E. Burdick, Eugene Beach. The afternoon session was devoted to the reading of papers and discussions on interesting topics. The following papers were read: "A Protest against the Excessive Use of Coal Tar Products," by Dr. Wood; "Food," by Dr. M. Helen Cullings. President C. M. Lefler gave an address on "Some Thoughts of a Physician on Modern Surgery." Those present at the meeting were: A. L. Johnson, L. J. Dailey, P. R. Furbeck, Wm. C. Wood, Eugene Beach, C. M. Lefler, I. DeZouche, J. K. Thorn, F. W. Shaffer, F. A. Mead, M. Helen Cullings, of Gloversville; D. S. Orton, Fish House, M. Francis Drury, H. C. Finch, Broadalbin; F. Beebe, John E. Burdick, J. W. Joslin, J. K. Young, of Johnstown.

Capital District Medical Society.—About thirty physicians from the central portion of the State attended the annual meeting of the Capital District Medical Society held at Springfield, Ill., January 18. The following officers were elected for the ensuing year: President, George N. Kreider, Springfield; Vice-Presidents, E. P. Bartlett, Springfield; W. M. Catto, Decatur; and J. W. Hairgrove, Jacksonville; Secretary, B. B. Griffith; Treasurer, E. J. Brown, Decatur; Judicial Council, C. E. Black, G. F. Stericker, L. J. Harvey, W. B. Hostetler and J. Townsend. The remainder of the session was devoted to the program as follows: "Rectal Surgery," J. W. Hairgrove; "Management of Natural Labor," L. A. Malone, discussion led by B. B. Griffith; "Disease of the Bladder and Kidneys," W. K. McLaughlin, discussion led by W. M. Catto; "Prophylaxis of Typhoid Fever," E. P. Bartlett, discussion led by L. J. Harvey; "Report of Three Cases of Graves' Disease," E. J. Brown; "Psychical Influence in the Treatment of Disease," J. S. King. At noon the Society adjourned and partook of a toothsome spread.

Medical Society of the District of Columbia.—Program of the literary exercises of the celebration of the seventy-fifth anniversary of the Medical Society of the District of Columbia, to be held at the National Rifles' Armory Hall, G. Street, between 9th and 10th Streets, N. W., Washington, D. C., Friday, February 16, 1894, beginning at 7:45 o'clock P. M.

Overture. Invocation, Rev. Wm. A. Bartlett, D.D. Address by the President, Samuel C. Busey, M.D., LL.D. Music. Address of Congratulation, Theophilus Parvin, M.D., LL.D., Representative of the College of Physicians of Philadelphia. Music. Address—"History of the Medical Society of the District of Columbia," Wm. W. Johnston, A.M., M.D. Music. Address—"History of the Hospitals of the District of Columbia," J. Ford Thompson, M.D. Music. Address—"History of the Medical Colleges of the District of Columbia," Thomas C. Smith, M.D. Music.

Music by the U. S. Marine Band.

Committee of Arrangements.—Samuel C. Busey, M.D., Chairman; C. H. Stowell, M.D.; H. H. Barker, M.D., Treasurer; S. S. Adams, M.D.; T. E. McArdle, M.D.; G. B. Harrison M.D.; and Geo. C. Ober, M.D., Secretary.

American Electro-Therapeutic Association.

The Third Annual Meeting Held in Chicago, Sept. 12, 13 and 14, 1893.

AUGUSTIN H. GOELET, M.D., President.

(*Continued from page 131*).

METALLIC ELECTROLYSIS.

Case 8.—L. S., 22 years of age; single. Prolapsed and anteverted uterus with subacute metritis; endometritis; endocervicitis; erosion and cystic degeneration. Uterus extremely painful on pressure; canal normal in depth; patulous; profuse muco-purulent discharge. Menstrual habit free, regular, but premature; recurring every three weeks. Duration 5 days. Dysmenorrhea spasmodic, beginning three days before the establishment of the menstrual function. Backache; constant frontal and vertical headache; capricious appetite; neurasthenic symptoms; urethritis; painful micturition.

March 22, 1893. Intra-uterine, fundal and cervical, cupric electrolysis, 6 milliampères, for ten minutes; reversal to loosen the electrode. Application followed by slight colicky pains which lasted for twenty-four hours.

March 24. Reported herself better. Two more applications were made as above on the 24th and 27th. Less pain during and following the applications.

August 16. Patient reported that she had been very well ever since—now nearly five months ago. Dragging pain and backache entirely disappeared; leucorrheal discharge, slight, mucoid, and only once in two weeks. She eats and sleeps well; nutrition better, and she is less depressed. Urethritis entirely cured.

Case 9.—A. B., married; 34 years of age. June 14, 1893. Condition almost identical with that of the preceding patient, save that the uterus was retroverted, and the urethritis was severe. Two intra-uterine applications, fundal and cervical, of cupric electrolysis at intervals of seven days, ten to fifteen milliampères; also applications to the interior of the urethra and to the eroded cervix were made. These were followed by marked improvement in all the symptoms. In this case, as in the other, treatment was followed by slight colicky pains, lasting to a greater or less extent during the subsequent twenty-four hours, and accompanied with abdominal soreness. Ultimate condition not recorded, because she did not return to the clinic after July 28, when she reported herself much better.

Gautier does not refer to the uterine colic which is liable to occur in intra-uterine cupric electrolysis. The following case illustrates very clearly that this condition may follow on such treatment:

Case 10.—A. M., married. Dec. 20, 1893. Intra-mural fibroid; uterine measurement three and one-half inches; developed anteriorly and to the right; endometritis; severe dysmenorrhea. The usual pressure symptoms were present, and were first noticed in 1886. Patient had been treated with intra-uterine negative galvano-chemic cautery at intervals for a year or more. On Dec. 20, 1892, intra-uterine cupric electrolysis, electrode within the cavity of the *body*, thirty milliampères for eight minutes; reversal, fifteen milliampères for five minutes. This was followed by the most intense uterine colic I have ever seen. It was an hour or more before she could leave the office for her home. For three days, there was increased discomfort, but since then, the patient's health has been very much better than for nearly six years.

July 11, 1893. Menstruation accompanied with very little pain; able to attend to all her duties (the active ones of a business woman) with only a little rest on the second day. Before treatment she was obliged to go to bed during the time. She dates her improvement from the cupric treatment.

Case II.—Mrs. P., 36 years of age; married. External and internal hemorrhoids. There was an immense cluster of external hemorrhoids, the largest being the size of a pigeon's egg. A number of smaller ones formed a ring around the anus. The internal ones frequently became strangulated, giving rise to intense pain.

Feb. 25 and 27, 1893. Two mild applications of cupric electrolysis C. S. five milliampères for three minutes were made to the external tumors. March 1. After applying cocain, an application of twenty-five milliampères was made to the internal tumors, and this treatment was repeated on March 3 and April 25. On May 9, she had a perfectly natural movement of the bowels, without pain, the first in years. She continued to improve up to June 6, when she passed from observation.

On September 6 I heard from this patient and she continued perfectly well. There has been no trouble whatever from the hemorrhoids since the last treatment.

DISCUSSION.

Dr. Morton said that the entire subject had been most admirably outlined in the paper. It was seldom that he rose to discuss a subject which he felt more important than this, for, instead of speculating on the action of the current, we could obtain the salts of the metals used in our soluble electrodes. Not only have we got a definite medicine which we can place at the point desired, but we can by means of the cataphoric action of the current drive this medicine deeply into the tissues. It is greatly to the credit of Gautier that he has gathered together the facts scattered through literature, and has built up the system which he calls "interstitial electrolysis." In the speaker's opinion it is better to call this treatment, "metallic electrolysis," for interstitial electrolysis may take place anywhere where there is a continuous current, regardless of whether or not the electrode is metallic. This idea that metals can be dissolved at the positive pole is by no means new. He had found in Butler's book, published in 1887 by the homeopathic firm of Boericke & Tafel, New York, a similar method of treatment. This author goes thoroughly into the subject of zinc electrolysis, and describes distinctly how the needle is changed into chlorid of zinc, and how one obtains the two actions—that of the current, and that of the zinc chlorid formed from the metallic electrode. He makes no reference, however, to gynecologic work. Gautier deserves the credit for developing this department, as well as the entire subject.

Dr. Morton then presented a number of instruments which had been devised and brought into use during the two years in which he had studied this subject.

The first instrument was a piece of flexible copper wire tipped at the end, and having a sliding insulation. It was used for treating the nasal cavity. A current of five to twenty-five milliampères was used, and the oxychlorid of copper thus deposited in the deepest recesses of these passages. A set of copper electrodes were also exhibited, which were devised originally by Dr. Goelet for intra-uterine treatment. The copper uterine sound first employed by Dr. Cleaves was also shown, as was also the "protected electrode," designed for use in a case of ulceration of the rectum. Dr. Morton said that the adhesion of the electrode was probably due to the formation of a soluble albuminate of copper—the soluble salt found, and alluded to in the paper. This adherence of the electrode is particularly marked in urethritis. When he first began to use cupric electrolysis, a patient who claimed to have had gonorrhea for three months presented himself. A current of two to three milliampères was used at first, but on increasing it to five milliampères the instrument was found to be adherent. About four or five minutes were occupied in the gradual withdrawal of the instrument. One year later the patient returned with a fresh attack. He stated that the discharge had entirely disappeared within two or three days after the first application. This second attack was treated in the same way and with the same good result. He had employed cupric electrolysis in a dermoid cyst on the side of the neck, measuring over one inch in diameter. The parts were made numb by electro-cataphoresis and cupric electrolysis performed for about ten minutes with twenty to thirty milliampères. On a previous occasion the cyst had been punctured, the fluid withdrawn, and an attempt made to secure decomposition of a solution of iodid of potassium injected into it, but this was a failure. The result of the second application was that the cyst gradually disappeared, leaving no trace except a tiny needle mark. The patient was unwilling to be cut, and was afraid to take ether.

When a copper bulb is placed against a hemorrhoid, the tumor can be seen to shrink under the electrolytic action.

There is probably no more common slight ailment than hypertrophic or atrophic rhinitis, and the gratifying results obtained from cupric electrolysis seem on this account specially interesting. Usually in three to five weeks, and after six or seven applications, they feel "cured." He was unable to say yet how long this relief would continue. In atrophic rhinitis, the effect of the treatment is: 1, a gradual increase of secretion; 2, disappearance of the scabs; and 3, a greater feeling of comfort in the nose. From a theoretical standpoint it would seem probable that the activity of a number of the glands not yet destroyed is restored by the treatment.

Foul sinuses may be very conveniently treated, as the antiseptic is manufactured as one proceeds.

Dr. Hayd said he had had no practical experience with the subject, but he thought there were certain objections. Just as soon as one magnifies the importance of local applications, one increases the dangers of intra-uterine medication. He had been led to believe that the effects of electricity were due, not so much to the local action of the current, as to the influence on the nerves and lymphatics supplying the part; for, if there were only a local effect, how could we explain the cure of certain conditions by electrolysis, when they had resisted curetting and the application of chlorid of zinc or nitric acid? In the second place, just as soon as the séance is prolonged, in intra-uterine applications particularly, the dangers of the treatment are increased. The mere fact that it is admitted that the electrode adheres to the tissues is in itself a very serious objection, for this adhesion will result in a trauma which will sooner or later prove disastrous. He thought there was a dangerous tendency in the Association to be unduly enthusiastic in the use of local applications, and until he had been assured that these recorded successes had been treated unsuccessfully by the ordinary electric treatment, he could not be convinced of the superiority of metallic electrolysis. The mere fact that a piece of meat may be stained by the copper or zinc did not prove to him that it is because of this deposit the results are obtained.

Dr. Massey said the objection raised by the last speaker regarding the dangers of intra-uterine applications did not apply to the *expert* use of such treatment where it seems to be imperative. He had employed such treatment for months at a time without mischief following.

He had been struck with the fact that in recent literature there had been a sudden reversion in favor of a more general use of the positive pole in electric applications. While our efforts are being directed to the action of the base metals with reference to the active pole, we forget that we have metallic electrolysis every time we use a galvanic current, unless the patient be protected by a very large pad. The clay is probably particularly useful, in that it catches the particles of copper or other metal derived from the plate used with the clay electrode as a conductor. A few years ago he employed iron wire in this connection, thinking that the introduction of the iron into the body would not be harmful; he found the iron disappeared so rapidly that it was impracticable to employ this metal at all.

In a case of prolapsed and ulcerated rectum he found that a current of forty to fifty ma., caused the reduction of the rectum when a carbon positive electrode was used, showing that it was the action of this pole and not of metallic electrolysis.

He had had some experience in atrophic rhinitis. In one case where he used what was supposed to be a 14 karat gold electrode, it was quickly tarnished by a current of six to seven ma. The effects of treatment were, however, very much disguised by the simultaneous application of cocain; this renders the treatment agreeable and probably more efficacious. One such treatment often relieves the sensation of obstruction for many days, and a treatment for six months will destroy the tendency of a patient to constantly "catch cold."

Dr. Gaeen said that this valuable paper contained suggestions of uncertainty. He could not feel that this indiscriminate probing of the uterus is safe. Intra-uterine medication should be guardedly used. Again, while one can regulate the dose of electricity by the meter, he saw no way of regulating the dose of the metallic salt deposited by electrolysis.

He had treated one case of hydrocele occurring in a

gentleman who would not submit to the more usual methods A zinc needle was passed into the sac without withdrawing the fluid, and a current of seven ma. used for about fifteen minutes. On the withdrawal of the needle he was astonished at the large quantity of zinc which had been removed from the needle. The case was, however, promptly cured, and there had been no relapse.

DR. HAYES said that while there is much danger from intra-uterine treatment when employed indiscriminately, in properly selected cases and in the hands of experts it is not as dangerous as the introduction of medicine in any other way. By electrolysis more of the metal is introduced, and so gradually as not to excite the uterine colic ordinarily following other methods of this kind. The dosage is more accurate in fact than the administration of substances by the mouth, for a certain strength of current causes the deposition in the tissues of a certain amount of metal.

The adhesion of the positive pole to the tissues is to a certain extent a trauma, but it is very easy to limit this to the most superficial tissues; indeed the author had explained how the electrode could be liberated without causing injury to the tissues.

The paper also emphasized the activity of substances when in the nascent state. For example, a piece of beef stearin after being in the laboratory for several months has a much higher melting point than a piece freshly manufactured; in other words, the rigidity which it eventually assumes is such that it requires more heat to pull it apart than at first. This illustrates what is meant by the greater activity of substances when in the nascent state; hence it is obvious that this method of treatment has a power peculiar to itself. It also should not be forgotten that by cataphoresis the salt is deposited deeply in the tissues, and hence its vast superiority over such caustics as nitrate of silver. Those who have made a study of gonorrhea know that the reason it is not quickly cured by the usual injections is because the gonococcus penetrates deeply and lives in the submucous tissue. It would seem therefore that in metallic electrolysis we have a very superior method of treating this obstinate disease.

DR. GEHRUNG said that not only is the nascent condition important, but the medicine is carried in so gradually that one portion is swept along by cataphoresis before another particle is presented to the tissues, and so the spaces of the latter are not clogged up by the medicament.

THE PRESIDENT said he had at first called attention to the fact that although Gautier claimed that with cupric electrolysis there was relief from pain, it frequently excited intense uterine colic. For this reason he had looked upon it as dangerous. No harm followed in his cases, however, but the colic prejudiced the patient against the treatment. Further observation convinced him that the colic was due to insufficient drainage, the result of the astringent set free in a narrow cervical canal. He had subsequently made applications to some of these same patients where the uterine colic had been excited, and by previously dilating and keeping the cervical canal patulous, had been able to avoid colic.

He did not use the copper applications so much in endometritis as he had done formerly, as he considered zinc superior. He knew of nothing equal to cupric electrolysis for the control of uterine hemorrhage at the time of the application. Its action is immediate; at most there is not more than a slight dribbling for a few hours after the application. It is by no means necessary to use the excessive current strengths recommended by Gautier; he usually employed twenty to thirty ma. for ten or fifteen minutes, and kept the electrode still, as he found that after turning off the current, if the instrument be carefully revolved on its axis it can be removed without doing violence to the tissues. He knew of nothing which would cure granular degeneration of the cervix so promptly and satisfactorily as zinc electrolysis. In one case after six applications of only ten ma. a very bad granular cervicitis was completely cured. He brushes the electrode over different parts of the surface, not to prevent its sticking, however, as this is not nearly so noticeable with zinc as with copper. He had not employed the iron electrodes referred to by Dr. Massey in cases of uterine hemorrhage.

Another useful application of cupric electrolysis is in fissure of the anus. With a current of five to ten ma. applied with a bare copper electrode for two or three minutes the cure has been prompt and satisfactory. Zinc electrolysis is also useful in promoting healing of the sac left after incision and evacuation of suppurating vulvo-vaginal glands.

Intra-uterine applications are perfectly safe in the hands of the expert gynecologist if perfect cleanliness and free drainage are secured.

He had treated a large keloid on the anterior surface of the thigh by punctures with zinc needles around the margin. Two prominent surgeons had refused to operate. The applications were made once or twice a week, and extended over a period of two months. After two months cessation of treatment there was absolutely no occasion for further treatment and the case was considered cured. It was found that there was less destruction of tissue and the result was better if only five ma. per needle were used, instead of ten, as employed at the beginning.

In one case three punctures with zinc electrodes and a current of ten to twenty ma. caused diminution of a hard uterine fibroid to one-third its former size. Some time before this one puncture had been made with a platinum needle and a current of fifty m. a., but without any result.

DR. CLEAVES, in closing the discussion, said she was very much averse to a great deal of the intra-uterine treatment advocated, as much of it is unnecessary; but in a certain class of cases she was satisfied quicker and more lasting results could be obtained. Nor could metallic electrolysis be objected to on this ground, as the applications were made only once in eight days, and not more than three in a month, while the entire course of treatment was markedly lessened. In cases of persistent cervical degeneration she had had exceptionally good results from zinc electrolysis. In one of the cases reported all the usual measures had proved ineffectual, and yet within a week after the zinc electrolysis there was a perfectly normal condition of the uterine cervix and the patient went on to complete recovery. She doubted very much if it were wise to move the electrode in the uterine cavity. The medicine certainly penetrates deeply. The dosage is more accurate than when administered by mouth, and infinitely more so than when applied by solution or stick, as then most of the application fails to reach the desired point. Gautier's experiments go to prove that no toxic effects are produced by this treatment. She believed there was no need of exceeding thirty ma., and in the case of severe uterine colic reported this was the strength used, and the application was made entirely within the body of the uterus.

She doubted if cocain had anything to do with the relief of the sensation of obstruction in the nose, for this follows very rapidly on cupric electrolysis.

The needles which she presented were the same as used by Gautier, while the electrodes she devised for the treatment of trachoma and granular conjunctivitis.

PUBLIC HEALTH.

A Bill to Establish a Department of Public Health.

The following is the Public Health bill recommended by the Committee of the AMERICAN MEDICAL ASSOCIATION, C. G. Comegys, M.D., Chairman:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1.—That there shall be established a Department of Public Health. There shall be appointed by the President from the medical profession, by, and with the advice and consent of the Senate, a Secretary of Public Health who shall be intrusted with the management of the Department herein established. He shall be paid an annual salary of $8,000.

There shall be appointed by the President, with the approval of the Senate, an Assistant Secretary of Public Health, at an annual salary of $5,000.

The Secretary of Public Health shall, with the approval of the President, provide suitable offices for the Department, and shall employ such assistants and clerks as may be necessary.

SEC. 2.—It shall be the duty of the Secretary of Public Health to obtain through all accessible sources, including State Boards of Health, municipal authorities, and the Surgeon Generals of the Army, Navy and Marine Hospital Service of the United States, weekly reports of the sanitary condition of all ports and places within their territories and departments, and he shall publish weekly abstracts of the information thus obtained and other pertinent matters received by this Department. The said Department also shall, as far as possible, by means of the voluntary coöpe-

ration of State and municipal authorities, of various general and special hospitals, sanitariums, public associations and private persons procure and tabulate statistics of marriage, births (noting those that are illegitimate, and deaths from epidemic, endemic and all other diseases, specifying those of a degenerative character, such as malignant growths, and affections of the nervous, circulatory, respiratory, secretory, digestive and reproductive organs, and from violence, accidents, suicide, murder and data concerning the fruit of consanguineous marriages and the transmissibility of insane, alcoholic, syphilitic, nervous and malignant types of constitution to offspring and to evils of race miscegenation. He shall also procure information relating to climatic and other conditions beneficial to health and especially in reference to the most favorable regions in the United States for the cure or relief of chronic diseases, particularly tubercular consumption. He shall also procure information as to the prevalence and ruinous effects upon the body and mind by intemperance and prostitution. He shall endeavor to ascertain the extent, the origin and classification of insanity in the several States and territories of the country. He shall investigate the state of comfort of the laboring classes in respect to their lodgment, their trades, occupations, the healthfulness of their workshops and the contents of the atmosphere they habitually breathe, and the prevalence of premature degeneration of the nervous and muscular systems by the exactions of piece-work employment.

He shall obtain information as to the soundness of their food and purity of water supply. He shall ascertain the ages at which the children of the poor are put to work and its hindrance to their physical development, and their lack of common school education. He shall seek through the State Boards of Health information of the hygienic state of public school buildings respecting their illumination, ventilation and the presence of noxious elements in the circumnambient air. He shall seek information in regard to the pollution of streams and navigable waters and public and private wells. He shall attempt, through the coöperation of the authorized medical schools in all the States, to promote the most extended and thorough training of students in order to fit them for the responsible duties that devolve upon practitioners of medicine.

Besides the reports of the state of the public health which he shall make from time to time, the Secretary shall make an annual Report to Congress, with such recommendations as he may deem important to the public welfare, and the Report, if ordered printed by Congress, shall be done under the direction of the Department. The necessary printing of the Department shall be done at the Government printing office upon the requisition of the Secretary, in the same manner and subject to the same provisions as that of other printing for the several Departments of the Government.

Sec. 3.—The President is authorized, when requested by the Secretary of Public Health, and when the same can be done without prejudice to the public service, to detail officers from the several departments of the Government for temporary duty, to act under the Department of Public Health to carry out the provisions of this Act, and such officers shall receive no additional compensation except for actual and necessary expenses incurred in the performance of such duties. When a detail of such officers can not be made the Secretary, approved by the President, may employ such experts, and for such time and in such manner as the funds at the disposal of the Department may warrant.

Sec. 4.—That to defray the expenses in carrying out the provisions of this Act, the sum of fifty thousand dollars, or as much thereof as may be necessary, is hereby appropriated to be disbursed with the approval of the President, under the Secretary of said Department.

This Act shall take effect sixty days after its passage, within which time the Secretary and Assistant Secretary may be appointed.

He shall, whenever any epidemic disease is spreading abroad, or in any country which by commercial or other relations may endanger the health of the inhabitants of the United States, have power to call a conference of the Surgeon Generals of the Army, Navy and Marine Hospital Service and the executive officer or officers of the various State boards of health throughout the country, to consider and advise with him in regard to the best methods to be pursued to protect the country against the invasion of any such epidemic disease, and the results of such conference shall be, by the Secretary of Public Health, communicated to the President for such action as may be deemed wise and expedient.

Sec. — Repealing clause.

Pennsylvania Sanitary Convention.

Harrisburg, Pa., Jan. 27, 1894.

The *Public Ledger* of Philadelphia, a sheet known all over the country for its conservatism and moderation says in its Harrisburg letter of yesterday: "Harrisburg is a city of conventions; but a more interesting assemblage than that which Governor Pattison called to order in the Supreme Court room this morning never met here. The Sanitary Convention under the auspices of the State Board of Health promises to be fruitful in results far-reaching and important." While the first of these two assertions may possibly be a little extravagant, the second is amply justified. This convention was in point of fact a conference between the State Board of Health and the local boards, the great majority of the latter having but recently come into existence, under the Act of 1893, "to enable boroughs to establish Boards of Health." It is safe to say that it marked a new era in health administration in this conservative old State. The two hundred delegates, representing more than one hundred boards, were there with one common purpose; that of acquainting themselves with the most efficient methods of discharging the important and responsible duties assigned to them by their respective municipalities. From the moment that the venerable Bishop McGovern concluded his opening prayer, until the announcement of adjournment by the Governor, attention never flagged for one moment. In the past, Pennsylvania has unquestionably been a laggard in the great march of sanitary reform. It needed ten years of earnest effort to obtain the establishment of a State Board of Health, and it has taken nearly the same period for that Board, seconded by the efforts of all the sanitarians of the State to procure the passage of a law to enable towns other than large cities, to provide themselves with this essential department of municipal government.

No one who looked into the eager faces of the intelligent, dignified, and for the most part cultured men who crowded the Supreme Court chamber to overflowing, and who reflected that they represented every section of the Commonwealth from the Delaware to the Ohio, and from Maryland to the Great Lakes, and who listened to the able and exceedingly instructive papers which were read, and the pertinent discussions and acute interrogatories which followed them, could doubt for a moment that "the former things had passed away," and that Pennsylvania was rapidly forging forward to a foremost place among those States which intelligently appreciate the necessity for official sanitary supervision.

The following is the program of the meeting. The practical character of the subjects can not fail to arrest attention. The opening address by His Excellency, the Governor, showed his entire sympathy with the movement, and his intelligent appreciation of the requirements for the protection of the public health:

Friday, January 26, 1894.

1. Prayer, by the Right Rev. Thomas McGovern, D.D., Bishop of Harrisburg.
2. Opening Address, by His Excellency, Governor Pattison.
3. "The Authority and Mission of the Local Board of Health," by M. G. Lippert, Vice-President of the Board of Health of Phœnixville. Discussion (limited to five minutes for each participant).
4. "The Duties of Local Boards of Health in the Management of Contagious and Infectious Diseases," by Wm. H. Ford, M.D., President of the Board of Health of Philadelphia. Discussion.
5. "Sanitary Engineering, or, the Prevention of Preventable Diseases," by Howard Murphy, C.E., Engineer Member of the State Board of Health of Pennsylvania. Discussion.
6. "Sanitary Sins of Omission and Commission in our Common Schools," by S. T. Davis, M.D., President of the State Board of Health of Pennsylvania. Discussion.
7. "Powers and Possibilities of Local Boards," by Major M. Veale, Health Officer of Philadelphia. Discussion.
8. "How the State Board and Local Boards of Health may be Mutually Helpful," by Benjamin Lee, A.M., M.D., Secretary of the State Board of Health of Pennsylvania. Discussion.
9. "To what Extent should Compensation be made for Losses Sustained to Protect Communities in Cases of Contagious Diseases," by J. H. McClelland, M.D., Ex-President of the State Board of Health of Pennsylvania. Discussion.
10. "The Local Board as a Sanitary Instructor," (illustrated by the stereopticon), by Joseph F. Edwards, A.M., M.D., Member of the State Board of Health of Pennsylvania.

Reception by His Excellency, Governor Pattison, at the Executive Mansion, to the visiting delegates, from 9 to 10 P.M.

Saturday, January 27, 1894.

11. Prayer, by the Rev. Dr. Dimmick, Pastor of Grace Church, Harrisburg.
12. "A Few Needed Reforms in the Health Service," by Crosby Gray, Esq., Department of Public Safety, Pittsburg. Discussion.
13. "A Paper," by Pemberton Dudley, M.D., Member of the State Board of Health of Pennsylvania. Discussion.
14. "The Ounce of Prevention," by Abraham M. Beitler, Director of the Department of Public Safety of Philadelphia. Discussion.

While all the essays were full of careful thought and useful suggestions, that of Major Moses Veale, the efficient Health Officer of Philadelphia and President of the State Quarantine Board, was so admirable a statement of the powers of boards of health, and of the manner in which those powers may be exercised to the best advantage, that the State Board of Health was requested by vote of the Convention to have it printed and distributed to all local boards as a circular of information.

So deep was the interest felt by the delegates, that the proposal to form a permanent association was received with enthusiasm. By-laws were adopted, making provision for an annual meeting, the publication of a volume of proceedings and the issuing of occasional addresses to the public. The Governor of the State was made President *ex officio*.

Dr. John H. Rauch, late Secretary of the State Board of Health of Illinois, who was in Harrisburg during the session of the conference, was invited to a seat upon the platform, and, by a rising vote, elected the first honorary member of the "State Associated Health Authorities of Pennsylvania." Dr. Rauch, in briefly acknowledging the honor conferred, took occasion to contrast the lavish expenditures made by the Legislature of Pennsylvania, his native State, for the cure of disease in appropriations to hospitals, amounting to about half a million dollars at each session, with the niggardly provision of $6,000 annually to its State Board of Health for the prevention of disease. He also complimented the State Board of Health on the results which it had accomplished with the very limited means at its disposal.

The officers elected were: Major Moses Veale, Health Officer of Philadelphia, First Vice-President; Hon. Thomas P. Merritt, ex-Mayor and member Board of Health of Reading, Second Vice-President; Dr. James H. McClelland of Pittsburg, former President of State Board of Health, Third Vice-President; William B. Atkinson, M.D. of Philadelphia, Medical Inspector to the State Board of Health for the Delaware District, Secretary; Jesse C. Green, M.D., member of the Board of Health of West Chester, Treasurer.

MISCELLANY.

Dr. J. L. Forwood of Chester, Pa., was a delegate to the National Board of Trade which was in session in Washington last week.

Dr. Acuff of Franklin Junction, Va., was recently shot by an unknown assassin. The bullet was extracted and the Doctor is recovering.

Nutmeg Quacks to Go.—It is stated that hereafter the Connecticut State Board of Health will vigorously prosecute irregular medical practitioners, and if possible drive them out of the State.

Millions for the Sick and Afflicted of London.—It is estimated that not less than $27,000,000 will, in 1894, pass into the coffers of the various charitable institutions having their headquarters in London. Howe's *Directory of Metropolitan Charities* for the present year gives the above estimate.

International Medical Magazine.—The copyright and subscription list of this magazine has been sold by the J. B. Lippincott Company to the International Medical Magazine Company. Prof. John Ashurst of Philadelphia, Prof. Jas. T. Whittaker of Cincinnati, and Prof. Henry W. Cattell, will supervise its publication.

No Good for Advertising.—First Quack—Here is a letter it would not do for us to publish. A man writes: "I have just taken my first bottle of your medicine and I—"

Second Quack—Well?

First Quack—There it breaks off short and is signed in another handwriting, "See executor."—*Medical Sentinel, from Philadelphia Item.*

Pennsylvania State Medical Examiners.—On January 17, Governor Pattison of Pennsylvania, appointed the following State Medical Examiners under the act of May 18, 1893: H. G. McCormick, M.D., Williamsport, three years; Henry Beates, Jr., M.D., Philadelphia, three years; W. J. R. Kline, M.D., Greensburg; A. H. Hulshizer, M.D., Philadelphia, two years; N. S. Foster, M.D., Pittsburg, two years; J. E. Stillman, M.D., Erie, one year; Samuel W. Latta, M.D., Philadelphia, one year; seven Homeopaths, and seven Eclectics.

Indianapolis Plans for a Pest House.—President Hays of the Indianapolis Board of Public Health, presented the plans and specifications for a pest hospital to the Board of County Commissioners January 23. The estimated cost of the structure is between $5,000 and $6,000. The Commissioners took the matter under advisement.

The New Mannlicher Missile.—The London letter of the New York *Sun* contains the following paragraph regarding the new weapon of European armies, that is said to carry two miles and a half:

"The chief surgeon of the Roumanian army has been making grewsome experiments with the new Mannlicher rifle, with which the forces are being equipped. He placed a number of human bodies in rows, like soldiers on the field of battle. At 600 meters five bodies were placed a half yard behind each other. A single bullet went through three bodies in succession. Upon the soft parts of the bodies the wounds were perhaps less serious than those inflicted by the old-fashioned rifles, the hole made by the bullet being smaller and more even; but on the whole the injuries are far more terrible. The range of the new rifles is about two and a half miles."

The Commissioner of Education.—Upon the recommendation of the Secretary of the Interior the President has determined to continue Dr. William T. Harris as Commissioner of Education. Dr. Harris owes his retention to the facts that he is not in any sense a partisan and that he has made an excellent officer. He was appointed in 1889 by General Noble because of the great reputation made by him as Superintendent of the city schools in St. Louis. In 1888 he had voted for Mr. Cleveland for President. The office is not political and Dr. Harris has been so signally successful that eminent teachers in all parts of the country have united in requesting his retention.—*Washington Post.*

In Quarantine at Vera Cruz.—Prominent Americans detained with twenty-two smallpox patients on board the *Seguranca*. The Ward line steamship, *Seguranca*, from New York was quarantined off the port of Vera Cruz with twenty-two cases of smallpox on board January 18. Among those on board were James E. Ward and Joseph O. Ward of the Ward Steamship Company; Aaron Vanderbilt, the millionaire; several leading Catholic clergymen of the United States; Bishop Fitzgerald of New York; Rev. J. Thompson, the Methodist missionary in South America; Rev. S. P. Carver and wife, and Dr. O. E. McDonald, all of whom were on the way to the General Mexican Methodist Conference which opened at Orizaba. The ship was held by the authorities until full precautionary measures were taken. It is thought the pest was taken on board by a number of steerage passengers who embarked at Havana.

The Missouri Medical College is about to erect a capacious new building, on the completion of which it will vacate its old quarters on Twenty-second Street and Lucas Avenue. About three years ago the College absorbed the St. Louis Post-Graduate Hospital and Polyclinic Free Dispensary at the corner of Jefferson and Lucas Avenues. The new structure will be erected on the vacant lot adjoining the latter, which is now known as section 2 of the Missouri College. The lot fronts 60 feet on Jefferson Avenue and runs back about 150 feet. Thus, taken in conjunction with the Post-Graduate Building, which will be remodeled to harmonize with the new part, the Missouri Medical College of the near future will occupy a space of about 120 feet by 150 feet. A premium of $500 for the best plan is now being competed for by four selected architects. Plans and specifications are to be submitted early in February, and as soon as the award is made the work will be begun. The College as recon-

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LECTURE.

REMARKS ON CLINICAL CASES.[1]

1. POISONING BY ELDER, OR ALDER (?)—2. DOUBLE PHLEGMASIA, OR MILK LEG, AS A SEQUEL OF CATARRHAL PNEUMONIA.

From a Clinical Lecture delivered at the Pennsylvania Hospital, Jan. 20, 1894.

BY J. M. DaCOSTA, M.D., LL.D.
PHILADELPHIA.

The patient, now wearing a mask on his face and with hands and forearms bandaged, was admitted into the Hospital Jan. 15. He is a locomotive fireman, and usually enjoys good health and, in truth, was well when this inflammation and eruption upon his face and hands appeared. He gives the following account of himself: When on a visit to the country two weeks ago, he took a walk and was poisoned by a plant by which he has been poisoned once before. He cut a switch from a bush of red elder (not the edible variety), and incidentally applied his hands to his face and also to his genitals, while wet with the juices of the plant. This occurred January 7, and in a few hours was followed by an acute inflammation of the skin of the parts exposed. When he was admitted a week later, upon the reddened surface were seen many scattered papules and a few vesicles. This was associated with marked itching and burning, but not much secretion. The parts affected were the face, both forearms and hands and the genital organs.

It appears at first glance as if the patient were suffering from an acute eczema, but he says that he has previously been poisoned by the same plant, with which he is quite familiar, and that he is sure that in his walk he touched nothing else; and is quite certain that he did not come in contact with rhus, or poison ivy, on that day. With this eruption, there have been very few constitutional symptoms. He had no elevation of temperature and no other evidence of fever. The urine presented nothing abnormal. Burning and itching were the local symptoms of which he most complained.

This poisoning seems to us a very strange thing from either the elder or the black alder, both of which are used medicinally, and the leaves used as local applications, or infusions of the twigs, employed in the treatment of various forms of skin disease. It has been suggested that he might, in spite of his denial, have unconsciously come in contact with rhus, which we know to be poisonous, had he not asserted that it is the second time that he has been poisoned by the same plant, which he knows by the name of the black elder—which he tells us is not the edible variety, but the one that bears a cluster of red berries; it is probably the *prinos verticillatus* or black alder. We might still have believed that he might be mistaken, were it not for the fact that a distinguished physician of this city remarked to me that he himself had been poisoned in the same way several times, when a boy, by the elder plant.

As regards treatment, on account of the similarity of this inflammation to erysipelas, he was given, by the mouth, tincture of chlorid of iron 20 drops every four hours at first, and subsequently four times daily. As the skin was hot and, for the most part, dry, he was allowed one-sixth of a grain of pilocarpin, hypodermically, and this was repeated three times a day until sweating was produced, which gave him considerable relief. We observed also, following this, an eruption of vesicles upon his face. The pilocarpin was evidently of great service. Local treatment was also used which afforded marked relief. The fluid extract of witch-hazel diluted (1:4) was applied to one arm, bicarbonate of soda solution to the other, while ichthyol ointment containing soda, glycerin and water was used for the face. In this way, we instituted a comparison of different remedies ordinarily used for this purpose. The effect of each was observed. The soda gave temporary relief, and so did the witch-hazel, but the best result was obtained from the ichthyol, which was a great success. It not only gave such prompt relief as to attract the patient's notice, but the inflammation of the skin subsided more rapidly when it was applied. It was a 10 per cent. ointment of ichthyol in lanolin that was employed in this case.

In the treatment of this patient, two things were of marked benefit, the pilocarpin given hypodermically and the ichthyol locally. As he is rapidly improving, we will continue the ichthyol ointment as a local treatment and reduce the iron to 10 drops three times a day. The pilocarpin is no longer necessary and will not be continued.

[The patient was again presented before the class, a week later. His face was clear except two small furuncular spots on the forehead. The hands and forearms were free from inflammation and the skin was desquamating. The patient expressed himself as feeling well enough to return to his work and was discharged a few days later. It was noted during the healing process that the intense itching was promptly relieved by applications of alcohol diluted with water.—Rep.]

I will now present you a case of quite another character:

Thomas McC., born in Ireland, a rigger by occupation, 34 years of age, was admitted Dec. 26, 1893. Occasionally uses alcohol, and constantly uses tobacco. He had a severe attack of grippe six years ago, and a second attack two years ago. Last November he was treated in the Newark Hospital for pleurisy, and was discharged about the first of last month after four weeks' treatment. He was then well and returned to work, in which he was much exposed to the weather. One week before admission here he had severe pain in his right side, with cough, slight expectoration, short breath; no headache or pains in limbs. On admission he had dullness on percussion at left base in axillary line, with diminished vesicular sounds and distant bronchial breathing; a few mucus râles. Urine contained neither albumen nor sugar. Heart examination was negative.

From the notes which you have heard read, you would say that this was a case of very marked

[1] Reported for the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

catarrhal pneumonia. The distinctness of physical signs, the flushing of the face and short breathing, even in the absence of other symptoms, led us to recognize the nature of the case and treat him accordingly. But it is not on this account that I bring this patient before you; but he speaks of a most extraordinary sequel in this case. Ten days after admission, he was nearly well, the shortness of breathing was relieved, the physical signs in the lung were gradually passing away and he was convalescing comfortably when he called our attention to a pain which he had in his right leg. We found tenderness upon pressure, especially below the saphenous opening and following the course of the vein. Presently, or rather the following day, there was enormous swelling of the whole limb; it was not quite twice the size (girth) of the left leg. With it there existed the following signs: The leg was cold, the veins were much distended, so that the whole appearance of the parts from the thigh downward, was that of a dark blue surface. The femoral vein was evidently occluded, and it was extremely hard and tender to the touch. The condition of the limb referred to extended upward into the lumbar region. The pain from the swollen limb was so severe that for four days the man could not get any rest, and only slept when he was given opiates.

Now, the condition of things was finally and very favorably modified by elevation of the leg and hot moist applications. At first, poultices were used but were soon succeeded by warm fluid extract of hamamelis. Under the treatment the pain has disappeared, and the leg, though still somewhat swollen, has resumed a more natural appearance. All this time, strange to say, his temperature showed no elevation; the slight elevation, indeed, which previously existed passed away. Lately, indeed, during the last four or five days the temperatures in the morning and evening are somewhat abnormal.

The urine examinations which were made carefully and repeatedly showed nothing wrong in the kidneys; 1018 is the record of specific gravity; no albumen, no sugar. There were no marked digestive symptoms. Early in the case, when he first came here, there was some nausea and vomiting, but nothing of the kind has occurred since he complained of the pain in his leg.

You would naturally suppose that on seeing a case of this character, we at once asked questions as to the abdominal circulation; whether or not pressure upon venous trunks existed to explain this phenomenon. This we did, but could find nothing of the kind. Also, in following out this line of thought, we examined for enlarged prostate gland through the rectum. This also proved unavailing. In other words, we could find no explanation in the abdomen for this condition. His tongue is slightly coated; appetite fair; no vomiting; bowels regular, though we have had to aid in this matter because he has shown a tendency to constipation throughout the disease, even since admission.

I will now proceed to examine his heart: The first sound is feeble, as it has been throughout; the second sound is distinct. There is no increase in size of the heart; simply a feeble action, just as is sometimes met with in rather low fevers, especially in typhoid fever. That was a feature from the very beginning of the case. In the lungs, he has no longer any dullness anteriorly. I will not examine him posteriorly as I do not wish to disturb him, but from my last examination I can say that the lung symptoms have passed away; nothing was found in the posterior portion of the lungs when he was last examined in the wards.

On coming to the abdomen, you will see that he has a poultice now on his abdomen. This was applied because he complained of pain in the region this morning. There is some distension of the abdominal veins, especially now on the left side. There is no tenderness, no eruption, and I will further add that we have examined him for typhoid fever by applying Ehrlich's test to the urine, but with negative result.

I shall show you that this man has not only swelling of the right leg, but you will also see this morning a curious state of things. The left limb now is swollen until it is larger than the right. This swelling of the left leg is of recent development; it only began day before yesterday. But seeing him this morning, you will hardly believe my previous statement as to the relative size of the legs. The right is still somewhat swollen, although much reduced, but the left is now the larger limb. In other words, this man has double phlebitis; on the right side subsiding, on the left only recently begun.

Let us study the case a little more closely. He has now no pain in the right leg. The cordy condition of the veins has passed away. He has still numbness in the right foot. The thigh still looks somewhat blue. With the exception of the numbness and the color, there is nothing especially abnormal now in the right leg. But look at the left! The thigh is subject to pain and tenderness on pressure; there is marked sensitiveness in the calf; there is considerable soreness in Scarpa's triangle, and the veins are distended in the upper part of the thigh to as intense a degree as on the right side when it was at its worse. There is manifest swelling with pitting upon pressure with the finger. The veins on the surface around the saphenous opening are distended, and there is slight tenderness over the left femoral vein. The limb is large and discolored in the same manner as the right one was.

The diagnosis is clear enough. The case is one of double phlebitis of the lower limbs, coming on first in the right leg and then in the left. I may add that the same treatment is pursued with the left leg as with the right one. The limb is elevated and kept bathed with hot hamamelis solution. He is taking 12 grains of quinin a day and has been taking as a cardiac stimulant carbonate of ammonia, 5 grains, every four hours, which I will now stop and order in its place the tincture of digitalis, 10 drops, four times a day. At the same time, we will see that the kidneys continue to act well and if the digitalis prove not sufficient as a diuretic, let him in addition take 2 drachms of acetate of ammonium, in solution, daily. This can be aided by occasional saline laxatives. I have now stated the treatment and will briefly consider the pathology of the case.

You will naturally ask what is the cause of all this? I have already told you that this is an extremely rare case. Double phlebitis of the legs following catarrhal pneumonia is so far from being common, that this is the first case of the kind I have seen. I have seen one or two case of phlebitis after pleurisy. In truth, an instance came to my notice of phlebitis in pleurisy proving fatal by the throm-

bus being detached from the vein and finding its way to the heart, as the autopsy proved. As you noticed in the history of this case, this man also had pleurisy and you might say that this was the cause of it all. And I should also think so, were it not for the fact that, on admission, all signs of pleurisy had passed away, and we only accepted the history of pleurisy because of the statement of the patient that he had been treated for pleurisy at a hospital, where we know that the physicians were fully competent to make the diagnosis, and we, therefore, are willing to take this as part of the clinical history of the case. We know that he did have catarrhal pneumonia, which must have appeared after the pleurisy had gone. He stated that he had been well after the attack of pleurisy and was again at his work. There is in the case a possibility that this thrombosis may be due to pleurisy because the man actually had pleurisy; but I can not accept this theory of the case for the reasons stated. The phlebitis came on during convalescence from pneumonia and, as I have said, it is the first case of the kind I have seen. Phlebitis, however, is not uncommon. I have seen it in many cases; dozens of times in acute fevers, such as typhus and typhoid. In cases of fever where the circulation becomes feeble, there is this tendency to coagulation of blood in the veins. It is most common as a sequel to parturition, and may be an expression of blood poisoning such as occurs in pyemia. I have never previously seen it in an acute inflammation of any viscus, and have searched medical literature without success for a similar case to the one now presented. You might say that it is a coincidence, and that the pneumonia and the phlebitis have nothing to do with each other, were it not that the phlebitis has appeared also in the left leg, which shows something in the man, or something peculiar to his condition which makes it possible for the phlebitis to occur.

Now, is it possible that this catarrhal inflammation of the lung was in reality only a part of an attack of influenza? It would be much easier to explain the occurrence of this complication if the patient were suffering from a general disease than if he had simply an acute attack of pneumonia. The patient states that he had two attacks of influenza before this illness. I can not, however, entirely accept this view of the case because when the man was admitted he had no pains in the bones or muscles; he had no headache, in short, none of the ordinary signs of influenza.

Whether it be due to catarrhal pneumonia or to influenza; how can we explain this phlebitis, this coagulation of the blood in the veins? It can only be through the circulation. All through the case feebleness of the heart's action has been observed. Notwithstanding the iron, notwithstanding the carbonate of ammonia, his condition has been throughout, as it is now—"feeble first sound, feeble pulse." It is possible that with this feeble circulation a certain condition of the blood was present which favored the formation of a clot, and that the phlebitis occurred in consequence of the plugging of the vein with a thrombus. Indeed, here I can find no other explanation. It has been said that the lowered state of the circulation in typhoid fever is due to a poison circulating in the blood, and possibly this may be derived from the ulcerations in the intestines, or in other words there is set up a condition of septicemia. No such explanation can be offered here; we can invoke nothing but a poor condition of the blood and general feebleness of the circulation as the cause of the thrombosis. What is the prognosis in this case? The man will get well. The right leg has almost recovered, and the left is improving under the elevation of the limb, upon which I lay great stress, and the warm fomentations. His recovery is undoubted, but after he goes about there may be some stiffness, swelling or tenderness along the veins for a time, interfering with active exercise, so that convalescence may be slow; very much like what takes place after typhoid fever.

ORIGINAL ARTICLES.

A PLEA FOR ASEPTIC VACCINE VIRUS AND ASEPTIC VACCINATION, WITH A CASE IN POINT.

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On the continent every effort is made to secure aseptic lymph. Its asepticity can not be otherwise than probable, until the specific germ or tox-albumen of cowpox shall be isolated, and a laboratory product placed upon the market. However, it is not unreasonable to now require that a vaccination abrasion be treated as is any other abraded surface, viz: aseptically. Since the vitiation of bovine virus by twenty or more demonstrable germs can not as yet be excluded, added infection from skin and air can, at least, be prevented by the antiseptic preparation, operation and dressing of the arm.

Should an ulcer, erysipelas, lymphangitis or phlegmon appear, treat each as you would surgical complications elsewhere. Granting them to be infectious, it follows that their invasion and effects must be minimized.

In the proceedings of the Pediatric Section of the New York Academy of Medicine, reported in the January, 1894, number of the *Archives of Pediatrics*, Dr. J. Lewis Smith describes a case of fatal sepsis and death following vaccination. Dr. J. H. Fruitnight mentions a case of tetanus in this relation. Home and foreign literature contributes its quota of cases. The editorials in an early summer number of the *British Medical Journal* entitled, "Militant Antivaccinators" and "The Vaccination Craze," unintentionally reveal the same unfortunate state of affairs. Consequently, the relevancy and justice of this opposition can not be overlooked.

Dr. J. Lewis Smith's case is commented upon as follows: "Inasmuch as the symptoms of sepsis had not developed for a week or more, the inference was that the wound became infected subsequent to vaccination. The case taught the lesson that greater care should be taken to protect the vaccination wound against infection."

Doubtless great and general carelessness prevails in this respect, but the criticism is not far-reaching enough, in that it fails to touch the root of the evil, the contamination of the virus itself. Reference has been already made to the unavoidable microbic pollution of the lymph. A little study, or better still,

a visit to a vaccine station, will convince one that there are other and many extrinsic sources of defilement. Here, in America, there is no certainty that the cow is prepared or the virus secured in accordance with the dictum of surgical bacteriology. The vaccine stables are private commercial institutions subject to, absolutely, no federal, State or municipal regulation. It is not sufficient that the stock be select and healthy, and the stables hygienic; the most rigid adherence to antiseptic principles in the bovine inoculation, subsequent dressing, and securement and preservation of the lymph, should be demanded as well.

An epidemic, if not pan-endemic, of sore arms imperatively calls for organized effort on the part of the profession, in order to effect improvement in the present vaccine supply. Proper investigation, organization and legislation with reference to this, so important a subject necessitates time, while its exigency requires immediate attention. The emergency might be dealt with through the agency of accredited representatives of the local medical societies. These agents might instruct owners and managers of vaccine stations as to the requirements of the profession; the refusal or acceptance of these requisites to be met on the one hand by a boycott, and on the other hand by the offer of a premium for purer virus. My earnest consideration of this subject was stimulated by a case of thrombo-phlebitis, pyemia and death that occurred in my practice two years ago.[1]

A nursling, although marasmic and feeble from prolonged confinement to a ward that had been quarantined for an outbreak of measles, was vaccinated because of a smallpox endemic in the institution. The operation was antiseptically done but, to my astonishment, almost every member of the large ward developed some vaccinal complication.

A recent visit to the stable from whence the virus was then obtained explains these manifestations.

The arm of this child, however, presented nothing abnormal and the wound over the left deltoid was about healed, when the nurse called my attention to an abscess on the superior antero-internal aspect of the left arm. Other abscesses rapidly and successively appeared in the left axillary, infra-scapular and pectoral regions, and finally another was found over the lower part of the internal saphenous vein. Nodulation and ecchymosis, involving the affected vein and contiguous tissue, occurred in each instance. Nasal and aural hemorrhages and the rapidly progressive prostration simply confirmed the original diagnosis.

At the autopsy, I found a thrombus in the cephalic vein but a short distance from the normally fovealated scar. The relations of the cephalic to the basilic, subscapular, thoracic and axillary veins demonstrates the infection, atrium and course. Its transmission through the heart and lungs into the general circulation needs no further explanation. Though not creditable, the case has taught me many lessons, and I trust will rouse the profession to a realization of the septic condition of the vaccine virus in general use.

3444 Indiana Avenue.

[1] Reported with other cases in my article, "A Contribution to the Study of the Accidents of Vaccination," in the June number of the North American Practitioner.

Blank Applications for membership in the ASSOCIATION at the JOURNAL office.

THE TREATMENT OF ULCERS OF THE LEG.

Read in the Section on Dermatology and Syphilography at the Forty-fourth Annual Meeting of the American Medical Association.

BY LOUIS FRANK, M.D.
MILWAUKEE, WIS.

The treatment of ulcers of the leg has at all times been the *crux medicorum* and has heretofore, as a rule, been assigned to the field of the surgeon, although in most cases a true affection of the skin. The vast number of remedies advocated for the relief of this pathologic condition only speak for the difficulties offered in its treatment. The entire old arsenal and an array of new remedies, as iodoform, salol, dermatol, europhen, aristol, ichthyol, etc., have been successively brought forth as remedies, par excellence, in the therapeutics of ulcers of the leg. The cause of the failure in the accomplishment of the required result lies not so much in the non-efficaciousness of the above named drugs as in the faulty adaptation to the pathologic condition of the parts. A close study of the relations and the etiologic condition ought to convince us that a particular drug is incapable of meeting all the requirements, which the treatment of the chronic ulcer of the leg demands. Even a simple ulcer on any part of the body, caused by a local lesion, requires, according to its indications, a treatment which can not be followed out by one particular remedy; how much more a chronic ulcer of the leg, which usually presents such a varified appearance of pathologic complications.

We can easily understand why one particular remedy is incapable of fulfilling all indications in relation to the cure of an ulcer, and why it is absolutely necessary to study the pathologic appearances which an ulcer at the time presents, to apply the proper measures. At one moment we will find the ulcer shallow with a necrotic base; at another time its surface covered with exuberant fungous granulations, and our treatment must be directed accordingly.

The causes which lead to the formation of ulcers of the leg are principally the unfavorable anatomic relations of the parts. In the first place its arterial circulation is diminished on account of its greater distance from the heart; second, the centripetal circulation of the venous system is impeded by the pressure of the venous vessels during walking or standing. Under the influence of this stasis and the peculiar tension of the skin on the anterior border of the tibia, a very trifling lesion, as the bursting of an eczematous vesicle, the opening of a furuncle or any mechanical insult will result in the formation of an ulcer.

The manner in which an ulcer begins, varies according to its origin on the surface or in the depth of the skin. If it develops on an inflamed portion of the skin, a condition of stasis being present, an infiltration of wandering cells takes place in the superficial layers of the cutis, the papillæ are enlarged and the connective tissue of the papillary layer is softened and macerated. The epithelial layer of the superficial stratum fails to regenerate itself, the cellular layer of the rete Malpighii is exposed and a suppurating surface, whose upper layer consists of wandering cells and the lower of the enlarged papillæ, appears. Beneath this layer of necrotic or pus infiltrated tissue the base of the ulcer is always hyperemic. If the ulcer takes a favorable

course, the hyperemic surface will, after the necrotic tissue is thrown off, develop into granulations which consists of new loops of vessels covered with young granulation cells. The process of healing going on, the granulations arrive at the level of the borders of the ulcer. Then there becomes visible at its edge and at times on the summit of some of the granulations, a soft epithelial covering which grows denser as it grows toward the center of the ulcer. The granulatory tissue shrinks to a mass of firm elastic tissue and cicatrization takes place.

After these preliminary remarks, in which I have attempted to describe the etiology and formation of an ulcer, the pathologic processes during its development, and consequent cicatrization, and before passing to the treatment (proper) of ulcers of the leg, I deem it advisable to refer to a classification of ulcers which would aid in the correct diagnosis and treatment of the same.

Among the older authors, Bell has first divided ulcers into local and symptomatic ulcers, or those dependent on the consequence of a general systemic disturbance. Langenbeck has made a similar nomenclature, dividing ulcers into two great groups; primary and secondary ulcers, and Billroth likewise mentions two classes of ulcers: 1, the local idiopathic ulcers, including the erethitic, fungous, callous, etc.; and 2, the symptomatic ulcer including the scrofulous, syphilitic and so on. On the basis of this last classification I have attempted to classify the ulcers, which are apt to affect the leg, as seen by this chart:

Idiopathic or Local.	1. Simple			
	2. Complicated.	Faulty vitality. . .	Hyperesthenic	Erethitic
			Asthenic . .	Torpid
		Faulty secretion .	Putrid	
			Gangrenous	
		Faulty floor of ulc'r	Edematous	
			Hemorrhagic	
		Faulty granulation	Fungous	
			Hypertrophic	
		Faulty border . .	Callous	
Symptomatic.	1. Due to constitutional infection (basis healthy).		Diptheritic	
			Syphilitic	
			Mercurial	
			Scrofulous	
			Scorbutic	
	2. Due to constitutional infection (basis degenerated).		Tubercular	
			Lupus	
			Tertiary syphilis	
			Carcinomatous	
			Ulcus rodens	
	3. Due to internal causes.		Varicose	
			Gangrenous	
			Neuro-paralytic	

SIMPLE ULCER.

The simple ulcer usually occurs in persons, in whom there is no constitutional defect connected with nutrition, circulation or innervation, and is usually the result of mechanical injury. The surface of such an ulcer is depressed, red, and presents irregular projections of granulating tissue all over; the margins consist of healthy skin of more than the usual vascularity, the borders appear white with an inner line of a pinkish hue, which shades off into the bright red of the granulation.

The treatment of simple ulcers requires nothing but cleanliness and protection for their cure.

Among the ulcers complicated with a faulty vitality must be distinguished the hyperesthenic and the asthenic ulcer. The former, also called the inflammatory ulcer, is characterized by a very red ulcerating surface, slightly swollen and bleeding readily. Its treatment consists of soothing applications, and I have been in the habit of prescribing a lotion recommended by Crocker:

℞. Pulv. calaminæ prep ℥ij.
Zinci oxidi ℥iss.
Ol ♏
Aq. calcis ää ℥j.
M.

The asthenic ulcer may be erethitic; that is, abnormally hyperesthetic with little tendency to heal, and the torpid ulcer characterized by a very diminished sensibility. The former is best treated by nitrate of silver or the actual cautery in order to convert it into a simple healing ulcer.

The treatment of the torpid ulcer will be considered with the treatment of the callous ulcer, which it resembles in many particulars.

Among the ulcers complicated with faulty secretion, we include the putrid ulcer, which on progressing causes a breaking down of the surrounding tissues and is changed to a phagadenic or gangrenous ulcer. The secretions are putrid and of a greenish-gray appearance. The treatment of this form of ulcer consists in the application of strong antiseptics, particularly carbolic acid, chlorid of zinc, sublimate, especially iodoform, which quickly destroys the smell, If the putrid ulcer has already become gangrenous. the destruction of the gangrenous parts, including some of the apparently healthy tissues, by the thermocautery is indicated. Thiersch has advised to make hypodermic injections of nitrate of silver 1:1500 into the cuticle at the distance of one centimeter from the margin, one centimeter apart, until the whole border of the ulcer is swelled.

Among the ulcers complicated with faulty granulation may be mentioned the fungous and hypertrophic ulcer. This form of ulcer is characterized by prolific exuberance of spongy granulations (wild flesh), extending far over the under surface of the ulcer. In mild cases it suffices to apply the stick of nitrate of silver to the granulations. If, however, the granulations have a tendency to grow and extend, it is advisable to remove the same with the scissors or the Volkmann spoon, under antiseptic precautions.

I will now confine myself to the discussion of the chronic ulcer of the leg, the callous ulcus cruris.

CALLOUS ULCER,

which is the typical ulcer of the leg, the old sore shin of the laboring classes, and the one which should chiefly engage our attention. It exists frequently without constitutional complications, in robust, healthy persons past the middle period of life. At first a simple sore, it suffers from neglect, the clothing irritates it and secretions are allowed to collect on and about it. In the beginning it tends to heal like any healthy ulcer, but it is injured again and again until each successive appearance increases its indolent and callous character. The surface is depressed and presents a yellowish-gray appearance, with perhaps here and there a red or pink granulation peeping through, the edges are elevated and abrupt, covered with a thick, scaly epithelium, the surrounding parts are hard, callous and infiltrated. The circulation is feeble and insufficient and showing no inclination to bleed.

The general practitioner, even the surgeon, does not take a correct view of the treatment of this chronic ulcer of the leg; the true nature of the disease is imperfectly understood, because the knowledge of its pathology is not properly comprehended; and it is not an uncommon thing to meet with

patients who have been afflicted with a sore leg for ten and twenty years or more. This is particularly true of the poorer hardworking classes, especially of women who have borne many children. Heretofore the treatment of this class of patients has devolved on the surgeon, and I believe only during the past years the dermatologists have taken a livelier interest in the therapeutics of the ulcus cruris. I am of the opinion that the treatment of this complaint belongs to the field of dermatology, as the ulcus cruris proper is virtually only a skin lesion, although many times associated with disturbances of remoter organs and irregularities of circulation.

The two main principles that govern the treatment of the chronic ulcer of the leg are rest and cleanliness, including protection. Unluckily, however, these two indications can not always be strictly carried out as in a hospital; the patient is unwilling to be confined to his bed for a trouble which does not concern his general health and welfare. Especially if we consider that it is usually the hardworking class which is so affected. Means must be devised to treat the patient ambulatory and this can be quite satisfactorily accomplished by the following methods of treatment. The one is according to the principles laid down by Dr. Unna of Hamburg, consisting of a zinc-gelatin dressing, which I am in the habit of applying in the following manner: after the ulcer itself has received proper attention by means of antiseptic washes and according to indications, make applications of nitrate of silver if there should be hypertrophic granulation, or iodoform if the surface is putrid, torpid and lacking granulations. The leg is washed and shaved and a moderately thick layer of warm zinc gelatin prepared according to following formula:

Zinci oxidi	30.0
Gelatin alb	40.0
Glycerin	50.0
Water	90.0

M.

Applied by means of an ordinary brush up to the limits of the ulcer. A small pad of medicated cotton or gauze is added as a covering to the sore, a gauze roller beginning at the toes, wound firmly around the limb. When a firmer dressing is required, for instance, if it is intended to remain for a longer length of time, I cover the above layer of gauze with another layer of gelatin and continue the bandage over the same from above downward. It is then allowed to cool off and become dry, whereupon the patient can be dismissed without further precautions. If the discharge is very profuse I repeat the identical dressing after about three days, until the discharge becomes less profuse, when I allow it to remain eight days and longer. The chief advantage of the dressing is: 1, the perfect protection it offers to the diseased parts; 2, the gentle but even compressior which is exerted on the leg by elasticity of the gelatin, for which reason it is especially well adapted for similar lesions in connection with varicose veins. Furthermore, the discharge is effectually prevented from coming into contact with the healthy skin. The simplicity and cheapness of this dressing are likewise greatly in its favor. Not only the ulcer, itself, is greatly improved by this method of treatment, but also such complications as are dependent on the ulceration, as edematous infiltration, chronic squamous eczemas and varicose conditions are permanently relieved by it.

Following is a report of the German Hospital, Dalston, of the treatment of ulcus cruris by Dr. Unna's method. It comprises sixty cases of the various forms of ulcers, viz:

Ulcer.	Healed.	Discontinue attending.	Unsuccessful.	Total.
Callous	14	6	2	22
Varicose	7	—	—	7
Healthy	7	—	1	8
Sloughing	2	—	1	3
Indolent	1	—	—	1
Syphilitic	—	—	2	2
Diabetic	1	—	—	1
Inflammatory	4	1	—	5
Eczematous	4	1	—	5
Eczema cruris	5	—	1	6

In connection with the above treatment I can not speak too highly of the great value of resorcin, in producing new epithelial formation, only second in value to actual transplantation of skin in the healing of ulcers. I usually apply it as soon as healthy granulations begin to make their appearance. It is most conveniently applied in a 10 per cent. plaster made by Beiersdorf in Hamburg.

Notwithstanding the remarkable and gratifying results obtained by above method with the zinc gelatin dressing, it is ineffectual where a callous, dense, infiltrated condition predominates and we must have recourse to other treatment, especially if the treatment is to be ambulatory. To accomplish this object, it has been customary for many years to apply a dressing first described and introduced by Boynton, which consisted of the application of strips of adhesive plaster, of the width of two fingers beginning below the ulcer and encircling the whole affected part of the limb tile-like, and finally wrapping up the leg in a flannel bandage. By this process the borders of the ulcer are drawn towards each other, the circulation improved and granulation encouraged. I have found much occasion to apply this mode of treatment with very good results. However, I have noticed that the plaster, unless it was a very good one, incited an inflammatory condition of the healthy surrounding skin and the discharge escaped from the ulcer and communicated with the adjacent normal parts. I, therefore, substituted for the ordinary adhesive plaster, the diachylon plaster or ointment of Hebra, which exerts a beneficial action on the condition of infiltration, at the same time compressing the limb. In order to lessen the callous condition and hasten the absorption of the infiltrated tissues, I make use of a preparation of tar, preferably the oleum fagi, with which I paint the thickened surroundings of the ulcer.

The method I usually employ for callous ulcers is as follows: After thoroughly cleansing the ulcer and the leg with a corrosive sublimate solution 1:1000, I apply the ol. fagi to the infiltrated tissues surrounding the ulcer. I then take strips of diachylon plaster about two inches wide and one-third longer than the circumference of the leg or similar strips of linen covered with the fresh diachylon ointment, and beginning at the foot, encircle the leg in a manner so that one strip slightly overlaps the other up to the distance of the knee-joint. I find it a rule that the pain of the ulcer ceases after the first application, and within a week's time the sluggish, torpid and undermined appearance of the ulcer is changed to that of a simple, healthy granulating one. At the beginning of the treatment, I change the dressing daily, until the discharge becomes less profuse, when

a period of four or five days may elapse before a new dressing is needed. I find it necessary to treat the ulcer locally at each change of the dressing, according to indications, washing it with antiseptic solutions, applying iodoform when the granulations are sluggish, and nitrate of silver or the ferrum candens where the granulations threaten to become hypertrophic. I believe that this treatment conscientiously carried out will in the great majority of cases, prove successful.

FIBROID TUMORS OF THE UTERUS.

TREATED BY DR. FRANKLIN H. MARTIN"S OPERATION OF LIGATING THE BROAD LIGAMENTS—TWO CASES.

BY J. B. GREENE, M.D.
MISHAWAKA, IND.

Mrs. P. of Grand Rapids, Mich., had for several years been a subject of frequent and profuse uterine hemorrhage; during the years of 1892 and 1893 she suffered greatly with pelvic pain, and constipation. In November, 1893, I was sent for to perform hysterectomy, the physician in charge having diagnosed the case as one of uterine fibroid. Upon examination I found a fibroid almost completely filling the pelvic basin, and so adherent that it was entirely immovable. I should judge that the tumor would weigh ten pounds at least. I did not look upon hysterectomy in that case as promising much more than a coffin, and as I had but a short time before had a talk with Prof. F. H. Martin of Chicago, on his recent experiment in the ligation of the uterine arteries, (this conversation was before Prof. Martin had reported his experiment) I determined to adopt that method, adding thereto the ligation of the ovarian arteries, or one of them. Accordingly I made the ligation of the uterine arteries and a part of the broad ligament after the method described by Martin, but found it impossible to reach the ovarian artery per vaginam. I then cut through the abdomen, and with considerable difficulty was enabled to pass a ligature around both ovarian arteries, passing my needle under the Fallopian tubes, and then back and around the vessel, tying close to the uterus; the uterus showed such a great engorgement of blood that I felt certain there would be no danger of gangrene of the uterus, as there was sufficient collateral circulation from branches of the ovarian artery to maintain life in the organ. After the operation I left the patient in the care of her physician, hearing from her several times during the first two weeks, each report being favorable; after that I heard nothing. Jan. 9, 1894, I was in Grand Rapids, and called upon her. I was indeed surprised to see the great change that one year had made. She was the picture of health, and she informed me that she had never been better. She granted me the privilege of an examination. I thought that I could discover some enlargement of the uterus still remaining, but, if so, it was so slight that it was not worth considering, in the light of the great decrease in the size of the growth. She menstruates regularly and apparently normally, excepting that she has a slight pain during the first day, not often of sufficient severity to cause her to take her bed.

In August, 1893, I was called to see Mrs. H., Mishawaka, Ind., age 31 years. She had for two years been suffering with repeated floodings, not profuse, but frequent. Examination revealed a subserous fibroid in the posterior uterine wall, about as large as an unhulled walnut. She was anxious for relief, but objected to hysterectomy until everything else had been tried. I, therefore, decided to ligate the uterine arteries. She suffered no pain, and I was unwilling to ligate nerve fiber if I could avoid it, accordingly I passed a "guy" through the cervix and close to the os made an incision, entirely encircling the cervix, down to the cellular tissue; then with a "spud" or dry dissector I peeled the tissues back almost to the peritoneum. The uterine arteries were thus brought plainly into view, and with no trouble I passed my ligatures around them, tied and cut them short; then drew down the external uterine coat and with a continuous catgut suture I stitched it in natural place. I had no trouble with the case after; she never had a fraction of a degree of fever, suffered no pain, and in two weeks was out of the house; has menstruated regularly ever since, and has had no floodings. I have not examined her since so can not say as to the condition of the tumor.

TECHNIQUE IN TÆNIA TREATMENT—REPORT OF A REMARKABLE CASE.

BY C. M. FENN, M.D.
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In the absence hitherto of any unfailing tænicides or specifics, it may be profitable to inquire if there are any other methods available for the safe and certain expulsion of the various cestodes. Personally, having abandoned the search for such a remedy, for the reason that it might imperil the well-being of host as well as guest, I find that some of the standard tæniafuges, if employed in adequate doses and supplemented by attention to certain details, to be noted farther on, may be made to accomplish all that we desire. For example, during the local prevalence of tape-worms which followed the importation of a measly herd from Mexico, some years ago, I came to use kameela in doses of 8 to 12 grains (℥ii-℥iii), and ethereal extract of male-fern to the extent of 4 to 10 grams ℥i-℥iiss). These apparently large doses, exceeding those recommended by the authorities of that period, were successfully administered and upon the hypothesis that a parasite which merely imbibes its sustenance, having neither mouth or intestine, and suckers for prehension only, must require quantity as well as quality. In the matter of details referred to, jalap was selected for the before and after cathartic, in preference to several others commonly used. For instance, castor oil, so widely commended in such cases, was believed to be deficient as a peristaltic persuader and practically inert in the presence of mucus. Senna is equally insufficient in its action and aloes correspondingly tardy, expending its force on the lower bowel. Jalap, on the contrary, besides having somewhat of an anthelmintic reputation is safe and admirably adapted for children, to whom it may be given clandestinely in gingerbread or cookies. Following the last dose of the purgative it is advisable to employ frequent enemata of cold water, with or without salt or soap. These appear not only to chill the worm but to measurably increase peristalsis.

Of the three species of tæniæ which mature in the human intestine, tænia saginata, tænia solium and *bothrinocephalus latus*, the first is of more frequent occurrence in tropical latitudes like this owing, doubtless, to the greater consumption of beef in comparison with other meats.

That tænia solium (pork-worm), however, is not unknown here may be inferred from the following case which may also be considered a fitting résumé of the foregoing remarks:

A little boy, on his first legs, injured a toe, to which his mother applied a bit of fresh pork. A second application, soon required, was about to disappear as mysteriously as the first when he was detected in the act of eating it. Three or four months later during a convulsive seizure several segments of a tænia solium were expelled. Believing it to be an instance of *post hoc propter hoc*, active measures were then taken to relieve the child of his unwelcome guest, and before reaching his third year he passed through ten severe ordeals, expelling in the aggregate 110 feet[1] of tape worm! The first three doses, by homeopathic direction, the parents believe were kousso or kameela in combination with some other drug. At all events, after each attempt the child was "sleepy, feverish and a source of great solicitude for twenty-four hours." A fourth dose by another attendant was known to consist of 15 drops of chloroform and one drop of croton oil! This was followed a few weeks subsequently by an emulsion of creasote. Still later, at the suggestion of

[1] Measurements reported by parents.

friends, two attempts were made with emulsions of pumpkin seeds. In justice to all parties, it is proper to state that in every instance starvation and purgation with castor oil, castoria, etc., were rigidly enforced. This is confirmed by an incident in the history, when the little patient led his only sympathetic relative to the cupboard and with tears running down his cheeks exclaimed: "Grandpa, I'se so hungry! I'se so hungry!" Meanwhile, reports of the case had reached relatives in the East, who immediately sent out a quantity of pelletierine tannate, with assurances of success. Two trials of this specific (?) quickly followed bringing away a few feet of the worm as other remedies had done. A small dose of the pomegranate alkaloid remained, but in view of previous failures it had almost been decided to await the natural demise, or suicide (?) of the parasite at the end of four or five years.

The tenth and successful assault was reluctantly undertaken by the writer. Though I should have preferred kousso or koussin for a child, the remainder of the pelletierine was given.

Without special restrictions as to diet a full dose of jalap preceded the tæniafuge about twelve hours, and was repeated next day an hour or two after the exhibition of the anthelmintic. After thoroughly scotching the parasite, indicated by the appearance of large segments in the dejections, frequent enemata of plain and salt water were employed. Traction upon the worm was interdicted, but rather it was advised to strap the protruding extremity to the nates and continue injections. At a later hour the head intact and *erect* with fifteen feet of the tænia gave assurance of its unconditional surrender after a siege of nearly twelve months.

CONJUGATE DEVIATION OF THE EYES WITH MIDDLE EAR SUPPURATION.

Read before the Chicago Medical Society, Jan. 8, 1894.

BY OSCAR DODD, M.D.

ASSISTANT SURGEON ILLINOIS CHARITABLE EYE AND EAR INFIRMARY; CLINICAL INSTRUCTOR OF EYE AND EAR COLLEGE PHYSICIANS AND SURGEONS, CHICAGO.

Upon June 13 last, I was called in consultation to see the following case, on account of the serious symptoms which had supervened three days before. The history of the case was given as follows:

John W., aged 18, had a discharge from his left ear during childhood. This had ceased and remained well until the present attack. After having influenza seven weeks ago, a severe otitis media on the left side with profuse discharge followed. Under treatment he was progressing favorably until three days ago when he had chills, severe pain in left side of head, dizziness and vomiting, since which time his temperature has ranged from one-half to three-quarters of a degree above normal, but has not exceeded that at any time. It was also noticed that the discharge was less profuse.

Condition Present.—Patient very weak, perspiring freely. Temperature 99 degrees. Pulse 120. Dizziness so bad he could not stand or walk alone, having a tendency to fall to left side, and the dizziness did not entirely disappear upon lying down. Moving or rising from the bed was always followed by a spell of vomiting. Pain over left side of head. Mastoid process normal in appearance and only tender upon pressure at one point behind meatus, corresponding to the antrum. Meatus filled with thick creamy pus tinged with blood. After removing this, a polypus about the size of a pea was seen projecting through a perforation in the upper part of the membrana tympani and covering a small perforation in the lower part. After removing the polypus with a snare the openings seemed large enough to allow a free exit for the pus. Upon examining the eyes I found that the movement of both to the right was defective but could be overcome by an effort.

June 14. The patient felt somewhat better, pain in left side of head had disappeared and the dizziness and vomiting were less severe. Temperature normal. Pulse slower. The eye symptoms were more marked, as they were unsteady when looking directly in front and could only be moved to right of median line with difficulty. No diplopia. Slight paresis of left facial nerve, more marked at lower part of face.

June 15. Patient improving but still very weak and dizzy upon moving. Both eyes were strongly deviated to the left side and could not be turned to right of median line. The impairment in movement was about equal in each eye when tested separately. There was no diplopia and none could be elicited by careful testing. Convergence seemed to be retained for objects when held to left side. Pupils normal in size and reaction. Vision was not perceptibly impaired. Field of vision normal. The paresis of left facial nerve had disappeared.

June 16. The condition of the eyes was the same as on previous day. Dizziness still continued but patient could walk without assistance. As the perforations did not allow a free flow of pus I enlarged the lower one by a horizontal incision.

The improvement continued and the dizziness and ocular symptoms gradually disappeared within a few days, so that when he called at my office, two weeks later, no trace of any ocular trouble could be seen. Vision was normal and movement of the eyes perfect. The discharge from the ear was less profuse.

The suppuration ceased about a month later, and nothing now remains of the ear trouble but a slight amount of deafness with tinnitus, the perforations having cicatrized.

The important question in the treatment of this case was the cause of the ocular symptoms. Were they due to an affection of the brain or the meninges, and if so, what was its nature; or were they only a reflex symptom from irritation of the auditory nerve? In favor of the former view were the severe general symptoms as the chills, fever, dizziness and vomiting; but considering the speedy termination of the symptoms after the local treatment and the peculiar muscular symptoms, I am of the opinion it was the latter.

In support of this view is the intimate connection of the auditory nerve with the nerves governing the movements of the eye, especially those of conjugate lateral movement. Associated lateral movement of the eyes is under the control of a single nucleus, that of the abducens or sixth nerve. This nucleus, besides supplying the external rectus of the same side, also sends fibers which, according to most authorities (Fuchs,[1] Morris[2]), join the third nerve of the opposite side and go directly to supply the external rectus or, as Gowers[3] believes, go to the nucleus of that portion of the third nerve supplying the internal rectus. This innervation is separate from that governing convergence, which is supplied by the nucleus of the third nerve.

A connection of the auditory nerve and the nucleus of the abducens has been demonstrated anatomically. S. Freud[4] describes a connection of the vestibular portion of the auditory nerve by curved fibers going directly to the nucleus of the abducens of the same side. Other authorities, as Politzer[5] and Gowers, consider the superior olivary body as the center for reflex movements of the eye, as it receives fibers from the auditory nerve and is directly connected with the abducens nucleus.

To show the direct connection of the movements of the eyes with aural vertigo, a number of physiologic experiments have been performed. Cyon[6] found that operation upon the semicircular canals of different animals gave different results. In rabbits they were manifested principally by movements of the eyes. He also found that they were not compensatory, but came directly from irritation of the nerve. Irritation or section of one auditory nerve would produce a strong deviation of the eyes to the same side. Upon section of the other nerve the deviation would cease.

Lucæ[7] experimented upon some of his patients by increasing the pressure in the tympanic cavity. He found that by increasing the pressure, lateral nystagmus was produced, and when still further increased

to 0.4 atmospheric pressure, the eyes were deviated to the same side.

Högyes[8] showed by a number of experiments upon animals that associated movements of the eyes and dizziness are produced by irritation of the endings of the auditory nerves. He considers that he has demonstrated a reflex cycle, consisting of the muscles of the eyes and the ampullary nerves, by which a reflex stimulation is transmitted from the labyrinth to certain ocular muscles. He found that movements were different according to the portion of the labyrinth affected, e. g., by irritating the horizontal semicircular canals or ampullæ, there was oscillation or deviation of the eyes in a lateral direction toward the irritated side.

Baginsky[9] also produced nystagmus and, when the pressure was increased, conjugate deviation of the eyes to the same side, by the injection of fluids into the tympanic cavities of young dogs. He believed that the symptoms were due to the increase of the cranial pressure, as the fenestræ were always ruptured by the force employed.

Besides these physiologic experiments, clinical observation has shown that pressure in the tympanic cavity and irritation of the auditory nerve will produce ocular movements. Kipp[10] saw nystagmus in three cases of middle ear suppuration. It could be produced at will by syringing the ear or touching the tympanic wall with a probe. Pflüger[11] saw a woman, age 65, with otorrhea accompanied by dizziness. There was a polypus in the posterior superior part of the meatus, partly attached to the wall of the tympanic cavity. Lateral oscillating movements of the eyes were always produced whenever this was touched with a probe or an attempt made to remove it. Cohn[12] reports four cases of nystagmus with middle ear suppuration. The eye movements could be easily produced by syringing or irritating with a probe. He considers the movements due to a reflex from irritation of the auditory nerve, the inflammation having rendered the endings of the nerve in such a condition as to make this possible.

C. R. Holmes[13] of Cincinnati, reports a case where conjugate deviation of the eyes to the left side, with severe dizziness and vomiting, lasted about two hours after an operation on the mastoid. The attic and antrum had been opened and the stapes mobilized with a probe. The eyes could be moved past the middle line by a severe effort, but would return at once to the extreme position toward the left.

Dr. Spear[14] of Boston, with the assistance of Dr. Chandler, acting upon the statements of Högyes that the semi-circular canals and the vestibular portion of the auditory nerve were a peculiar end-apparatus regulating the movements of the eyes, examined a number of ear cases with dizziness and unsteadiness of gait as to their ocular symptoms. The results of their investigations showed an intimate connection between the sixth nerve and the vestibular portion of the auditory nerve. All patients with dizziness had exophoria of varying degrees dependent upon the intensity of peripheral irritation.

One case, a strong, able-bodied man, had a post-nasal hypertrophy of the right inferior turbinated occluding the Eustachian tube, severe otitis media with a small perforation of the membrane, the exudate causing pressure on the fenestræ, unsteady gait, staggering forwards and to the right. He appeared to have complete paralysis of the internal rectus of the right eye with diplopia, as it was strongly deviated outwards and could not be brought to the median line. After applying cocain to the hypertrophy, in about ten minutes the patient could converge and walk naturally, and the pain in the ear and side of the head ceased. Another case with swelling of the turbinated and closure of the Eustachian tube had a divergence for which prisms had been given. Upon removing the obstruction to the Eustachian tube the movements of the eyes became normal. These cases were undoubtedly due to a spasm of the external rectus muscle from reflex irritation through the auditory nerve as Dr. Spear considered them. Why there was not deviation of both eyes instead of one is hard to explain, unless, as Gowers[3] states, there is a center regulating the conjugate movements of the eyes aside from the abducens nucleus, probably the superior olivary body, slight irritation of which only affects the external rectus, but when the irritation is increased the internal rectus of the opposite side and ultimately the head is deviated.

I have not taken into account here the large number of cases with conjugate deviation due to lesions of the brain, either in the cortex, corona radiata or nuclei. Knies[15] states that conjugate deviation to the opposite side may be produced by irritation of almost any portion of the cortex, but especially the cuneus or occipital lobe, the cortical center for vision, but if the lesion is sufficient to produce paralysis, the eyes will be deviated toward the affected side. But a cortical lesion in this case sufficient to produce a deviation toward the affected side would have been accompanied by some other symptom of paresis or paralysis or have affected vision to an appreciable extent. Of the large number of cases reported with conjugate deviation due to a cortical lesion they were all accompanied by some other symptoms such as deviation of the head, hemiopia or some affection of vision, and paralysis or paresis of the muscles of the opposite side of the body.

A lesion involving the pons or nucleus of the sixth nerve on the same side, could produce these symptoms alone, provided it was slight enough to only produce an irritation, but nuclear lesions are rarely so limited as that. It is not probable that a nuclear lesion could have been present in this case, considering the rapid termination and absence of later trouble.

A basilar meningitis would have affected the nerves during their course and the manifestation would have been that of a peripheral lesion. The sixth nerve would have been affected without the implication of conjugate movement, which is distinctly a cortical or nuclear manifestation.

The occurrence of the facial paralysis is of no special importance, as it occurs very frequently with middle ear suppuration from the extension of the inflammation to the Fallopian canal.

In reporting this case, I do it hoping that while it is unique (as I was unable to find a parallel case in the literature) it may be of service in calling attention to the fact that reflex movements of the eyes simulating paralysis or paresis, may be due to local affections of the ear. While the cases cited here only touch upon certain points, I think they are of service in justifying my diagnosis of a reflex spasm of the ocular muscles due to irritation of the auditory nerve.

[1] Text-book of Eye Diseases.
[2] Text-book of Anatomy, 1893.
[3] Text-book of Nervous Diseases 2d Ed. 1893.
[4] Monatschrift f. Ohrenheilkunde, 1886, Nos. 8 and 9.
[5] Text-book of Ear Diseases, 2d English Ed. 1893, p. 603.
[6] Annales D'Oculistique, 1876.
[7] Archiv für Ohrenheilkunde, 1881.
[8] Archiv f. die Gesammte Physiol. 1881, and Biologische Centralblatt, 1881.
[9] Archiv. für Anatomie und Physiologie, 1881.
[10] Jahresbericht für Augenheilkunde, 1888.
[11] Deutsche Zeitschrift für practische Medicin, 1878.
[12] Berliner klin. Wochenschrift, 1891.
[13] Knapp's Archives of Otology, 1893, No. 4.
[14] Medical News, January, 1892.
[15] Die Beziehungen des Sehorgan und seiner Erkrankungen, etc., 1893, p. 76.

CAN TYPHOID FEVER BE ABORTED?

Read before the Mississippi Valley Medical Association, October, 1893

BY J. E. WOODBRIDGE, M.D.
YOUNGSTOWN, OHIO.

The answer echoed and reëchoed from the great thinkers of the profession we all love and practice, from all over the civilized world, is one prolonged and emphatic negative, nowhere more emphatically spoken than in the great representative body of American physicians—the AMERICAN MEDICAL ASSOCIATION. At its last meeting in the city of Milwaukee the original papers, the discussions on them, and the editorial comments in the Society's JOURNAL clearly indicate this, and that the medical profession is not at all agreed on its treatment. The most divergent methods were advised; some condemned what others strongly advocated, these again advising different methods, only to be condemned again, and all were finally disposed of by the editor of the ASSOCIATION JOURNAL, who under the caption, "The Treatment of Typhoid Fever," says: "In the topic which heads this editorial the medical profession is certainly as much interested as it is in the treatment of pulmonary phthisis. The able papers and discussions which we have presented to our readers in the columns of this JOURNAL, during the past few weeks, have been of great value as reflecting the opinions of active practitioners whose practical experience is of inestimable service to less favored colleagues, yet the fundamental rules governing the management of enteric fever are not modified by these expressions of opinions. Differences in belief may exist, as to whether intestinal antisepsis is desirable or obtainable in typhoid fever, and whether this temperature or that, is to be treated as a dangerous symptom; but the important fact, that enteric fever is a disease in which good nursing and watching are the real factors productive in bringing about recovery, is universally recognized. In typhoid fever, above all other diseases, the physician must recognize that a cure is impossible, that he can guide the patient through the storm, but not stop the storm, that the only object he may expect to accomplish is the control of symptoms which directly or indirectly affect the patient unfavorably.

"While he may not be able to remove the cause of the symptoms, the very relief may be advantageous; then a delirium indicative of great physical or mental distress, or the presence of some complication inducing pain, may so exhaust the patient's vitality as to seriously impair his chances of recovery, and measures directed to the relief of these symptoms may save the particles of strength needed to carry the case over some crisis in his attack. There is, therefore, no specific or routine treatment by internal methods which should be resorted to when the diagnosis of typhoid fever is established, but there are two external methods aside from feeding which may be applied to so nearly every case as to be called routine, namely: absolute rest in bed, flat on the back, and the use of the bath in a more or less modified form; a simple mixture designed to maintain free action of the kidneys or stomach may be advised in each case, chiefly to comfort the patient and his friends, but beyond this nothing is to be used without a distinct indication by some prominent symptom. The necessity of absolute rest in early stages of enteric fever is known to every one, yet it often requires the most strenuous efforts on the part of the physician, particularly if he is not aided by a trained nurse, to maintain the degree of rest necessary. If there is one factor potent in rendering a prognosis unfavorable in enteric fever, it is the neglect of this precaution in the smallest detail, and every rising to stool may be regarded as a most unfortunate cause of future trouble and danger. The use of the bath, or more correctly water in any form during typhoid fever stands next in importance and next in its approach to routine.

"It is a mistaken idea with many physicians that the water treatment of typhoid fever is solely indicated by high fever; nothing can be more erroneous. While high temperature is without doubt a most important indication for the bath treatment, extreme restlessness is also a positive reason for its employment.

"Farther than this, there can be no doubt that the use of water not only lowers extreme temperature, but prevents its rapid return, and in some way advantageously modifies nutritional changes.

"Restlessness and insomnia accompanying fever too slight to require the full bath, are often entirely relieved by a tepid sponging, which soothes the irritated skin, and equalizes the circulation, refreshing and invigorating the patient.

"Each part sponged should be immediately rubbed dry, so that the patient may not be relaxed by soaking. We presume this does not apply to the cases of high fever, in which friction with the hand must be used to bring the blood to the surface where it may be cooled. We have not tried to indicate in this article the medicinal treatment required by various complications, as space forbids, but we are sure that if these views are followed, complications will be less frequent and a firm basis maintained for rational measures sometimes necessary for the relief of accidents."

These are the expressions of the matured thoughts of the members and of the editor of the JOURNAL of that ASSOCIATION, of which one of the leading medical periodicals of Great Britain, a not too partial critic, said nearly a quarter of a century ago: "That it is probably the most learned medical body in the world." I do not believe the great AMERICAN MEDICAL ASSOCIATION has taken any retrograde steps, and I do believe that we may accept these opinions, emanating from its members and from the trusted editor of its JOURNAL as coming, not only from the most learned medical body, but as the expression of the most advanced opinions of the highest medical authority in the world. And yet these are not extreme views. Everywhere you turn in medical literature, you see the same dark and gloomy picture of typhoid fever.

Now and then a new remedy is proposed, or some

one advances slightly more hopeful views, but he and his futile hopes are soon buried in oblivion, and his hapless patient in the ground, and no one dares to say that the physician ought to or can, cure the disease.

I fully realize the responsibility he assumes who would undertake to criticise adversely the teachings of a hundred generations of thinkers. It is said that "old beliefs die hard," and the one I propose to endeavor to destroy has all the charm of extreme antiquity. Long before typhoid fever was isolated from typhus it was taught, as the great teachers now teach, that it could not be cured, but must run its course. Then a new era dawned—typhoid fever was recognized as a distinct disease, and yet the same theory was promulgated, and in almost the same language, used in the teachings of 1893. Time passed; the profession made most wonderful strides in the pursuit of knowledge. It was learned that many diseases, and among them typhoid fever, were due to, or at least accompanied, by a germ in some sense peculiar to themselves, and yet the same teachings were again handed down. Let us take them up with iconoclastic hands, and see if the pitiful story that typhoid fever can not be cured, may not be retold in a more cheerful vein.

On the seventeenth of July, last, I read a paper in my local society in which I said: "Those of you who were present at the meeting of this Society, held in my office twelve or fifteen years since, when this disease was under discussion, will remember that in criticising a paper on typhoid fever I said, that while the paper was in strict accordance with the teachings of the best authorities on the subject, that I thought it was so radically wrong that if you would leave undone everything the author said to do, and do everything he said not to do, you would be nearer my idea of the correct treatment of the disease; which I proceeded to give in detail. It was not, however, well received. The author of the paper condemned it most severely, but afterwards said in the Society that, although he had condemned the treatment in the very strongest language at his command, that I had set him to thinking, and he had searched his library for my authority without finding any; that there was nothing in the books bearing on my theory, but nevertheless I was right, and he would not now dare to treat a case of typhoid fever in any other way. I wish now to call your attention to a few cases, illustrating the most marked results of my work during the intervening years, selecting only such cases as were diagnosed by able physicians; bore such well-marked symptoms characteristic of, or were surrounded by such circumstances, as would indicate beyond the possibility of a doubt, that they were true typhoid fever.

At this point I wish to express my regret that of my earlier cases no bedside charts were kept. No idea had entered my mind of inflicting my theories upon an already over-worked profession.

The bedside charts of the later cases are in my possession and open to the inspection of any member. The limits of this paper will, however, only admit of the presentation of the most salient features of those cases which best illustrate a point. And in estimating the value of the cases, you will please bear in mind that none of the teachings of the editorial were followed in my practice. Patients were allowed to get up, or move about, or go out of doors at pleasure. Nurses, trained or untrained, were allowed to sponge them or not sponge them. No other baths were given, except to meet the ordinary demands of cleanliness.

Very little effort was made to "control symptoms." No "simple mixtures designed to maintain free action of the kidneys or stomach chiefly to comfort the patient and his friends" were ordered. No medicine was ever exhibited for the purpose of directly reducing temperature, and while the patient and his attendants were generally cautioned against the danger, real or supposed, of eating solid food, the warning was not always heeded, some eating on the seventh to twelfth day; others all of the time.

On July 17, 1882, I was called to see Dr. Ferran's son after the attending physician had made a diagnosis of typhoid fever. He made a complete recovery in twenty days. His temperature having been nearly normal for several preceding days.

A young gentleman died of typhoid fever on Rayen Avenue. Clara Potts lived in the same house and assisted in taking care of him. Three or four days later I was called and made a diagnosis of typhoid fever, and answering direct questions, I said she would probably be well in ten or twelve days. Later I was told that another physician had made a previous statement, that the girl had typhoid fever and would be ill four or five weeks at the least. Her temperature went up to 104¾. Tympanitis and rose-spots were well marked. She made a good recovery and drove out on the twelfth day.

The wife of one of our leading druggists, W. W. McKeown, had typhoid fever. She made a good though not very rapid recovery. Mrs. Johnson Wick and her son both had typhoid fever; recovery in eleven and fifteen days respectively.

Last winter when typhoid fever was so fatal at Beaver Falls, Mr. Louer, Jr., was brought home with the disease from which he recovered in twelve days.

Ulysses Speer was brought home from a boarding house in Wampum, where at least one death had resulted from typhoid fever. Dr. Wickham made a diagnosis of the disease and treated him three days, when I was called. I found a well-marked and typical case of typhoid fever with a history of ten days' sickness. Temperature 105 4-5; pulse 124; bowels very tympanitic, petechia abundant, tongue brown, hard and dry, stupor so profound that he could with difficulty be sufficiently aroused to show it. My first visit was made on October 25. The last on November 3, when he was sitting up. On November 10 he called at my office and settled with me.

When typhoid was so prevalent and fatal near the corner of Bryson and Spring Streets, I was called to see the two daughters of Jos. Dore, diagnosed as typhoid fever by a nurse of long experience in the disease; found both cases well marked. Both recovered in less than ten days. John H. Walker, who lived in the same locality made a good recovery in ten days. His symptoms were well marked.

Thomas Evans of Girard, came to my office. After examining him two or three times I told him he had typhoid fever. When he told me that his wife was very sick, I gave him medicine for her and himself and told him to send her to me as soon as possible. The next day I found her lying on the sofa in my office, having come by train five miles. Her temperature was 104¼; bowels very tympanitic and tender, and all symptoms pointed to a very severe attack of typhoid fever. She was told to come each alter-

nate day to my office, as was also her husband. The latter was permitted to work at his usual occupation, that of a stationary engineer, throughout his illness. After a few days, Mr. Evans told me that the doctors in Girard were laughing at him for going away from home to a —— fool of a doctor who would tell him that he had typhoid fever and could work. I asked him if they doubted his ability to work. He said: "No, they know I can work; they say I have not had typhoid fever." I told him that if that were true, when he and his wife recovered, that would be the end, while if they had typhoid fever there would be more cases around them. Within a few weeks thereafter, I was called in consultation to nine or ten well-marked cases along the Little Valley in which they lived, and all within a stone's throw of their home. After several had had hemorrhage of the bowels, and four or five had died, there was no further question as to the character of the disease.

The President of this Society can tell whether some of these cases were typhoid fever or not. So, also, can the distinguished ex-President of the Ohio State Medical Society now present. Mrs. Evans was not able to come regularly, but had occasionally to miss two days at a time. She was refused passage by one of the railroad companies, and had to travel by the less convenient route.

On May 8, 1893, I was called to see G. W. Powers near North Jackson (whose son had just died of typhoid fever after repeated hemorrhages of the bowels) and found that Mr. Powers (who had nursed his son thirty-five days) had himself been ill with typhoid fever seven days. I assured him that he was in no danger of dying and that he would probably be well in ten or twelve days. He had a normal temperature on the tenth day.

On May 27, I was called again to North Jackson to see Wallace Eckenrode (the son-in-law of the last case) who I believed had typhoid fever, a belief which was not shared by his family physician who promised if I would leave the case in his hands, to telephone me within two days. I heard nothing more of him until I saw the notice of his death, from typhoid fever, in the local paper.

Prior to the date at which this series of observations begins, I had had large experience in the treatment of typhoid fever with unsatisfactory results, and when I listened to the papers read in the Section of Practical Medicine, at the AMERICAN MEDICAL ASSOCIATION in Washington, I was reminded most forcibly of these earlier experiences, and my imagination pictured them in sharp contrast with the happier results of later years; and wishing that others might share with me the pleasure of curing so dread a disease, and that humanity might benefit by any knowledge I might possess, I told the Chairman of the Section, Dr. Victor C. Vaughan, that if possible I would prepare a paper and read it in the Section before adjournment, advising a more hopeful method of treatment. My work on the committee for reorganization of the Section, however, took so much time that the preparation of a paper was an impossibility. On the last day of the meeting Dr. Vaughan reminded the Section of my unfulfilled promise. I then said I hoped to be able to present the paper on the treatment of typhoid fever at the next meeting. Anxious to present a good array of aborted cases with their treatment, I availed myself of the opportunity of criticizing a paper on the treatment of typhoid fever, read in my local Society, and, after condemning some of the remedies advised as worse than useless, since they tended to aid the disease to destroy the patient, (a criticism justly applicable to many of the methods of treatment advised by some very learned professors) said, that having long believed the disease to be due to a germ whose earliest habitat in man was the alimentary canal, that the logical conclusion was that gastro-intestinal asepsis should be the prime object of treatment, and when it could be obtained the problem of the abortive treatment of typhoid fever would be solved; that I believed I had already attained it, and that if any member of the Mahoning County Medical Society would aid me in making a demonstration, I would not only provide medicine and treatment free of charge, allowing all fees to go to the said members, *but that I would pay him a dollar and a half for each day of treatment after the tenth.* I then consulted the President of the Ohio State Medical Society, as to the advisability of publishing a paper on the treatment of the disease, and was advised not to do so until I had demonstrated to the profession that the methods in vogue could be improved upon.

On receipt of a letter from the Mayor of the City of New York, I went there and spent a week seeking an opportunity to demonstrate the curability of typhoid fever, under the observation of some of the learned professors of the metropolis. Failing, I returned home discouraged. I tried Philadelphia next, and for ten days devoted myself to a fruitless effort to have some one give my method a trial without publishing a treatment that might prove valueless or misleading. Again I returned to my home, this time most heartily discouraged. Believing myself to be able to cure the most fatal disease of the Mississippi Valley, I did not dare to give to the world a treatment that on more thorough trial might prove to be a failure in the hands of more able but less enthusiastic practitioners, and the action of which I could not then and can not now explain. After this I corresponded with the health departments of all the principal cities in the United States and Canada, and to the honor of these gentlemen be it said, not one failed to give me all the information in their power; often at an outlay of great labor and no doubt considerable expense. I give them, one and all, most hearty thanks. During the intervening years, I visited the most important cities from Potomac to the Pacific coast. In Pittsburg, in St. Louis, in Washington, I gave the principals of the largest hospitals, where typhoid fever was treated, the best knowledge I possessed at the time. They politely promised to try it and probably forgot all I had said before dinner. In Chicago, I succeeded in interesting the Commissioner of Health, Dr. John D. Ware, who asked me to give him a letter that he could show to the superintendents of the hospitals, and as this letter and the answer may become, in the future, interesting reading I present them here:

YOUNGSTOWN, OHIO, May 5, 1892.

JOHN D. WARE, M.D., Commissioner of Health, City of Chicago.

My Dear Doctor:—You are well aware that in writing in fulfillment of my promise to you, and giving expression to my peculiar views of typhoid fever, I am winning for myself the uncoveted cognomen of "crank."

You will remember I told you that I believed the life of every uncomplicated case of this dread disease could be saved; that I believed the disease could be aborted, and that I believed the excreta from properly treated cases of typhoid fever would prove to be innocuous. Long before I

even hoped for such results I believed that the disease was due to a germ; that the germ was, in the earlier stages of the disease, confined to the alimentary tract; and that if the entire tract could be saturated with a germicide at once fatal to the germ, and harmless, or better still, beneficial to the patient, the happiest results would follow.

That I have for fifteen years been doing all this without having published a word about it, should not be a discredit to me since it has taken years of testing to satisfy even myself, and no one likes to have to eat his own words, especially after they have gone into cold type.

Now, Doctor, if you can, as soon as possible, secure a ward for male and one for female patients, with a day and night nurse for each ward, and give me as many cases as possible, none of which have had the disease more than eight days, I will go to Chicago and appear before a committee of your selection, consisting, of course, of members of the regular profession upon whose judgment and integrity you could rely; explain to them fully my plan of treatment, and if they find any medicine that I wish to administer is in the proper dose dangerous, they shall refuse permission to make the test, but for no other reason; you to invite any members of the regular profession, as many as you wish, to watch the patients from day to day, and if my test is entirely satisfactory I am to have the privilege of giving the treatment and the results of the test to the profession through the AMERICAN MEDICAL ASSOCIATION.

Very respectfully, JOHN E. WOODBRIDGE.

CHICAGO, May 27, 1892.

JOHN E. WOODBRIDGE, ESQ., 29 W. Federal St., Youngstown, Ohio.

My Dear Doctor:—Your letter of May 5 arrived while I was away from the Department sick. I did not return until the 20th, and have endeavored from that day to this to interview the physicians at different hospitals relative to the subject matter of your letter.

Replying I will say, I have visited the superintendents with whom I thought possibly I might prevail upon to coincide with our views relative to treatment of typhoid fever. I have also talked with some of the prominent men in the profession, and I believe without a single exception each and every one of them have said this: "Why does not Dr. Woodbridge read his paper before the NATIONAL ASSOCIATION next June?"

I have said all that I could say relative to the subject, which is one that I have become deeply interested in, but being only one man it has been impossible apparently to make any impression upon the members of the profession.

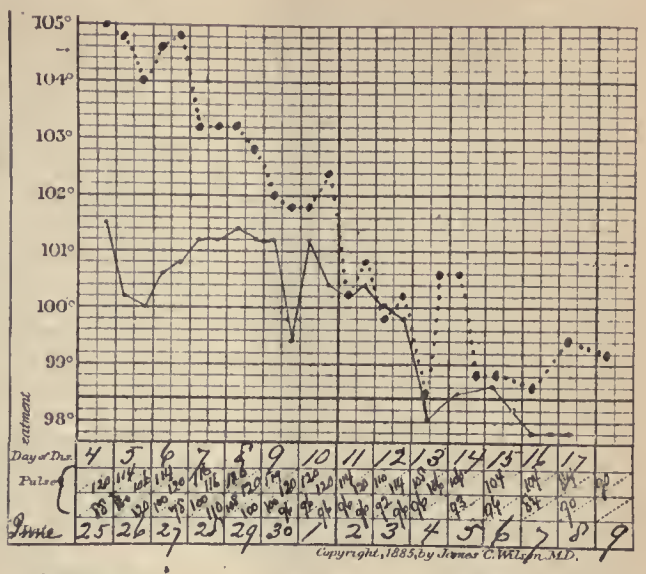
By reading between the lines you will probably understand more than is written. I do sincerely hope that you will read this paper before the NATIONAL ASSOCIATION as I believe that it would result in a revolution in the treatment of this disease. No one would dare question your paper so far as your results in the past have been concerned, no matter how skeptical they might be in some other matters.

Trusting that you will pardon the delay in replying, I am, sincerely yours, JOHN D. WARK,

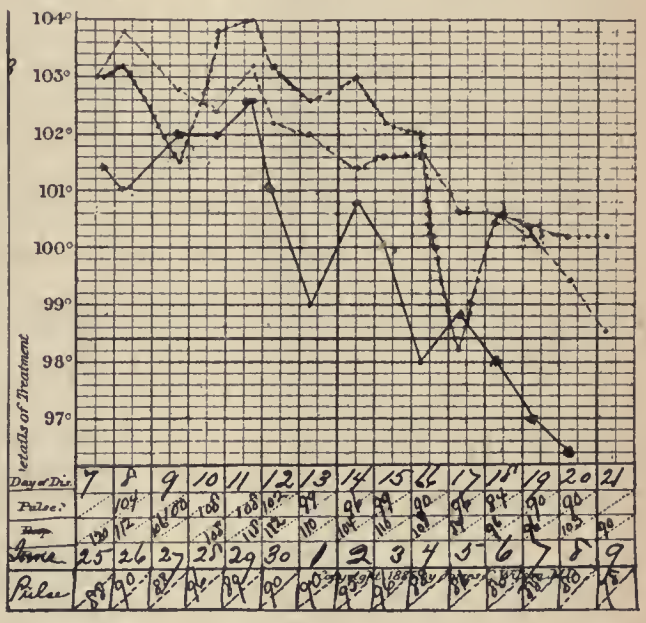
Commissioner of Health.

Finally, after having spent years of valuable time, much money, and traveled many thousands of miles, I heard of the epidemic of typhoid fever at Ironwood, Mich., and although I had been too busy to go to the Milwaukee meeting of the AMERICAN MEDICAL ASSOCIATION a few days before, I again sacrificed both time and money, and in a day was on my way to the scene of the worst epidemic of which I have any knowledge. It presented largely the characteristics and symptoms so common in our sporadic cases. In some cases, however, the poison seemed to be so virulent as to lead one to despair almost from the very outset. A good representative of this class was Miss T. S., No. 22, whose bedside chart I hand you.

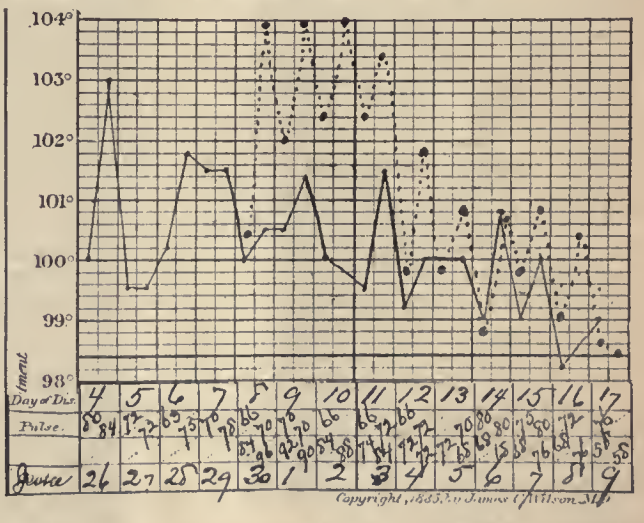
When seen on June 25, 1893, her pulse, as you will see, was 120; her temperature 105; her bowels were intensely tympanitic, marked dullness over the spleen, tongue dry, hard and brown, slight wandering delirium, which soon became so profound that we were unable to take her temperature under the tongue again for several days. Altogether her con-



Case No. 22, ... Case 23, .———. Diagnosis, typhoid fever. Names T.S. and P. S.



Case No. 25, .—.—.—. No. 27, ... No. 28, .———. Diagnosis, typhoid fever. Names, Mrs. S., Mr. S., Miss S.



Case No. 29. No. 30, .———. Diagnosis, typhoid fever. Names, J. A. and C. E, Cured in thirteen days.

dition was so bad that her attending physician, Dr. McLeod, a physician of marked ability, after the examination was completed turned to me and said: "You don't want that girl; she will die." I answered: "Not if I treat her." After our second or third visit, Dr. McLeod said, as we went away: "If you can cure that girl you are a dandy." Her temperature touched normal on the tenth day, but before she began to improve on the night of the third day, Dr. McLeod came to my hotel to tell me that she was exceedingly delirious, pulse 140, temperature, as well as could be taken in the axilla in her extremely restless condition, was $104\frac{4}{5}$, that her bowels were exceedingly tympanitic, and she was bleeding so profusely that he had to plug both posterior and anterior nares.

In the same room with T. S., No. 22, lay her sister, P. S., No. 23, taken sick at the same time; an equally typical though milder case; her temperature, as you see, was never high and was lower than normal on July 4, the ninth day of treatment.

The chart of Mr. F. S., No. 24, is very interesting as showing the result of treatment against continual reinfection. The case bade fair to be a very severe one, but the temperature of $103\frac{1}{5}$ of June 26, dropped to $99\frac{2}{5}$ on the 30th, and again rose on discontinuing treatment to $104\frac{4}{5}$ on July 2, when investigation showed that he was drinking water from a well from which a dozen very severe cases had originated.

Mrs. M. T., No. 25, temperature in the afternoon of June 25 was 103; the morning of June 26 was $103\frac{4}{5}$; was normal on July 9.

C. O., No. 26, on June 26, temperature 101; July 4, $98\frac{1}{2}$.

M. T., No. 27, on June 25, had a pulse of 120, temperature 103; on July 5 had a pulse of 84 and temperature $98\frac{4}{5}$.

Mrs. T., No. 28, on June 25 had a temperature of $101\frac{5}{10}$ which was reduced on July 4 to 98.

C. E., No. 29, on June 30 at 10:30 in the morning had a temperature of $100\frac{2}{5}$; in the evening the temperature was $102\frac{8}{10}$, and again at 8:15, $103\frac{6}{10}$, and on July 8 was reduced to $98\frac{3}{5}$.

J. A., No. 30, on June 26 at 7:30 P. M., temperature 103; on July 8 at 10 A. M., had a temperature of $98\frac{1}{5}$.

Mrs. L., No. 31, June 25, pulse 96, temperature 102; on July 5, pulse 72, temperature $98\frac{3}{5}$.

E. T., No. 32, June 25, temp. $101\frac{3}{5}$; on July 8, $98\frac{1}{2}$.

Mr. M., No. 33, June 25, in the morning temperature 102 and July 9, $98\frac{1}{2}$.

A. O., No. 34, June 28, pulse 120, temperature $103\frac{4}{5}$; July 8, pulse 72, temperature $98\frac{3}{5}$.

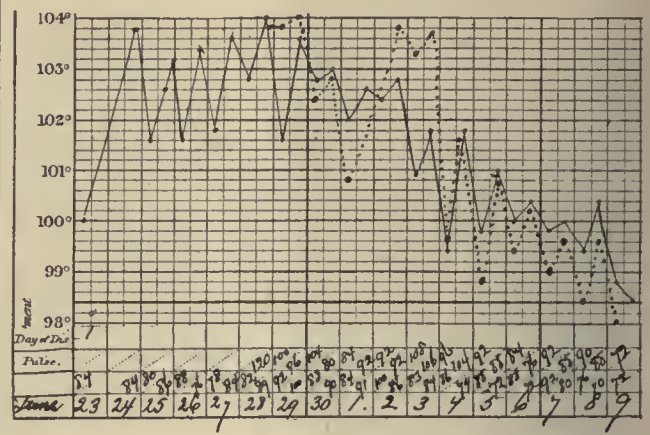
E. O., No. 35, June 23, temperature $103\frac{8}{10}$; July 9, $98\frac{8}{10}$.

G. T. G., No. 36, admitted June 26, highest temperature 104; July 9, temperature 97, pulse 76.

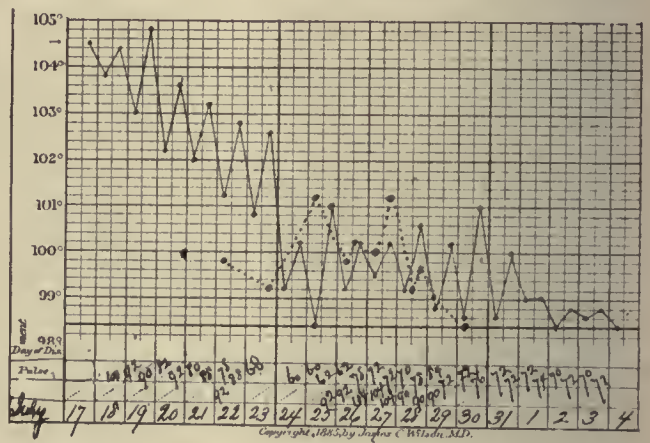
John A., No. 37, chart says that he had been sick three days when admitted on June 24. His treatment may be regarded as a failure. His temperature was $100\frac{6}{10}$ when last seen on July 9. He had probably been ill longer than we had supposed.

We made two or three such mistakes. One of the cases selected on the supposition that he had been ill less than eight days, was found to be dying of perforation of the bowels when we went to him to administer the first dose of medicine. Another case, after having been put under the treatment, showed conclusive evidence of having been well along toward perforation; died a few days later.

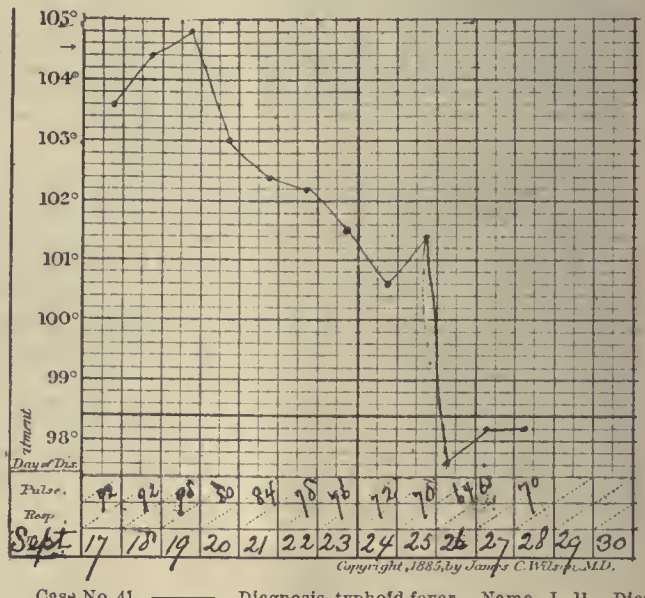
These records were kept by the physicians attending the patients, and by the trained nurses in the Typhoid Fever Hospital. The physicians were all gentlemen of unusual ability, and of very large



Case No. 34, ... No. 35, .———. Names, A. O. and E. O.



Case No. —, ... No. 38, .———. Names, E. M. and Mrs. M



Case No. 41, .———. Diagnosis, typhoid fever. Name, J. H. Diet: Ate beefsteak on the seventh and eighth days of treatment, milk diet on the ninth, and solid food thereafter.

experience in the diagnosis and treatment of typhoid fever. Dr. McLeod, the able Superintendent of the Union Hospital, is a gentleman who would be an

ornament to the profession of the world's most enlightened capitals. Dr. Niven, the Health Officer of the city, is a gentleman whose skill and ability were factors of prime importance in fighting this fearful epidemic. Under his magic touch, the conception of to-day became the finished work of tomorrow, and the Armory, resounding to-day to officers' commands, became a hospital for typhoid fever, perfectly equipped under his able superintendence, and instead of echoing to the soldier's martial tread, the soft footfalls of a corps of trained nurses scarcely broke the silence. It is enough to say of the nurses that they were trained in the city of Chicago, and it was the freely expressed opinion of both physicians and nurses that they had never seen typhoid fever patients do so well or feel so well. I present here a letter voluntarily handed me by Dr. Niven:

IRONWOOD, MICH., July 9, 1893.

This is to certify that all the patients whose bedside histories are in the hands of Dr. Woodbridge, were diagnosed as typhoid fever by Drs. McLeod, Niven, Holmes and Woodbridge, in the city of Ironwood, State of Michigan, and that they were all under Dr. Woodbridge's special treatment, no other medicine being exhibited during their sickness.

I also can state that in no case did any serious condition arise, as did in other cases treated side by side by the same physicians with the older, most approved methods of modern treatment.

J. K. NIVEN, M.D.,
Health Officer of the City.
Physician-in-Charge of Typhoid Fever Hospital.

On the day my paper was read in my local society, I was called to see Ed. M., No. 38, whose chart is offered. I found him with a temperature of 104½. The next day it was 104 2-5, and the day following, 104 4-5, from which time it gradually declined to normal the morning of the eighth day, although he had a slight rise of temperature for several days thereafter; he walked out on the eighth day; ate a slice of bread on the tenth day for supper. For breakfast on the eleventh day ate two slices of bread, two eggs and two cakes, and continued eating heartily from that time.

On July 24, his little son was taken sick and on examination gave the following register: temperature 104 which rose to 105, pulse 112 which was at one time 160, his bowels became intensely tympanitic, petechia appeared in profusion, and all symptoms pointed to an exceedingly severe attack of typhoid fever. Turning to Mr. Madden, with the thermometer in my hand indicating a temperature of 105, I said: "Fifteen years ago, had you been lying there with typhoid fever, your wife showing well-marked symptoms of the disease, and these symptoms present in this boy, I should have said sadly: 'he is very ill with typhoid fever; he will probably be sick four or five weeks or longer;' and if asked for a prognosis would have said: 'he is in great danger;' now I cheerfully say: 'He has typhoid fever; will probably be sick ten days or two weeks and may be mildly sick somewhat longer. There is no danger.'"

These cases were examined at various times by Dr. H. H. Hahn, Dr. Thomas, and Dr. Gibson, President of the Mahoning County Medical Society, and positively diagnosed as typhoid fever. You will find their statements on the charts.

On Aug. 11, 1893, I was called to see Lizzie, No. 39, who had been sick a few days prior to August 1 when she first consulted a physician, who reported a temperature of 103 on that day, and treated her four or five days, when another physician was called who had not fully made up his mind whether she had typhoid fever or not. When I was called I found a temperature of 104½; I hesitated whether to attempt antiseptic treatment at so late a day; for six days the afternoon temperatures were 104½, 103½, 103¼, 102 3-5, 101¼, 101 1-5, when the evening temperature was 100 1-5. The improvement in the patient's general condition, however, was greater than the fall in temperature would indicate. She became cheerful, complained of hunger, and wanted to get up; the bowels which were tender and very tympanitic lost for a time all tenderness and tympanitis. Both, however, returned in a slight degree after a few days, and the temperature remained above normal for two or three weeks, all antiseptic treatment being abandoned after the twelfth day. This case is interesting as showing the effect of what I believe to be germicide treatment, even when too late to abort the disease. While visiting this patient I was called next door to see the daughter of ex-Marshal Crowley, symptoms of typhoid fever well marked, temperature 103, pulse 112. She recovered in less than a week.

On Sept. 17, 1893, I was called to see J. H., No. 41, positively diagnosed as typhoid fever by three or four physicians. His symptoms were well marked, and petechia very abundant. His pulse and temperature ran a very common course; I give them daily under the dates: September 17, temperature 103 3-5, pulse 92; September 18, temperature 104 3-5, pulse 92; September 19, temperature 104 4-5, pulse 98; September 20, temperature 103, pulse 80; September 21, temperature 102½, pulse 84; September 22, temperature 102 1-5, pulse 78; September 23, temperature 101½, pulse 76; September 24, 100 3-5, pulse 72; September 25, temperature 100 3-5, pulse 70; September 26, temperature 97 3-5, pulse 64; September 27, temperature 98½, pulse 68; September 28, temperature 98 1-5, pulse 64. On September 29, this patient's brother living in the same house was taken ill and is now lying sick with typhoid fever. I will give his chart in a future paper, as also six or eight other cases now under treatment.

On Sept. 23, 1893, I was called to Washingtonville, to see William Walters, sick with typhoid fever, diagnosed by his attending physician, Dr. Powers, confirmed by Dr. Bertelott in consultation. His temperature was normal on the twenty-ninth, and so continued to the last.

These cases comprise all of the worst cases and worst results I have had in my private practice for more than twelve years, during which time I have had no death from typhoid fever, and I have had a large number of cases recover in from three to twelve days without showing pathognomonic symptoms of the disease. I therefore believe thoroughly in asceptic-izing the alimentary canal at the earliest possible moment in all suspicious cases.

Keenly alive to the ignominy and disgrace that await me, should future observations contradict the results and conclusions of the past; aware too of the danger of the too implicit reliance on a limited number of observations, and with all due respect for the teachings of the great thinkers of the profession, whose wisdom has with strange unanimity taught the contrary, I yet wish to answer my question: "Can typhoid fever be aborted?" in the affirmative.

ACUTE INTESTINAL OBSTRUCTION—ANASTOMOSIS WITH MURPHY'S BUTTON—RECOVERY.

BY A. H. CORDIER, M.D.

CLINICAL LECTURER ON GYNECOLOGY KANSAS CITY MEDICAL COLLEGE; MEMBER AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS, ETC.

KANSAS CITY, MO.

Henry Binford, Nashville, Tenn., age 22. Some two years ago this young man had an attack of peritonitis, the origin of which, from his vague history, I am unable to obtain. Since that time he has had to be very careful with his diet, lest he bring on an attack of "colic." He has a slight "pulmonary trouble," leading to a suspicion of a tubercular peritonitis origin. On November 5, 1893, while on the street, he was taken with a severe pain in the region of the umbilicus, the intensity of which caused him to consult Dr. Chas. Lester of this city, who prescribed the usual antispasmodics and anodynes to relieve an intestinal colic, due to indigestion, and directed him to go to bed. The pain continued with unabated severity, and the doctor was called to see him, and prescribed salines to rid the bowel of the offending agent causing the suffering. His previous attacks had been of a similar character, indicating that there existed, and had for at least two years, a partial intestinal obstruction. (About 68 per cent. of the complete cases show previous manifestations of the existence of an incomplete constriction, and 32 per cent., previous history of peritonitis).

The Epsom salts brought no results and the pain continued with increased severity, accompanied by marked prostration, a tympanic abdomen, etc., evidences of injury to the abdominal sympathetic system, and paretic or obstructed bowels. The bowels refusing to act, large enemas were given with the result only of emptying the colon of gas and some fecal matter. He remained in this condition, continually growing weaker, up to the time I was called by Dr. Lester to see him. I found him with the peculiar pinched-looking countenance so often seen in intra-peritoneal injuries or acute inflammatory conditions. His temperature was 97; pulse 120, when I first saw him. This was November 15. Had been vomiting fecal matter frequently. An operation for the relief of the obstruction was advised at once, but valuable time was wasted in telegraphing his relatives in Nashville, Tenn., for advice as to whether the operation should be performed at once or delayed until their arrival.

I saw the case again the next day, and we decided that if anything was to be done it must be done at once or not at all, regardless of the absence of his relatives. At this time, November 16, he had well-marked evidences of intestinal perforation, as the liver dullness was absent, and his condition was that of shock. Temperature, 96.5 F.; pulse 140; delirious. I operated as soon as he could be removed to the hospital, Drs. Griffith and Lanphear assisting. Dr. Lester administered the anesthetic, ether, one-tenth grain nitrate strych. was given hypodermically, before beginning the ether. Every preparation was completed before administering the ether, that the anesthesia might be short, as these cases bear "chronic surgery" and prolonged anesthesia badly.

A median incision was made. On opening the peritoneum, intestinal gases with some fecal matter escaped through the incision. The bowels had perforated some time before, as evinced by absence of liver dullness and symptoms of profound shock, before the operation. The bowel above the stricture had partially emptied itself into the peritoneal cavity. A paretic intestine does not contract rapidly when opened, and in these cases there is always partial paralysis of the bowel above the constriction. Some little difficulty was experienced in keeping the bowel from rolling out through the incision.

Many recent adhesions were found in the pelvis and right inguinal region. I found a very hard vascular band running from near the right internal inguinal opening, attached to the abdominal parietes, running upward and inward toward the umbilicus, crossing a coil of the ileum and attaching itself to a coil of the small bowel higher up. It was at this point that the perforation was found—due to the taut state of the band. The band being anchored at one extremity and pulled on by the enormously distended bowel to which it was attached, and across which it pursued its course, caused the walls of the gut to give way at its intestinal attachment.

My diagnosis had been strangulation by a band of a coil of the ileum. Coils of the ileum, from their location in the pelvis and proximity to the appendix, are more likely to be strangulated by bands than other parts of the intestinal tract. This is easily understood in the present pathologic knowledge of pelvic peritonitis and inflammatory diseases in the region of the vermiform appendix.

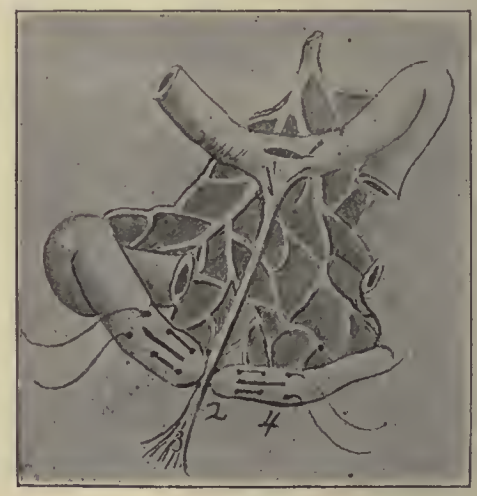
It was at the point where the band crossed the ileum that the stricture was found. The constriction was circular and complete and of long duration, the complete occlusion being of late origin. In these old partial strictures from a band or other cause, if for any reason there be a rapid and large increase of the gases in the gut the pressure thus produced on the blood vessels may convert the case into an acute and complete obstruction.

After closing the perforation with silk I ligated the band in two places, and divided it between the ligatures, thus liberating the adherent and strictured gut, so that it could be brought up into the incision. I quickly decided to do an anastomosis (lateral) using the Murphy button. The strictured part of the gut being of a non-malignant character, it was left undisturbed.

The intestine was emptied by "milking" away from the stricture, and the Murphy clamps applied to the convex borders or surfaces of the bowel, above and below (three inches). Having introduced the "puckering" sutures the stricture was incised, button halves introduced, ligatures tied about the stems and the halves clasped together. "I pressed the Murphy button, and left it to do the rest." (See cut).

The peritoneum was thoroughly irrigated with gallons of hot sterilized water, and a drainage tube introduced to the bottom of the pelvis. The patient was put into a warm bed and the nurses instructed to empty the tube each half hour.

No morphin. During the thirty minutes occupied in doing the operation he took very little ether. At no time following the large dose of strychnia (one-tenth grain) was there any muscular twitching.



1.—Site of intestinal rupture. 2.—Location of stricture.
3.—Band taking its origin at internal inguinal ring.
4.—Location of lateral anastomosis.

It was noticed during the operation and after clasping the button, that the larger gas-filled gut above the stricture contracted enough to empty itself, (in part), through the stem of the button, into the bowel, below the stricture. The glass drainage tube continued to do its work, by removing the septic material as fast as it gravitated to the bottom of the pelvis.

Up to the morning of the 18th, when at two o'clock, during the absence of the nurse he pulled the tube out, his temperature was normal. Within six hours from that time it rose to 103 F., and his pulse increased from 84 to 120, showing that the drainage tube does drain, and that patients may suffer much risk when the indications for its use are present and are not heeded.

I cut the sutures in lower angle of the wound (abdominal) and with a tissue forceps introduced into abdomen through the tube opening, dilated the incision and irrigated the lower peritoneal cavity with hot boracic acid solution, and finished with pure peroxid of hydrogen, introduced strips of iodoform gauze as far as possible, to act as a capillary drainage—a poor substitute for the glass drain. The tube could not again be introduced without guiding it to the bottom of the pelvis with the fingers. This would have necessitated the administration of an anesthetic.

After the washing his temperature fell to 99.5 F., and pulse to 96, but his bowels were distended with gas and caused him much pain. This was relieved by a large warm water enema to which was added two or three drams of turpentine, and an ounce of glycerin. This enema brought large quantities of gas and copious liquid stools. The first movement of the bowels took place three hours after the operation. He was from the day of the operation ordered nutrient enemas each four hours. Liquid diet.

Following the removal of the tube he became quite delirious, and remained so for two days. The protracted vomiting, so prominent at the beginning of his illness, ceased from the day of the operation.

There are several features in this case deserving special notice, as to the etiology, history, pathology, treatment and sequelæ. As a causative factor of the original attacks of peritonitis, appendicitis may have been its source, but I am inclined to doubt this as a cause, as his history does not warrant such a conclusion. The appendix was perfectly free and sound. He had an attack of typhoid some years ago that may have given rise to a perforation at a Peyer's patch and led to a protective localized peritonitis, (adhesions) but recognizing the fact that a typhoid perforation usually takes place at a late stage of the disease, when the patient is in a poor physical state to resist such an accident, and that typhoid perforations are almost invariably fatal, I believe that this disease may also be justly eliminated in the consideration of the causes. I could obtain no history of any injury, such as a kick, fall or blow.

Since early childhood he has had the habit of biting his nails and swallowing the little sharp pieces, and to this dangerous practice of taking into the stomach these sharp and indigestible foreign bodies, I am inclined to attribute his former attacks of localized peritonitis, and the invariable after and dangerous adhesions.

His history of recurring attacks of colic, and other symptoms of a partial intestinal occlusion, may be easily understood when one is acquainted with the symptoms of a partial occlusion from a band or stricture. Any undigested substance of a solid character may produce by its presence at the site of a partial occlusion, a complete obstruction, or by its presence act as an irritant, thus producing an inflammatory edema, or obstruction to the return flow of blood, and convert an incomplete into a complete occlusion. An intestine distended with gas in a case like this, may, where the band is anchored, by pulling on the band, produce a complete strangulation or occlusion of the intestinal canal.

It is worthy of note that the adhesion had produced a rupture at its intestinal attachment, and that fecal matter and intestinal gases were set free in the peritoneal cavity. It is rare for the peritoneum to tolerate the presence of this form of septic material, for as many hours as elapsed in this case from the beginning of the attack to the period of the operation. It is remarkable that the contractile powers of the semi-paretic gut were regained so soon after the operation. The post-operative history of the case illustrated that the nausea and vomiting in strangulation of the intestines is due as much to the non-elimination of septic material in the bowel, and to the great distension of the intestines, as to the injury sustained by the sympathetic system at the point of constriction, as is claimed by some authors. The results of the treatment in the case, lend encouragement to operate on all cases of a like character, regardless of the seemingly unfavorable, and almost hopeless general condition of the patient. The utility of drainage was demonstrated by the bad symptoms (temp. 103 F.) following the removal of the tube by the patient, and the good results that may be obtained by early flushing, in a threatened septic invasion of the peritoneum.

The Murphy button undoubtedly was the best device to use in this case, as the time occupied in doing the operation was of vital import to the patient, in his desperate state.

The stricture, being non-malignant, was left. That portion of the bowel between the location of the button and the stricture will soon atrophy, and by its presence cause no harm. The button, up to the fourth week, has not passed. Its non-soluble character is, in my mind, quite a serious objection to its use. Should the button at any time give rise to alarming symptoms by its detention in the bowel, its removal by another operation will come up for consideration. It could be done by dividing the gut near the location of the button, and removing it through the slit, and closing the opening with a few Lembert sutures.

The diagnosis of intestinal obstruction by a band was made by Dr. Lester before I saw the case, and an operation urged by him early in the attack.

GASTROSTOMY BY WITZEL'S METHOD FOR PRIMARY CANCER OF THE ESOPHAGUS.

Read in Philadelphia Academy of Surgery.

BY WILLIAM W. KEEN, M.D.

PHILADELPHIA.

PROFESSOR OF THE PRINCIPLES OF SURGERY AND OF CLINICAL SURGERY, JEFFERSON MEDICAL COLLEGE.

The patient, S. S. aged 48, occupation puddler in rolling mills, was admitted to the Jefferson Hospital July 31, 1893, at the request of Dr. A. G. Miner of Niles, Ohio. His father died of asthma, his mother of cancer of the breast. He has always had good health with the exception of an occasional brief attack of rheumatism. For the past thirteen months he has experienced trouble in swallowing; seven months ago he could swallow solid food without much discomfort, but now can swallow nothing but liquids. He states that the constriction came on gradually and that he noticed from time to time the lessening of the caliber of his esophagus. When he takes nourishment he feels first an impediment to the passage at a point corresponding to the sterno-clavicular articulation; then the food passes with comparative ease until it reaches a point which corresponds to half an inch above the lower end of the ensiform appendix. Here he says he can feel a distinct obstruction, and while the food is passing this point he experiences pain in the median line posteriorly, under the inferior angles of both scapulæ (more severe under the left), in the epigastric region, though slight, and in the precordial region. The pain is darting in character.

During the past four months he has had slight attacks of hematemesis. On July 27, 1893, he lost considerable blood, enough to make him faint, but he attributes this to the introduction of an esophageal bougie. He has had gradually increasing emaciation, and has lost forty-nine pounds in the last thirteen months, his weight in June, 1892, being 168 pounds, and in July, 1893, 119 pounds. During the last ten weeks he has had œsophageal bougies passed

twice a week. On July 31 I passed a No. 3 rectal bougie through the stricture.

He has never swallowed any corrosive fluids, and has had no traumatism. He does not indulge in alcoholic stimulants stronger than beer, and limits this to two or three glasses a day. He denies all history of syphilis. His appetite is impaired, tongue coated and bowels constipated. The urine is negative.

There was a resistance in passing the esophageal bougie (circumference 4.2 centimeters) at ten and a half inches from the teeth, and at twelve inches the bougie would not pass.

Operation, Aug. 2, 1893. An incision four inches long was made, beginning at the middle line and running to the left, a finger's breadth below the border of the ribs. The muscular fibers of the rectus were separated by the fingers and not divided. The liver was seen as soon as the peritoneal cavity was opened. Two fingers thrust in, however, very readily seized the stomach. This was brought forward and outside the wound, the margins being packed with gauze. A rubber tube, five inches in length (Size 25, Fr. catheter scale), was introduced into the stomach and infolded by two rows of Lembert sutures, after Witzel's method. The opening in the stomach was made toward the cardiac extremity and the tube lay parallel to the external wound, its external end emerging near the median line. Three stitches were now inserted into the walls of the stomach but not tied before it was returned to the abdomen, their needles being left threaded. As soon as the stomach was returned these needles were thrust through the abdominal wall and the stomach brought up to the margin of the opening. The tube was retained in place by a catgut stitch passed through the wall of the stomach and through a part of the wall of the tube so as not to open its caliber. About one inch of the tube was thrust into the stomach. The edges of the abdominal opening were now sutured by silkworm gut and the ordinary dressing applied. A clip was placed on the tube to prevent the escape of the contents of the stomach.

Sept. 28, 1893. The patient made an excellent recovery, without incident, excepting in one respect. On the second day after the operation the dressing became twisted in his movements in bed, and the tube was pulled out of the stomach. In order to replace it I was obliged to cut three stitches in the external wound. When the tube had been replaced these stitches were re-inserted. Apparently, however, such adhesion had formed that no harm was done by this accident excepting to delay the closure of the wound.

By the middle of September he began to expectorate some bloody mucus, presumably coming from the ulceration of the carcinoma in the esophagus. He has gained about four pounds in weight, however, since the operation. For some weeks he has been unable to swallow even a mouthful of water. What nutritive gain there is from feeding, I presume has been almost counteracted by the progress of the disease. Immediately after the operation he was fed for two days by rectal enemata. Then I began with small amounts of milk, poured into the stomach through the tube. This feeding has been gradually increased, until at the present time his daily food may be summarized about as follows: Milk, two quarts; beef, mutton and chicken broth, each about twenty ounces; and a dozen eggs. This is varied by substituting gruel, thin custard and other similar food. He is walking about with much comfort. The tube is held in place by a gauze dressing, which in turn is retained by rubber adhesive plaster on each side. This is laced through eyelet holes. No escape of the gastric contents has taken place alongside of the tube.

Nov. 1, 1893. The patient is still doing well three months after the operation. There is absolutely no leakage whatever.

Greig Smith states that the operation of gastrostomy was first proposed by Egebert, a Norwegian surgeon, in 1837, received its name from Sedillot, in 1846, but had a very unsatisfactory history and development until the time of Sidney Jones of St. Thomas' Hospital, London, in 1874. Since then it has made rapid progress in favor in the profession, and a variety of different methods of its performance have been devised, until now its technique is presumably so satisfactory that but little improvement can be made upon it. The conditions which demand the operation are, of course, any cause which prevents the introduction of aliment into the stomach by the mouth, for instance, stricture of the esophagus from any reason, whether by cancer, cicatricial constrictions from caustics, etc., occasionally from the pressure of extra-esophageal growths, from malignant disease in the mouth or pharynx. Whitehead[1] has reported a case in which gastrostomy was done on account of obstruction due to a diverticulum.

There are practically five methods by which gastrostomy is done.

1. The method originally proposed by Egebert, and modified in its details by Fenger and Howse.[2] In this an abdominal incision is made parallel with the border of the ribs, and the stomach is attached by sutures to the abdominal wall. Two sutures are placed in the wall of the stomach in order later to identify the exact position for puncture (Bryant), and the stomach is not opened until the third or fourth day. This method has given rise to so much trouble, however, especially from leakage, that various devices have been employed for the purpose of preventing this annoyance, which, in consequence of the irritation from the escaping gastric juice, caused widespread eczema or even ulceration. Handford[3] notices, for instance, "a hernia-like protrusion of the mucous membrane of the stomach from the fistulous opening, forming a red, mushroom-shaped, insensitive mass, nearly two inches in diameter. This was easily replaced, but led to constant leakage of the stomach contents." Moreover, it is very important to observe that in Whitehead's case, above alluded to, the postmortem showed that the adhesions of the stomach to the abdominal wall had so loosened by traction that they were very slight indeed when the patient died, six months and a half after the operation. Hence, the importance of secure suturing of the stomach to the abdominal wall, as I believe I have obtained in my own case by suturing the stomach to the abdominal wall.

2. The method of Von Hacker.[4] This operator proposed to use the belly of the rectus muscle as a sphincter. In the first method of operating, fibers of

1 Lancet, 1891, I. p. 11.
2 Heath's Dist. of Surg., p. 590.
3 Lancet, 1891, II, p. 988.
4 Wein. Med. Woch., 1886, Vol. xxxvi, 1073-1110, and Wien. klin. Woch., 1890, p. 693.

this muscle are divided by a transverse incision. Von Hacker proposed to make a vertical incision and a blunt dissection of the belly of the muscle, hoping that the rectus fibers would thus act as a sphincter. Girard[5] modified this by crossing the fibers of the muscle so as to form a more efficient sphincter. Von Hacker himself has been obliged to use the Scheimpflug canula in order to prevent leakage.

3. The method of Hahn.[6] In this a return is made to the original transverse incision, but a second incision is made in the eighth intercostal space. The stomach is drawn through this space, and fastened there between the cartilages. In addition to the danger of possibly opening the chest, necrosis of the cartilages has taken place, although Hahn affirms that there is no danger either to the diaphragm or the pleura. He believed that the cartilages of the ribs acted like a sphincter or stopcock.

4. The method of Witzel.[7] In this method the abdominal cavity is opened, the stomach drawn out, and a moderate-sized rubber tube is inserted into the stomach toward the cardiac extremity, through as small an opening as will admit it. The gastric end is then buried for about two inches by two rows of ordinary Lembert, or Cushing right-angled sutures. The free end of the tube is then brought out through the abdominal wound, and is either fastened there, or possibly after a time may be removed and inserted as needed.[8] The great advantage of this operation is the ureter-like, oblique entrance of the tube into the stomach; and as is shown by the postmortem examination in one of Meyer's cases,[9] the result is a nipple-like protuberance into the caliber of the stomach, which will prevent effectually the escape of any fluids.

This seems to me to be by far the best method yet devised, as it is simple, moderately rapid, and, above all, as in the present case as well as a few others in which the operation has been done, it is effectual in preventing any leakage.

I did not immediately begin feeding the patient through the tube, as I deemed it safer, the patient being in very fair physical condition, to nourish him for a couple of days by rectal enemata. I did, however, introduce an ounce of milk into the stomach the moment the tube was inserted, in order to make sure that perforation of the mucous membrane, as well as the muscular wall, had been effected. I think it likely that in another case, with the courage born of experience, I should be disposed to nourish the patient by small amounts through the tube immediately after the operation. I wished to try with this patient a method which has been used by others, the effect of his chewing meat which had been previously finely hashed, and then washing it into the stomach through the funnel. This gives the patient the satisfaction of mastication and of taste, and at the same time mixes the saliva with the food before its introduction into the stomach. Although not a man of especially sensitive nature, the idea of doing this seemed to disgust the patient so much that he was not willing to attempt it. The result, however, shows that he has received sufficient nourishment to gain somewhat in weight. Whether his constant hunger, in spite of the nourishment taken, is due to the want of satisfaction of his sense of taste, I do not know.

(5) Frank[10] has reported still another method practiced in the clinic of Albert, in Vienna. After making the abdominal incision parallel with the costal cartilages, a narrow fold of the anterior wall of the stomach is drawn out of this wound. A second incision is next made through the skin, half an inch above the first and over the costal cartilages. After separating the skin from the underlying parts, the fold of the stomach wall is drawn out, first through the abdominal wound, then under the skin, and, finally, through the second opening, and is fixed there, the mucous membrane being stitched to the skin. Whether experience will show this to be more valuable and more easily done than the method of Witzel can not yet be determined. It is said that no leakage occurs. Of course, as pointed out by the author, it would not be advisable in cicatricial stricture of the esophagus, because the fistula could not easily be closed, should it be desired to do this at any time.

It is interesting to note that Zweifel[11] of Leipzig, has used the same process as Witzel in making an artificial urethra. This idea was suggested by Witzel in his paper. In a case of carcinoma of the urethra in a woman, Zweifel extirpated the entire urethra and part of the bladder, closed the latter viscus, and then by a supra-pubic cystotomy made an artificial urethra after Witzel's method.

The mortality of the operation was last collectively investigated by the late Samuel W. Gross.[12] At that time Gross collected 207 gastrostomies, with 61 deaths, a mortality of 29.47 per cent., with a prolongation of life, on an average, at the date of the last reports, of 83 days.

Comparing gastrostomy with other procedures, there were thirty-two cases of esophagostomy, with nineteen deaths; a mortality of 59.37, and a mean duration of life of fifty-two days. Nineteen internal esophagotomies, with 6 deaths, or a mortality of 31.57, and an average prolongation of life of 256 days. Five combined esophagotomies have resulted in 2 deaths, a mortality of 40 per cent., and a mean duration of life of 168 days. Five esophagectomies gave 3 deaths, a mortality of 60 per cent., and a mean duration of life of fifty days. Three retrograde divulsions all resulted in recovery, with a mean duration of life of twenty-two days.

In the case of Handford, already alluded to, some very interesting physiologic experiments were made. He introduced a small rubber tube attached to a female catheter into the stomach, and connecting it with a Marcy's registering tambour and clockwork revolving drum, he found the respiratory and cardiac curves well marked, but absolute absence of any peristalsis. This he accounted for by the adhesion of the stomach to the abdominal wall. Yet digestion was efficiently performed, probably due to the replacement of this motion by the movement produced by the heart and diaphragm. He observes also that "the rapid introduction of large quantities of food into the stomach, the absence of pleasure in eating and the normal perception of flavors are not incompatible with very perfect digestion and active nutrition." Fine division of the food determined its

[5] Corresp.-bl. f. Schw. Aertze, 1888. No. 11.
[6] Centralbl. f. Chir., 1890, p. 193.
[7] Centralbl. f. Chir., 1891, p. 601.
[8] I have thus tried to remove the tube temporarily in my patient but had to abandon it from the difficulty of its re-introduction.
[9] Annals of Surgery, 1893, Vol. xvii, p. 594.
[10] Wein. klin. Woch., 1893, No. 15.
[11] Centralbl. f. Chir., 1893, p. 785.
[12] Trans. of the Amer. Surg. Assoc., ii, 1885.

rapid and easy digestion. Lactic acid was found as early as half an hour after eating. Hydrochloric acid was absent until as late as two hours after the meal.

A PROPHYLACTIC MEASURE AGAINST ONE OF THE POSSIBLE CAUSES OF CANCER OF THE TONGUE.

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On the subject of cancer of the tongue many writers affirm that one of the predisposing causes is traumatism. This being true, the biting of the tongue during an epileptic fit, eclampsia, etc., or in making forcible traction on the tongue, is not without danger; a danger none the less terrible, even though the consequence lies in the future. Much of this injury, that can readily be avoided, occurs during the administration of an anesthetic when it becomes necessary, as is often the case, to pull the tongue forward. The customary practice being to seize that organ with a tongue or artery forceps, locking the handles to prevent slipping, but subjecting the portion of the tongue between the jaws of the forceps to injurious pressure. This, aside from the question of cancer, may be considered as being somewhat barbarous.

To overcome these objections, especially in patients during the administration of anesthetics, the writer devised a mouth gag and a method of holding the tongue with dry gauze. Both have been in use in St. Joseph's Hospital for some months, demonstrating that traction can be made on the tongue for an hour without injuring that organ in the least.

The mouth gag (Fig. 1) consists of a soft rubber wedge (or a metal wedge, covered each time it is used with a narrow ring cut from the end of a rubber tube). The wedge is thirty millimeters high, fifteen wide and twenty thick, measuring from bottom of grooves. The ridges along sides are three millimeters in height; they prevent lateral slipping. The wedge is riveted to a metal handle ten centimeters long, shaped like one blade of the O'Dwyer mouth gag, excepting that the lower part of handle is hooked to fit the side of the anesthetizer's hand. It is used as follows: When the patient is partially under the influence of the anesthetic place the gag in position, wedge between the jaws; the soft rubber preventing injury to teeth, gums or metal work as gold crowns, etc. The handle hangs perpendicularly at side of cheek, its weight holding it in position. But should patient struggle, or it is desirable to still further open his jaws, the anesthetizer presses downward with the side of his hand which rests in curve at lower end of handle.

Two things have now been accomplished. First—the teeth being held apart the jaws can not be locked, and the position of the tongue can at any time be examined or grasped and drawn forward. If mucus collects in mouth it can be removed without delay. Second—a clear air way is assured, an advantage in case the natural air passage is not free, as in catarrhal conditions. Again, the air passing through the open mouth dries the tongue and cheeks, somewhat, and the secretions which are so disagreeable, especially when ether is employed.

Method of using gauze to hold the tongue: The anesthetizer should never be without an artery forceps fastened to his gown, preferably one with jaws four millimeters long, slightly curved, with teeth ground dull. Pèan's curved jaw artery forceps are good, but a pair with jaws opening parallel are best of all, the curve being a help when mopping mucus from throat. Should it become necessary to draw the tongue forward, remove mask, taking forceps in right hand, pass it into the mouth, curve downward, grasp the tongue gently and without injury, at least one-half inch from the point, and lift it up. When the tip protrudes between the teeth, grasp it with a piece of dry gauze held in the left hand. The forceps are then removed.



Figure 1.

If traction is to be maintained for a short time only, it can be done with the fingers; if for many minutes or for an hour or more, a piece of dry gauze, fifteen centimeters square, is folded from side to side until it is two centimeters wide. This is passed around the tongue with the right hand, pressing it down as far from the top as possible. Then twist the ends together until the tongue is firmly grasped in the loop of gauze. Remove left hand and snap the forceps on the strip around tongue to prevent it untwisting. (See Fig. 2.)

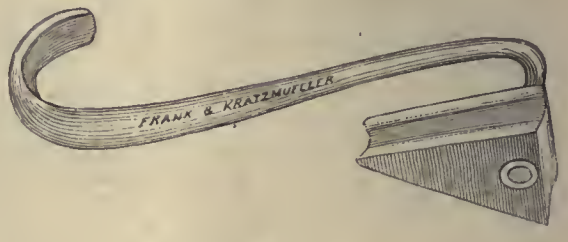


Figure 2.

One word of caution: If patient wishes to swallow or threatens to vomit, the tongue must be allowed to fall back.

For patients with puerperal convulsions a double mouth gag is made, by fastening a small rubber wedge on each end of a semicircular steel spring, the length of which can be regulated. The spring passes back of head, fitting the neck snugly and holding a wedge in each angle of the jaw.

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SATURDAY, FEBRUARY 10, 1894.

ANTISEPSIS IN OBSTETRICS.

"For all women in the perils of childbirth." . . . "We beseech Thee to hear us, Good Lord." So runs the liturgy of the Church of England and the Episcopal Church of North America, copied from that of the mother church of Rome; an echo from the Dark Ages, when the midwife was the only one who ministered to the wants of the suffering parturient, long before the practice of obstetrics became a science, and when the patient, if she survived the actual labor, had to face the risks of puerperal fever literally brought to her by the hands of those who meant to help her.

It will long be the boast of the nineteenth century that antiseptic methods in surgery and obstetrics first became settled truths in medical practice. Yet, in an editorial which appears in the *Charlotte Medical Journal* for January, 1894, we note the following passage: "It has appeared to me, when reading the various contributions of those who write so learnedly on the necessity of extreme antiseptic measures in parturition that they should ask themselves the important questions, Is the mortality of lying-in women any less by such means? Or is the death rate any less now than it was fifty years ago? If they do ask themselves these questions, they assuredly can not reply in the affirmative."

If the learned editor means by "extreme antiseptic measures" the antepartum and postpartum douching of the patient with an antiseptic solution, and the washing of the accoucher's hands in a similar solution previous to touching the patient, those obstetricians who advocate and practice the methods condemned most assuredly do answer the question in the affirmative and point to the convincing fact that, by the use of these methods, puerperal fever is far less common than in the days when DR. OLIVER WENDELL HOLMES wrote his immortal essay, showing so plainly the contagious character of the disease and the awful responsibility that rests on the physician.

A certain mortality there will always be from childbirth, but it should be due solely to the complications and should in no way be chargeable to dirt or neglect of cleanliness on the part of the attendant. One does not hear now-a-days of a lying-in hospital being closed on account of an outbreak of puerperal fever; even the old milk fever is banished from the lying-in chamber and the puerperium should be afebrile. The Preston Retreat, in Philadelphia, shows a record of over a thousand deliveries without a death, and antepartum and postpartum douching of patients with full antisepsis on the part of doctor and nurse is practiced there. Philadelphia has reason to feel proud of this institution's statistics, which lead the world, yet other maternity hospitals can show an almost equally good result. These are institutions built for this sole purpose and fitted up with the latest devices in the way of sanitary plumbing, etc., for the guarding from harm of those who are compelled in time of need to take refuge within their walls. If antisepsis is needed in such places, how much more is it needed in the homes of the rich where it is so usual to find a water closet immediately adjoining the bed chamber, or a wash basin connected with the sewer, in the room. The poor, while they may not possess these questionable luxuries of the rich, yet are equally exposed; how often is a bucket filled with filth found standing just outside the door of the room?

The puerperal woman is in one sense a surgical case. The vagina is full of minute abrasions, if not ruptured, in places, and the opportunities for the entrance of septic material from without are numerous. The surgeon does not think his duty rightly performed if he leaves any avenue by which infection may reach his patient; why should the obstetrician? We have in the puerperal vagina a bruised surface, to a certain extent,—a wound—and it should be treated as such.

That the author of the editorial in question does not mean to entirely decry antisepsis is evident from another passage, where he refers to five hundred cases attended by him in which cleanliness proved sufficient. Yet, he admits one death from puerperal fever among the number. Cleanliness may be all that is necessary in the remote country districts, where the patient has pure air and plenty of it; where she is removed from the boasted civilization of the city, that carries with it venereal diseases and a possible infection from gonorrhea contracted by the husband in the days when he sowed his wild oats. An antiseptic douche in those cases where there is reason to suspect such infection certainly

lessens the risk and does no harm to the patient.

There is one other point—the baby's eyes. Contact with a purulent discharge may cost the sight of those eyes. An antiseptic douche during the early stages of labor lessens the danger. Take the statistics of our blind asylums and see the numbers of inmates whose blindness is due to ophthalmia contracted at birth. Take the statistics of fifteen or twenty years ago and compare them with those of to-day. There are fewer cases. Why? Partly because more physicians have recognized the importance of the antepartum douche. Is it right that by any omission on the doctor's part the child should be deprived of the light of God's sun and (in the case of the poor), made a charge upon the State for support through life? The antepartum douche is not troublesome and does not in reality lessen the vaginal secretions, to any appreciable extent, and so interfere with the progress of labor, as has been charged against it.

As an opposite to all this, is the extreme to which antiseptic midwifery has been carried in certain quarters. This it is which the editorial mentioned apparently means to warn against. The scrubbing of the vagina with antiseptics, accompanied as it must be with an amount of friction which abrades the delicate mucous membrane, does interfere with the natural secretions of the part and adds to the dangers to be averted. This is meddlesome and bad, but the simple ante- and post-partum douche can do no harm, when properly given, and may save the life of the mother and preserve the brightness of her baby's eyes, instead of sending it through a darkened life a living evidence of some one's negligence.

RECENT APPLICATIONS OF GUAIACOL.

Some recent clinical applications of guaiacol invite a consideration of its chemic and therapeutic relations. "Guaiacol is a substance that occurs in wood-tar, and is also produced by heating pyrocatechin and potassium methyl-sulphate to 180 degrees, C. It is a colorless liquid that boils at 200 degrees, C., and has a specific gravity of 1117. It is readily soluble in alcohol, ether, and acetic acid, and is recommended instead of creasote in pulmonary tuberculosis."[1] This substance is a prominent constituent of the best creasote, into which it enters to the extent of about 60 per cent., although in the cheaper kinds it may be much less than this. Along with the guaiacol, are associated a number of more or less objectionable substances. Among these, according to ALLEN, are phenol, paracresol, cresol, kylenol, creasol, homocreasol, cœrneignol, and four methylic ethers of trihydric phenols. Many of the foregoing are distinctly toxic, but pure creasote, HUSEMAN declares to be non-poisonous. Those who are in a position to know about it, however, state positively that there is much poisonous creasote in the market.[2] The "United States Dispensatory" states that: "Commercial creasote almost always contains carbolic and cresylic acids from coal-tar; and indeed much of what is sold for creasote is nothing more than impure carbolic acid." This is not written in order to discredit the use of pure beechwood creasote in medicine, as originally suggested by SOMMERBRODT; but, to explain why chemists and clinicians have diligently sought for a similar preparation possessing equally beneficial effects, but having definite and uniform composition. Thus creasotal, or creasote carbonate was brought out by DR. CHAUMIER in a paper read before the Academy of Medicine of Paris.[3] DR. F. WALZER reported favorably upon benzosol, (a compound of benzoic acid with pure guaiacol, forming benzoylorrhoöxyanisol) which has the advantage over the preceding in the fact that it is a solid, being a colorless crystalline powder almost free from smell and taste. In the digestive tract it splits up again into its constituents, guaiacol and benzoic acid.

It might also be of interest to note that recently DRS. A. GILBERT and L. MAURAT have reported favorably upon the effects of a chemically pure form of guaiacol, which is made artificially, (synthetic guaiacol). This substance appears in the form of white, rhombohedial crystals, fusing at 28.5 degrees, C., and boiling at 20.5 degrees, C., with a specific gravity of 1.143. It is practically insoluble in water, but is soluble in alcohol, oils, and anhydrous glycerin. It possesses a sweet taste at first, which soon changes to a pricking and burning sensation.[4] It melts into a sticky paste at the temperature of the surface of the body. This has been used, combined with oil, in capsules, for internal administration in phthisis principally.

DRS. WEIL and DIAMANTBERGER, since 1889 have administered pure guaiacol in sweet almond oil (equal parts of each) by subcutaneous injection, in all the forms of pulmonary tuberculosis, and claim to have had very good results.[5] Of eighty-two patients, sixty-two were improved, two remained stationary, and eighteen became worse while under this treatment. Of the sixty-two cases, twenty-seven were considered cured. In the majority of cases the unfavorable symptoms of the disease were strikingly modified after a relatively short time.

About a year ago, DR. SCIOLLA[6] made the remarkable observation that external applications of guaiacol to a small area of the general surface, were promptly and uniformly followed by a reduction of the bodily temperature. This was soon corroborated

[1] Definition from advance sheets of Gould's "New Medical Dictionary."

[2] Nagelvoort on "Poisonous Creasote," Bulletin of Pharmacy, Vol. vi, p. 557.

[3] Deutsche Med. Wochenschrift, 1893, Nos. 24-25.

[4] The Medical Week.

[5] Bulletin Medical, 1893. No. 68.

[6] La Semaine Medicale, 1893. No. 21.

by the results obtained in tuberculous cases by Bard and also by Lannois. Subsequently Robillard of Lille[7] also repeated these observations upon guaiacol and confirmed Sciolla's statements concerning its powerful antipyretic effect. Drs. Cassovice and Sigalea modified Sciolla's method by not applying the remedy in a pure state, but in combination with the tincture of iodin (one part guaiacol to five parts of iodin). Of this, about 2 drachms are used for a single painting, applied on the affected side all along the posterior part of the throat, every evening. These paintings are said to give rise to a considerable fall in temperature, abundant perspiration, and increased diuresis. In a severe case of left pleuritic effusion, in which puncture did not bring about any improvement, the fever disappeared and after a few applications, the extravasation was promptly absorbed.[8]

Quite recently, Da Costa[9] gives his experience in the external use of guaiacol in reducing high temperatures in typhoid fever and other febrile diseases. He communicates the clinical notes of several hospital cases, with very striking temperature charts, showing conclusively the heat-reducing action of guaiacol when simply painted upon the skin, with or without friction. He found that the action was gradual and rather slow, not reaching its maximum effect until about three hours after the application. The place he usually selected was the abdomen, in the iliac region of right side, and the quantity usually employed was 30 drops. Larger doses were found to bring the temperature down below normal, and the patient was depressed and chilly, but the dose of 30 drops was well borne even by the typhoid cases. It produced no evident depressing effects upon the circulation or the respiration, but was likely to cause moderate perspiration. No obvious effects upon the urine, no albuminuria or other sign of kidney irritation were detected. This distinguished authority on clinical medicine pronounces it a valuable adjunct to the treatment of typhoid fever, or other diseases attended by high temperature, especially where the attendant circumstances would not permit the use of the cold bath. Where there is a tendency to intestinal hemorrhage, he advised abstention from resorting to the cold bath treatment, and declared that it is in these cases that guaiacol will be found of special advantage used in the manner mentioned.

It must be conceded, in the face of so much concurrent testimony concerning the action of guaiacol upon bodily heat, that we have come into possession of a remarkable agent for the treatment of high temperature, when this symptom calls for special therapeutic management. It is to be hoped that all who may subsequently experiment with guaiacol may observe the caution given by Da Costa, of not using an unnecessarily large dose; for although not considered a toxic agent, it can not be expected that a remedy capable of such potent action may be administered recklessly, or in doses unsuited to the physical development and condition, as well as the age of the patient. The suggestion to watch the kidneys it is also well to keep in mind, for it may be found that, just as with other drugs, there may be cases of idiosyncrasy, in which guaiacol might cause such distress or depression as would threaten the patient's life.

There are many surprises among the untoward effects of drugs, and what these may be in the case of guaiacol remains to be seen. In the meantime, however, therapeutics has been enriched by a potent and (as the rule at least), non-poisonous antipyretic possessing decided advantages over similar substances obtained from among the aromatic series of coal-tar products.

[7] Societé de Biologie, July, 1893.
[8] American Med. Surg. Bulletin, November, 1893; from Semaine-Medicale No. 52. [9] Medical News, Jan. 27, 1894.

SMALLPOX.

There is not much change in the smallpox situation. In Pennsylvania there are nine points where the disease exists, five of them in Berks County, and at nearly all of them under complete control. The case found at Williamsport on January 26 is the first new infected locality reported in three weeks. Philadelphia has, so far, escaped and the outlook in the State is hopeful. New cases are daily found at Chicago and New York, and the disease is slowly increasing in both cities. A case was reported at St. Louis, and one at Cotton Hill, Ill., the origin of both being traced to Chicago. On January 22 two cases were removed from the old Homeopathic Hospital on Ward's Island, and three days later one was taken from the Insane Asylum on Ward's Island. A short time ago there was a case found in one of the public schools of Boston, and on January 27 three cases were discovered in the Cook County Hospital, Chicago. The existence of the disease has also been reported at several places in Virginia near the Tennessee line.

Chicago in 1893 had 130 cases of smallpox with only 19 deaths. Without exception, all who died had not been vaccinated.

The smallpox hospital of Birmingham, England, had over two hundred patients at the end of 1893.

DISCRIMINATION BETWEEN EFFECTS OF DISEASE AND INJURY.

Members of the medical profession are likely, as personal injury litigation multiplies, to be called more frequently to discriminate, if possible, between the effects, in given cases of disease, or an unhealthy internal condition, and of external injuries. A striking precedent is furnished by the decision of the Supreme Court of Michigan rendered Jan. 9, 1894, in

the case of Shumway v. Walworth & Neville Manufacturing Company. This was an action brought to recover damages for the loss of certain fingers injured in a machine. But it was contended, on the other side, that the loss of the fingers was not the result of the injury, but was the result of the man's own condition, he being unhealthy. There was evidence tending very strongly to show that he was, previous to the injury, afflicted with a scrofulous disease; and the inference, perhaps was justified that such serious consequence would not have followed from the injury, had not this been his condition. The trial court in commenting upon this testimony, instructed the jury as follows: "In consequence of there being something wrong about his own constitution, the injury was aggravated, and it amounted to about this: That the permanent injury was partially or quite the result of just that thing, rather than the result of the accident itself, in the machinery. Now, you may decide this question: How much of the injury which he has suffered is the consequence of that, rather than the consequence of the injury itself? There is no kind of question, of course, that the accident or injury there—the hurting of his hand in the machine—did cause him some injury; but whether it was all caused by it, or the greater part of it, or only a small part of it, is another question and a question which you will have to decide." In another portion of the charge he stated: "If it be true that his constitution is in such a condition that a little injury, which is liable to occur to many men at any time, will have these aggravated results, he is not a man in such a condition and situation as a man who is sound, and the diminution of his capacity to work may not be as great." These instructions, the Supreme Court holds, were sufficiently favorable to the company sued. The fact that the man was afflicted with a scrofulous difficulty, which rendered it possible, or even likely, that a slight injury would produce more serious results than if inflicted upon a perfectly healthy person, would not put him beyond the pale of the law, or prevent a recovery of such actual damages as he had sustained.

CRUDE COCAIN IS NOT A MEDICINAL PREPARATION.

Crude cocain is not a medicinal preparation. True, it is used in the manufacture of cocain wines, which are generally proprietary preparations, and of oleates, but it is not employed in filling prescriptions. Its occasional use, for the sake of economy, upon the surface of the skin for surgical purposes, or for dental purposes, does not change the case. Neither does the fact that crude cocain is extracted from the leaves of the plant coca, by the aid of diluted alcohol, according to the decision of the United States Circuit Court of Appeals, in the case of Hirzel v. United States, rendered Dec. 5, 1893, constitute it a medicinal preparation in the preparation of which alcohol is used, within the meaning of the tariff act of Oct. 1, 1890. Under that tariff it is, therefore, dutiable at 25 per cent. ad valorem, rather than at 50 cents per pound.

IN UNITED STATES COURTS.

The United States Circuit Court of Appeals holds, in the case of the Mutual Benefit Life Insurance Company v. Robinson, decided Nov. 13, 1893, that under the provisions of the United States statutes, and the constructions of the Supreme Court upon them, a federal court is governed by the law of the State in which it sits with reference to the admissibility of the testimony of a physician in any given case. Consequently, where a State statute makes communications to a physician, properly intrusted to him in his professional capacity confidential and privileged, a United States court held in that State must treat them in the same way.

LEGAL PRESUMPTION AS TO THE DEAF AND DUMB.

However the deaf and dumb may have been regarded in times past and in other countries, the Supreme Court of Missouri holds, in the case of State v. Howard, decided Nov. 21, 1893, that the presumption that a person deaf and dumb from birth should be deemed an idiot does not seem to obtain in modern practice,—at least in the United States. Such unfortunate persons may be witnesses, if able to communicate their ideas by signs, through the medium of an interpreter, or by writing, if they write and read writing.

PROOF OF ABORTION BY CIRCUMSTANTIAL EVIDENCE.

Abortion can be proved entirely by circumstantial evidence. Thus, in effect, holds the Supreme Court of New York, general term, in the case of People v. Van Zile, decided Dec. 1, 1893. Among the facts which it is proper to take into account in such a case is the death of the woman from miscarriage. So also may the subsequent conduct of the person charged with the crime be considered.

THE FEMALE MEMBERSHIP IN THE BRITISH MEDICAL ASSOCIATION.

The *British Medical Journal*, January 6, gives a list of the ladies who have been allowed to enter the great National Association. The list contains twenty names, headed by MRS. GARRETT ANDERSON of London. At the annual meeting of the Association, last year, at Newcastle, the by-laws were so amended as to expunge all clauses that have hitherto rendered women ineligible for membership in the main Association and in the branches. The number of lady doctors in the United Kingdom was 135 in 1892, whereas in 1878 there were only 8.

CORRESPONDENCE.

Fluid Drinks After Laparotomy.

To the Editor:—The occasion of these remarks is the appearance of a nicely written little book on the "After-Treatment of Laparotomy" by Dr. Christopher Martin, the trusted assistant of Mr. Lawson Tait. Dr. Martin's book is just issued and as it is not published in this country, he kindly sent me one of the first numbers. In 1890, I was a pupil of Mr. Tait's for six months and at this time Dr. Martin had full charge of the after-treatment, as Mr. Tait seldom saw many of the patients after he had performed the operation. I then had ample opportunity to witness the after-treatment by *special permission* of Mr. Tait. Dr. Martin is a skilful surgeon and a keen observer of natural phenomena in the field of laparotomy. His little book is based on the after-treatment of 1,000 cases of abdominal section. He is possessed of independence sufficient to assert his own opinions whenever he may differ from Dr. Tait. It is, to me, gratifying that a man who has had ample opportunity of observing all the after-treatment of 1,000 cases in the service of any distinguished surgeon, that he will rise and assert his opinions in direct opposition to his instructor. Dr. Martin boldly writes against the *non-antiseptic practices* of Mr. Tait. This is after several years of close association with Mr. Tait and the observation of 1,000 abdominal sections of that distinguished surgeon.

I am personally acquainted with some conditions which would explain the difference of opinion, between Mr. Tait's ideas of antiseptic practice and those of Dr. Martin. But the chief object of this letter is to strongly protest against the practice of both Mr. Tait and Dr. Martin in the administration of fluids after laparotomy. Dr. Martin reflects Mr. Tait's practice and coincides with it himself when he writes: "In some mysterious way the mere opening of the peritoneal cavity—as in exploratory incision—induces a terrible thirst and this is aggravated by the *forty-eight hours' enforced abstinence from fluids.*" (Italics mine.) It is against this cruel "forty-eight hours" that I wish to protest. While I was with Mr. Tait for six months, I was awfully impressed with the intense suffering which a patient endured for the first two days with no fluid to drink, and I determined that I would try other means after laparotomy. I do not think I ever heard patients beg so pitifully as I heard Mr. Tait's beg for a little water. The desire for fluids after laparotomy becomes absolutely intense and I do not see why a laparotomy patient should long and hope and beg for a little fluid. Nature knows more than all the doctors combined. Thirst demands drink. Besides it seems to me to be therapeutic foolishness to withhold fluids from a patient whose system should be drained. To drain a marsh we establish a duct so that the whole fluid can flow out of the canal. The kidneys can best drain the system by having the material to be carried out well diluted. The waste-laden blood can be best filtered through the kidney by a full volume of blood in a dilute state. Again, the blood has been dehydrated by the active saline cathartics previous to the operation so that sound therapeutics would indicate to give fluids after abdominal section in order to reinstate a normal blood condition. Not only this, but *water is no doubt the best known diuretic.* I believe in washing out the kidney with water after laparotomy.

Since my experience with Mr. Tait, three years ago, I have been *advocating* and *practicing* the giving of drinks after every abdominal section. I give immediately after the operation an ounce of that fluid an hour if the patient desires it. In eight to twelve hours after the operation I give two fluid ounces an hour if the patient desire. Hot fluids slake the thirst better than cold fluids. I use no cold fluids for three to four days. Under this practice of giving fluids after abdominal section, in order to show that it is practical, I can present series of recoveries equal to most statistics. For example, with ample drinks after laparotomy, we had one series of *thirty-two* consecutive cases with one death, and that death had nothing to do with drinks. These cases were not selected, but operated on just as they came in order. Dr. Martin well says: "Ice must be shunned as poison." I am fully convinced that ice is a most disastrous agent after laparotomy and should never be used. The ice entices blood to the mucous membranes which induces more and more thirst while hot fluids slake thirst most effectually. I know two well-known gynecologists—one gives hot fluids after abdominal section and scarcely ever has any kidney trouble. The other withholds fluids after the operation and I know that he reports at least *five times* as much kidney trouble as the first gynecologist.

I have long advocated and practiced giving ample hot fluid drinks after laparotomy and I think experience and sound therapeutics has proved that it is a wise and humane course. I base it on the following conclusions:

1. Thirst demands drink.
2. *Water is the best diuretic.*
3. Waste material is best removed from the blood in a dilute state.
4. By saline cathartics the blood has been dehydrated before the operation and should be diluted immediately after the operation.
5. Drinks lessens severe suffering.
6. Hot drinks stimulate the shocked system and hasten depletion.
7. Fluid drinks induce sweating and deplete the skin.
8. Drinks serve as a source of nourishment and keep up the patient's strength.
9. Experience teaches that results with drinks are equally good and I think better than without drinks.
10. Drinks lessen kidney complications following laparotomy.
11. Hot drinks check vomiting and quiet irritation.
12. Ice and cold drinks must be avoided.

Florence Nightingale astonished the doctors by giving the sick soldiers what their appetite craved. Such nursing did not kill the soldiers, though it disturbed the dignified authority of the great physicians.

A year ago Dr. Byford informed me in conversation on the subject of drinks after laparotomy that he was also giving considerable fluid, and he remarked that his patients did better than previously. I also write from another standpoint.

Some seven years ago I became infected from dressing a wound. I was in bed about six weeks with a high fever. During that time free drinks were not allowed me. I never suffered so much from thirst in my life. Such measures are not sound in physiologic principle. The distinguished surgeon, Mr. Tait, has been the very man who has taught us how to save so many laparotomy patients by *draining* the alimentary canal with salines. Why not drain by the kidney with water!!! I believe that "enforced abstinence" from fluids after laparotomy is not wise therapeutics nor sound physiologic doctrine, and I give, as a final result that systematic experience and systematic observation and reasoning prove to me, that the wisest plan is to give hot fluid drinks after (human) laparotomy.

Respectfully,

F. Byron Robinson.

Chicago, January, 1894.

The New York Academy of Medicine and the Public Health Bill.

To the Editor:—The Journal for Dec. 30, 1892, reported the action taken by the Chicago Medical Society regarding the request of the New York Academy of Medicine to coöperate with it in securing the enactment of a public health bill, and stated that the Society refused this coöperation because the bill did not accomplish the purposes implied by its title, and in general, "the criticisms on this bill might be almost in-

definitely extended." Yet Dr. J. H. Girdner, apparently speaking as a representative for the Academy of Medicine, appeared before the Congressional Committee who were considering the bill, and misrepresented the position of the Chicago Society by the statement that its opposition to the bill was based on the ground that the latter was not radical enough. When asked where the Marine Hospital Service was weak, and in what particulars it did not cover the work outlined in the proposed bill, this advocate replied that he was not there to make war on the Marine Hospital Service, but in the interest of good legislation.

The farcical nature of this latter statement may be appreciated when the bill is compared with the law of Feb. 15, 1893, and it may be seen that twenty-three of the twenty-eight sections of this proposed bill are sections of the former law.

Perhaps it would be well for the members of the AMERICAN MEDICAL ASSOCIATION, and of the various State and local medical societies, to be acquainted with the true inwardness of this bill. In the early months of 1893, the New York Academy of Medicine, by one of the largest votes that has ever been polled, decided by a majority of less than twelve to prepare a bill for a National quarantine. This vote was taken when the law of February 15 had just passed Congress and was awaiting the President's signature.

The President of the Academy appointed on the Committee, A. Jacobi, a consultant and general practitioner; T. M. Prudden, a pathologist; L. A. Sayre, the well-known surgeon, once Health Commissioner of New York; C. C. Lee, a gynecologist, since deceased; Laurence Johnson, a general practitioner, since deceased; A. H. Smith, a general practitioner, Daniel Lewis, a surgeon; E. Bronson, a dermatologist; C. L. Dana, a neurologist; W. T. Lusk, an obstetrician; C. C. Rice, a laryngologist; T. M. Markoe, a surgeon; Mr. Allen Starr, a neurologist; S. B. Ward; C. McBurney, a surgeon; J. D. Bryant, surgeon, once Health Commissioner of New York; R. H. Derby, an ophthalmologist: E. G. Janeway, a consultant, once Health Commissioner of New York; T. Gaillard Thomas, a gynecologist; David Webster, an ophthalmologist; Stephen Smith, a surgeon, once member of the late National Board of Health; J. H. Girdner, a general practitioner; D. B. St. John Roosa, an ophthalmologist; and J. West Roosevelt, a consultant.

A sub-committee, consisting of J. D. Bryant, President, R. H. Derby, E. G. Janeway, T. Gaillard Thomas, David Webster, Stephen Smith,[1] and J. H. Girdner was intrusted with the preparation of the to-be-proposed law. The Committee was originally appointed with power to act, and the bill was formulated by the sub-committee without even referring it to the Academy for approval or amendment.

As might be imagined, a bill that was formulated by men, however experienced and eminent in their respective specialties but who were with but one or two exceptions, unknowing and unknown in sanitary science, was a hodge-podge of past and present sanitary measures.

Almost every year Congress is approached by tyros in sanitation, whose knowledge of the subject whereof they would speak is in an inverse ratio to the enthusiasm and energy they display in exploiting their views, and who seem to be afflicted with a species of paranoia that takes the form of, what it is sarcasm to designate as their knowledge of the sanitary necessities of the United States. And this year we witness such a bill, advocated by a person whose name has never been heard in any sanitary society or congress in this country, and who endeavors to enhance the desirability of the adoption of his measure by casting slurs and innuendoes on the competency and qualifications of the officers of the Marine Hospital Service. By chance, the writer happens to know of the many medical colleges in the United States that have been glad to have these alleged inexperienced men as members of their faculties, and of the many medical societies that have honored them by electing them as their presiding officers. Sanitarians know that the officers of the Public Services form the sole permanent medical corps of officers trained in sanitary methods in this country.

The intimation that has been made that the Academy of Medicine's bill should not receive the support of the regular medical societies of this country, because that body started the code fight and has since elected Homeopaths into full membership is not a valid reason for refusing to support it in work for the public or professional weal.

But when it advocates a measure in which a large minority of its fellows do not believe; when such a measure claims to establish a bureau of public health that is nothing but a bureau of seaboard and inter-state quarantine; and when that measure aims to overthrow existing and efficient institutions for the purpose of creating a board that, in the nature of existing customs will become the refuge of the political spoils-man, then it seems desirable that our societies should not only display the true inwardness of the bill, bnt also protest against its enactment.

There is a large and not uninfluential minority in the New York Academy of Medicine who deprecate the influence of the Academy being exercised in endeavoring to secure legislation of the kind proposed, especially as there is good evidence that all the proposed bill can accomplish is being better and less clumsily accomplished under existing National health laws.

ONE OF THE MINORITY OF THE NEW YORK ACADEMY OF MEDICINE.

[1] Members who in the past had had Sanitary Service.

No Vivisection Without Anesthesia.

CHICAGO, Jan. 29, 1894.

To the Editor:—I am glad to see (from your article of 23d ultimo) that you agree with me in the main part of my contention, viz.: That there should be no vivisection (as the word is commonly understood) without anesthesia. The leading words in my article (which you speak of but do not quote) are: "No one objects to vivisection with anesthesia." I am also glad to join you in your pride in the results of surgical researches, assisted by anesthesia. There you know vastly more than can be known to a layman. But when you say: "Under all circumstances, when mutilation and cutting is resorted to, anesthetics are used," I think you make an assertion which thousands of men know to be untrue.

Not to take up your valuable space by multiplying examples, I merely cite the following account extracted from the article by Dr. Albert Leffingwell in *Lippincott's Magazine*, August, 1884:

"There is a certain experiment, one of the most excruciating which can be performed, which consists in exposing the spinal cord of the dog for the purpose of demonstrating the function of the spinal nerves. . . . It is not the cutting operation which forms its chief peculiarity or to which special objection would be made. At present all this preliminary process is generally performed under anesthetics. It is an hour or two later, when the animal has partly recovered from the severe shock of the operation, that the wound is re-opened and the experiment begins. It was during a class demonstration of this kind by Magendie, before the introduction of ether, that the circumstance occurred which one hesitates to think possible in a person retaining a single spark of humanity or pity. 'I recall to mind,' says Dr. Latour, who was present at the time, 'a poor dog, the roots of whose vertebral nerves Magendie desired to lay bare to demonstrate Bell's theory, which he claimed as his own. The dog, mutilated and bleeding, twice escaped from under the implacable knife, and threw its front paws around Magendie's heel, licking as if to soften his murderer and

ask for pity. I confess I was unable to endure that heart-rending spectacle.' This experiment—which we are told passes even the callousness of Germany to repeat; which every leading champion of vivisection in Great Britain reprobates for medical teaching; which some of them shrink even from seeing, themselves, from horror at the tortures necessarily inflicted; which the most ruthless among them *dare not* exhibit to the young men of England,—this *experiment has been performed publicly again and again in American medical colleges*, without exciting, so far as we know, even a whisper of protest or the faintest murmur of remonstrance! The proof is to be found in the published statements of the experimenter himself. In his "Text-book of Physiology," Professor Flint says: 'Magendie . . . showed very satisfactorily that the posterior roots (of the spinal cord) were exclusively sensory, and this fact has been confirmed by more recent observations upon the higher classes of animals. We have ourselves *frequently* exposed and irritated the roots of the nerves in dogs, *in public demonstrations* in experiments on the recurrent sensibility, . . . and in another series of observations.'"

Now to bring this citation down to the present day, I beg your attention to the address of Philip G. Peabody, A.M., LL.B. of Boston, delivered in London, June 14, 1893. He says, among other things:

"In explanation of my allusion to the largeness of the number of animals vivisected, I may say that in two institutions which I have within a few days visited in Paris, in each of which I was expressly told that they keep *small* supplies for daily use only, and replenish the stock every day or two, I nevertheless saw, I should say, over a thousand animals intended for vivisection or actually undergoing it, including horses, dogs, monkeys, rabbits, chickens, ducks, pigeons, rats, mice, guineapigs, frogs and fish, and was told that they had cows and cats also; the small cages *alone*, in each institution, intended, remember, for one day's supply, would easily hold, I believe, five thousand animals, each the size of a medium sized dog.

"Relative to anesthetics, I will say that out of a large number of vivisections extending over several days, and including various different kinds of animals, no anesthetic or pretence of it was used in one single case. I saw no anesthetics in or about either institution, and feel sure that none is ever used, except perhaps in some unusual case. When a dog is convulsed with agony, he is readily soothed by a caress so as not to disturb his tormentor, and usually licks the hand of his torturer. Any one who will observe a vivisector at work, will see not only that, as one infamous perjurer inadvertently confessed, he is absolutely regardless of the suffering to his victim, but that it must be so. His cutting, mangling, burning, is frequently, I may say habitually, just exactly the same in the case of the living dog as in the case of the dead one.

"I have within one week seen animals operated upon on Saturday afternoon, when the vivisectors left their laboratory, left alive in the laboratory evidently, and as I was told by the operator, to remain until the morning, perhaps Monday morning, unless released sooner by an accidental death, before undergoing the conclusion or continuation of the experiment."

Supposing that you admit the validity of these reports, I think you should join me in the effort to forbid, by law, all vivisection unaccompanied by anesthesia.

Joseph Kirkland.

The Hyposulphites in Yellow Fever.

Waukesha, Wis., Feb. 4, 1894.

To the Editor:—In the last number of the Journal, February 3, on page 138, in a paper by Dr. Joseph Jones of New Orleans on the value of the sulphites and hyposulphites I note this statement:

"2. It has been affirmed that the hyposulphite of sodium given internally in regular doses even in the presence of the poison in a yellow fever epidemic, will completely ward off this disease. *I have no facts with which to prove this statement but would advise that it be put to the test as might easily have been done as I suggested in the recent epidemic at Brunswick, Ga.*" (Italics mine.)

Now it is a little humiliating to read such a statement, and from such a high source, when the facts are these: In the great yellow fever epidemic of 1878 which created such ravages in Memphis, Granada, Miss., and New Orleans, I not only recommended the free use of the hyposulphites, but in 492 cases then reported, I administered it freely and with most pronounced effect, both as a prophylactic and as a therapeutic measure throughout the course of the disease. After the epidemic I wrote a little book on "Yellow Fever", which was published by Messrs. Wheeler Bros., in Nashville, Tenn., where I held at that time the Chair of Anatomy in the same institution in which Dr. Jones was Professor of Physiology just previous to my entrance to the Faculty. In the spring of 1879 I presented, in person, to Dr. Jones a copy of this work, and it certainly was never read by him as the chapters on prophylaxis and treatment were full of reports anent the action of the hyposulphites as anti-zymotics. I do not write this as a self-advertisement, but I do think that after extensive reviews of my work which appeared at the time it was issued, and the indorsement which the suggestion of this treatment received by those of my colleagues then engaged with me in that awful siege, and its further successful use in the Jacksonville epidemic of 1888, reported extensively through the journals, it is somewhat remarkable that such a statement should appear at this late date, and in such a sweeping manner, especially as I had called in person on Dr. Jones and laid before him a copy of my work for his perusal, Although it is sadly true that "a prophet is not without honor save in his own country," it might perhaps be well to remember that occasionally, at least, "some good may come out of Nazareth."

T. O. Summeas, M.D.

Superfluous Glasses.

Iowa City, Feb. 5, 1894.

To the Editor:—In the editorial on "Superfluous Glasses," in the Journal of February 3, there are several points which I can heartily indorse, and some, naturally, that seem to me not well taken. I write now because I am preparing an article on asthenopia, based on records of more than a thousand cases seen in private practice, nearly all among professional people and students. The notes do not cover refractive errors alone, but constitutional conditions, general and local diseases, etc. More than six hundred had errors of refraction, and while relief of refractive error has always been to the advantage of the patient, the cure of asthenopia, in my experience, often requires more than simply making the eye the most perfect optical instrument possible, or securing the so-called equilibrium of muscular movement of both eyes. Asthenopia occurs with one eye, with emmetropia, hyperopia, myopia, all forms of astigmatism, anisometropia, with ear, nose and throat diseases, with uterine and rectal disease, with bad hygienic surroundings, etc.; and all of these conditions occur without asthenopia. Indeed, among my cases of refractive trouble, a little more than half the cases were asthenopic, in each variety. Asthenopia is more frequently found among those with very acute vision than among those with very poor.

While I very much doubt the influence of 0.25D. of hyperopia, or even astigmatism, in the production of *asthenopia*, there is no doubt but that acuteness of vision may frequently be greatly increased by even this apparently insignificant correction. The subject of asthenopia is one deserving more attention from the profession at large than it receives, for it has an important bearing upon occupation and habits through life, and plays an active part in many neurotic complications. If you desire it for the Journal, I will prepare my analysis of cases, and deductions therefrom especially in reference to causation.

C. M. Hobby., M.D.

ASSOCIATION NEWS.

Success is Assured.—It is very gratifying to be able at this very early date to assure our readers and members in the East that the AMERICAN MEDICAL ASSOCIATION meeting for 1894 promises to be a grand success. We are in receipt of enthusiastic letters from medical men in various parts of California, Oregon and Washington, informing us that they contemplate coming to San Francisco in June to attend the ASSOCIATION meeting and become members of the organization. We can assure them that everything will be in readiness on our part. The various committees are sparing no pains to provide literary feasts and social pleasures to all who may honor us with their presence. There will be grand dinners, balls, excursions on the bay and into the country, receptions, etc., etc. California has already gained laurels as hostess and we can promise that she will do justice to her friends on the occasion of June 4, 1894.—*Pacific Medical Journal.*

Join the American Medical Association.—We would urge every medical man to become a member of his county society, then join the State Society and thus become eligible to membership in the AMERICAN MEDICAL ASSOCIATION, which meets in San Francisco June 4, 1894. The ASSOCIATION should take in at least one thousand new members from this coast. The British Medical Association has a membership of over 5,000, whilst the members of the AMERICAN MEDICAL ASSOCIATION number only 2,000.—*Pacific Medical Journal.*

This is an error. The AMERICAN MEDICAL ASSOCIATION has nearly 5,000 members, while the British Medical Association has over 15,000.—Editor. JOUR. AM. MED. ASSOCIATION.

SOCIETY NEWS.

Medical Society of the Missouri Valley.—The spring meeting of this Society will be held in Omaha, Neb., March 15, and continue in session one day. Members contributing papers must send titles to the Secretary prior to February 20, so they can appear on printed program, mailed March 1. Applications for membership can be sent to J. F. White, M.D., Council Bluffs, Iowa, with a fee of $2 enclosed. A full meeting is expected; a profitable session desired.

F. S. THOMAS, M.D., Sec'y.

American Electro-Therapeutic Association.

The Third Annual Meeting Held in Chicago, Sept. 12, 13 and 14, 1893.

AUGUSTIN H. GOELET, M.D., President.

(*Continued from page 168*).

H. E. HAYD, M.D. of Buffalo, read the following paper on

SOME OBSERVATIONS ON THE FINE WIRE COIL OR CURRENT OF TENSION.

The fine faradic coil or coil of tension has found a recognized place in scientific medicine, and more particularly in gynecologic therapeutics, where its sedative properties are so strongly, as well as satisfactorily, demonstrated. Certain conditions are, however, necessary in order to obtain this sedative quality of the faradic secondary current. The wire must be long, and very finely attenuated, and the interrupter must be capable of very quick and smooth vibrations. The batteries ordinarily sold to the trade can not be depended upon, as the coils are too short, the wire is too thick, and the vibrations too slow. It is, perhaps, a very difficult matter to decide how fine the degree of attenuation of the wire shall be, and whether, after a certain point, the difficulties of insulation become so great as to interfere with the properties and the powers of the current generated. Yet Engleman has demonstrated that a coil can be made six thousand feet in length, and of a wire No. 36, (Brown & Sharpley scale) which is capable of producing a very steady and uniformly soothing quality of current. In my own practice, I have used a coil thirty-five hundred feet in length, No. 32, and tapped at three points, and making it possible, by reason of a convenient little switch, to use fifteen hundred feet, or twenty-five hundred feet, or thirty-five hundred feet of wire as desired. My vibrator is capable of at least two hundred to two hundred and fifty vibrations per second. Goelet recommends a wire forty-five hundred feet in length, No. 36 in size, and a vibrator from three hundred to three hundred and fifty per second.

Various explanations are given for these great differences in the physical and physiologic properties of the current generated with these different sized coils and wires; and, at the same time, certain indications for employing slow or rapid vibrators.

We are all aware that the immediate and occult effect of the faradic current is to cause tonic contraction of muscle fiber, and if the wire be coarse, this contraction is not only most marked, but decidedly painful. Moreover, this contraction, as well as pain, is increased when a slow vibrator is employed. Consequently, if mere muscular tone and muscular exercise is the desired indication, the wire should be accordingly coarse and the vibration slow, so as to give sufficient time to enable the muscle to thoroughly contract, and then relax itself. On the other hand, if the interruptions be very rapid, the muscles are unable to respond to each vibration and are brought into a condition of constant contraction or rigidity. The sensory nerves of the part, subjected as they have been to this constant and intense stimulation, cease to be impressionable and, as a result, a temporary paralysis or anesthesia takes place, of more or less prolonged duration.

Accepting this reasonable physiologic explanation, Apostoli, Engleman, Goelet, and many others have used the fine coil, or coil of tension in acute inflammations, and have been enabled to provide this subtle but powerful opiate for the relief of the pain accompanying these conditions.

They, (Engleman and Goelet) have demonstrated, what any one of you can verify by a simple trial, that the interrupter or vibrator influences the quality of the current wonderfully. You will find that a fine, rapid vibrator, when used with a coarse short coil, softens the character of the current generated; and that a slow vibrator, when used in conjunction with a long fine coil, gives a harsh, painful and penetrating effect. Therefore, to the interrupter, as much as to the coil, must we ascribe the sedative effects of the current and in order to bring about the most sedation, in an excitable and inflamed area, a fine coil of at least thirty-five hundred to five thousand feet in length, and a vibrator capable of at least two hundred and fifty to three hundred and fifty vibrations per second is an absolute necessity.

I desire, more especially, to call your attention, however, to the application of this wonderful force in relieving and curing many conditions which heretofore have been the *bete noir* of my practice. Slight and not dangerous, but, nevertheless, most annoying symptoms; distressing to the unfortunate patient, and harassing to the medical attendant.

Those cases of neuralgic or neurotic dysmenorrhea, found in young women, associated with much pain and tenderness over the ovaries, and often excruciating pain upon pressure in the epigastrium and pit of the stomach; various reflex dyspeptic symptoms, nausea and vomiting at the menstrual epoch, and constricting pains in the throat, and globus hystericus. Upon vaginal examination there is no fixation, no shortening and distortion of the tubes, and in fact, other than perhaps vaginismus and tenderness in the vaginal vault, no gross evidences of disease whatsoever. I believe in these cases the fine coil may be considered a specific. so satisfactory and delightful have my experiences been. The painful menstrual crises have ceased; the gastric irritability, and epigastric pain and tenderness have passed away as if by magic, and the patient returns for a second treatment, cheerful; after having freely partaken of food and nourishment, which previously not only distressed her, but occasioned pain and immediate vomiting.

Various nervous manifestations due to some irritable condition of the nervous mechanism of the bowels; flatulence, roaring, and croaking noises, which so seriously disturb the comfort and happiness of so many young women. In one case, that of a young unmarried women, in whom I had tried every medicine known to me without appreciable effect, and where the condition was so exaggerated that she was denied the pleasure of society, and was fast becoming a hopeless hypochondriac. I found the ovaries tender and sensitive to the touch; pain was elicited by pressure over the pubic and iliac regions, and there was also marked epigastric tenderness. Ten treatments in all were given, and a perfect and permanent cure was effected. This case I reported in the March, 1892, number of the *Buffalo Medical and Surgical*

Journal. This treatment has proved especially valuable in those acutely retroflexed uteri, where the body is so hypersensitive that even the slightest pressure provokes the most distressing pain. In inflamed, tender and prolapsed ovaries, the pain has often been relieved sufficiently to enable a proper fitting support or pessary to be borne with comfort and satisfaction. Moreover, it is a valuable agent to commence the treatment of painful conditions; in fact, to supplement galvanism, vaginal or intra-uterine, when indicated. I have also found it occasionally of very great service in relieving the post-operative pains of salpingotomy and in one case in particular, (that of a young widow, from whom I removed two large pus tubes and ovaries,) it was especially valuable. She returned after two months, suffering great pain in the region of the left stump. No apparent reason could be assigned, and the condition was treated empirically with the fine faradic coil. Relief was immediate and permanent after a few treatments.

I have not met such encouragement in the treatment of the pain and local tenderness of slight salpingitis; those cases where the uterus is not fixed and its movements not specially restricted, but simply pain and tenderness are complained of on elevating the organ, or moving it laterally from side to side, and especially at the cornual junction. Nor has the tenderness of endocervicitis, and endometritis and metritis yielded as kindly; making me, therefore, feel that the fine coil is more especially useful in those irritable nerve conditions or neuralgias, dependent upon some peculiar vaso-motor influence or disturbance.

But, it may be possible with a wire forty-five hundred feet in length, and a vibrator capable of at least three hundred and fifty vibrations per second, that a current of less stimulation, and of more sedative qualities would be obtained; and therefore bring about more encouraging results. Its application has the great advantage of being practically without danger, and it can be administered in the vagina by reason of a simple bi-polar vaginal electrode.

And to those of us who have studied the causal relationship between uterine disease and intra-uterine medications and applications of all kinds and sorts, this consideration offers very great consolation. The difficulties of diagnosis in rare uterine troubles are often very great, while pain, the symptom so commonly complained of, can often be relieved and without adding an element of danger, by reason of perhaps uncalled for and unnecessary intra-uterine manipulations.

Let me briefly give the histories of two interesting cases, not previously recorded, that will demonstrate in unmeasured terms my appreciation of the fine faradic coil in properly selected cases; (I must also add that these two cases are but *two* of a large number of similar ones):

Miss E., age 22, well nourished, healthy blonde of Irish extraction, consulted me for stomach trouble. Nausea, vomiting and inability to retain any food, not even teaspoonfuls of water; great pain in the pit of stomach, mental distress and anxious forebodings; menstrual periods were regular, but accompanied by great pain for twenty-four hours previous to their appearance. These symptoms were always associated with the menstrual molimen, and would last for some days after the flow ceased, but never in such an aggravated degree. I ordered her to swallow broken pieces of ice, and to apply mustard plasters to the pit of the stomach, and prescribed acid hydrocyan, dil. and soda bicarb. No relief was obtained, and the nausea was simply increased. Small doses of ipecac were tried, and then Gill Wylie's tablet of bismuth and oxalate of cerium. But to no avail. Finally, a hypodermic injection of morphia gr. ¼ and atropia gr. 1-150, but this only gave temporary relief.

As matters were becoming alarming, a vaginal examination was made. Nothing was manifest to the eye. The hymen was intact. No preputial adhesions, and the nymphæ were not enlarged or rugose The rectum was healthy, and free from erosions and fissures. The vaginal vault was excessively tender, and so much pain resulted from the examination that I was forced to desist. The iliac regions and the epigastric pit were especially tender upon slight palpation. The medium sized fine bi-polar vaginal electrode of Apostoli was inserted, and the current gradually increased. The sèance lasted about fifteen minutes, until all pain and tenderness had entirely disappeared. A vaginal examination was then made and other than a slight anti-flexed uterus, nothing abnormal could be made out. The stomach distress at once disappeared, light food was taken, and inside of forty-eight hours a very generous and wholesome diet indulged in. The treatments were given twice a week until the following menstruation appeared. It came regularly, and with no pain, and no stomach distress. The cure has been permanent, and seven months have elapsed since the last treatment.

The next case I saw in consultation with Dr. Morrison: a young unmarried woman, age 26, with the following history; menstruated first at 17; much pain and frontal headache. Fairly regular, but at intervals from thirty-four to thirty-six days, and the flow would last four days. Dysmenorrhea, frontal headache, great nervous excitement, nausea, vomiting and aphonia were the usual menstrual accompaniments. I found her in bed, where she had been for six weeks. Very thin and emaciated, and suffering with a good deal of abdominal pain. She had been vomiting for some days, and could take but very little liquid nourishment, and consequently, had been fed by nutrient enemata. Valerian, assafetida injections, and the usual hysterical remedies had been faithfully tried. There was no fever present, but the aphonia existed, and the stomach distress was very great. The pain and tenderness upon pressure over the ovaries and epigastric region were marked, as well as the hyperesthesia of the vaginal vault. The fine faradic coil was advised, and the most gratifying result followed its employment. Dr. Morrison told me that the pain and tenderness immediately disappeared, and after the second treatment, the dysphonia. The treatments were continued bi-weekly for two months. The subsequent periods came without any manifest inconvenience, and the young woman is now in good and robust health.

Another case of this same class suggests to my mind the wide field of possible usefulness of the fine faradic coil:

A young girl, age 17, well nourished, and of rather large, coarse, muscular build, but quite intelligent, with the following history: menses first appeared when 13; no pain. Irregularity, intervals from two to three months. Falling fits, occurring frequently, and of late, two and three in a day; unconscious during the attacks. Sometimes froths at the mouth; occasionally pulls her hair out, and once bit herself on the arms and hands. Upon examination there was great pain and tenderness, over the ovarian and epigastric regions; and while pressure was being made over the pit of the stomach, a fit was induced. It was of the nature of hystero-epilepsy. The arms and legs were thrown into violent spasms, and the body presented a horribly distorted appearance. The lower jaw was pulled to the left side, and the eyes half open, and looking to the right with the head semiflexed on the right shoulder. Violent respiratory movements occurred; the nostrils were blown in and out, but the face was not livid, as in epileptic, or uremic convulsions. The jaw was fixed, and no frothing occurred at the mouth. The fit lasted about two minutes, and by continuing the pressure over the epigastric pit, another paroxysm occurred; and seemingly any number of paroxysms could be induced by the pressure. While unconscious, the small sized electrode was inserted into the vagina, and by pressing on it so that it pressed against the vaginal vault another paroxysm resulted. The current was turned on, and after five minutes, firm pressure could be made in the vaginal vault and over the pit of the stomach, without inducing any pain or convulsive manifestations whatsoever. She seemed to be tired and sleepy after the sèance, and therefore was placed on a lounge; where she remained in a sound sleep for an hour. She returned in three days, and upon pressure in the epigastric pit no pain or spasm could be provoked. She also said, that previous to the fit she complained of a sick funny feeling at the pit of the stomach, and probably it was from this excitable and sensitive area, that the aura proceeded. She is still under observation and so far, three weeks, has had no falling attacks.

DISCUSSION.

Dr. A. Lapthorn Smith said he could heartily corroborate everything said about the use of the fine wire. He had treated at least a half dozen cases in which laparotomy and removal of the appendages had failed to help the patient, and yet they were completely relieved of all symptoms by the fine wire current.

Dr. Engelman said that the paper stated that 300 or 350 interruptions per second were obtained with the author's apparatus; yet as good an interrupter as he could find, i.e., the one on the best of Gaiffe's instruments—gives only 3,000 interruptions per minute, or 50 per second. If the author had really used 350 interruptions per second, the patient would not have felt the current. To get the best results we must know the dosage and precise method of application. The average vibrator on the ordinary instrument makes 2,000 to 2,500 interruptions per minute. This is whas

is called fast vibrations. Variations in adjustment will vary this rate within moderate limits.

It is important to know the number of windings on the coil—more so even than the number of feet of wire. The windings mean lines of force, and this means voltage.

DR. MASSEY moved that the discussion on this subject be adjourned until other papers of like import had been read. Seconded and carried.

(*To be Continued.*)

NECROLOGY.

Wm. B. Baker, M.D. of Bristol, Pa.

Edward S. Lawrence, M.D. of Philadelphia.

C. Refkowsky, M.D. of Chicago, January 23.

Dr. Harold Haas of Wabash, Ind., at Deland, Fla., February 4.

George W. Parvis, M.D. of Centerville, Md., died January 26, age 67 years.

Mathew T. Scott, M.D. of Lexington, Ky., died in Texas, January 26, age 38.

Erasmus M. Kent, M.D. of Bristol, Vt., January 26, age 57. He represented Bristol in the Legislature in 1890.

Willis O. Gilson, M.D., at Erie, Pa., January 25. He was graduated at the Western Reserve College, and was about 35 years of age.

Samuel Warde, D.D.S. of Cincinnati, January 24, age 71. He was an active member of the Mississippi Valley Dental Association and had received generous recognition of his skill in mechanical dentistry, by the presentation of medals from various societies and institutions.

Adolph Sauerherring, M.D. of Mayville, Wis., died January 24, at the advanced age of 73 years. He was a practicing physician for over half a century, and was buried under the auspices of the Masonic Lodge of Mayville on Friday, the 26th inst.

Benjamin S. Anderson, M.D., died near Media, Pa., suddenly, from heart disease age 71 years, January 24. He had been in Philadelphia at the meeting of a medical society the night before, and was on his way home when he became sick. He was a popular and successful practitioner.

Horatio N. Buckley, M.D. of Delhi, N. Y., January 24, age 74. He had lived at Delhi for the last fifty years. He was twice Treasurer of Delaware County, and sixteen years Postmaster, and for many years had been the President of the Trustees of the Delhi Academy.

Dr. Edward Griffin Crafts died at his home in East Maine, Otsego County, N. Y., January 26. He was born in Cherry Valley on July 4, 1821. Graduated in 1850 from Geneva Medical College, soon after was appointed by Cornelius Vanderbilt as Surgeon of the California steamship, *Northern Light*. In 1853 he was appointed Resident Surgeon and Agent for the Transit Company at Virginia Bay, Nicaragua, Isthmus of Panama. He later practiced in Binghamton and removed to East Maine in 1879.

Edmund Burke Haywood, M.D. of Raleigh, N. C. He was born in Raleigh in 1825; was graduated with the class of 1847 from the University of North Carolina, and received his medical degree from the University of Pennsylvania in 1849. He was Surgeon of the North Carolina State troops in 1861, and in 1862 appointed Surgeon in the Confederate Army, and placed in charge of the general hospitals at Raleigh. He was the founder of the Raleigh Academy of Medicine, and an ex-President of the State Medical Society. He was greatly beloved and esteemed by the community in which he lived.

Prof. August Hirsch, M.D., Privy Medical Councillor, died at Berlin on January 29. He lectured at the University on pathology and the history of medicine, was celebrated for his researches into the geographic distribution of epidemic diseases, and was the most distinguished epidemiologist who ever lived. His chief work was published by the Sydenham Society, and the labor and care taken in its preparation was simply monumental. For forty years the writer has been familiar with the epidemics of this country, and can testify to the accuracy of the facts as stated by him in many instances. When we last saw him in Berlin he was engaged in revising his great work and bringing it up to date. Sanitary science owes him a great deal, and sanitarians will deeply regret his death.

John H. Murphy, M.D. of St. Paul, Minn., Jan. 31, of carbuncle. He was born at New Brunswick, N. J., Jan. 22, 1826. His father was an officer in the army of the United States in the war of 1812, but was by occupation a shipbuilder. He removed to Adams County, Illinois, in 1834, and established a farm near Quincy. Here young Murphy received his early education, and afterwards was a pupil of Abram Hull, M.D., of Lewiston, Ill. He was graduated at Rush Medical College with the class of 1850, and at the time of his death was President of the Alumni Association of that institution. After his graduation he practiced at St. Anthony, Minn., where he resided until 1864, when he removed to St. Paul. In 1861 he joined the volunteer service as Acting Surgeon of the First Minnesota Volunteers, and six months later was commissioned Surgeon of the Fourth Minnesota. While in the field near Vicksburg he suffered from sunstroke and returned home, but recovered and rejoined the service as surgeon of the Eighth Minnesota Infantry. At the close of the war he resumed practice in St. Paul, and for a long time was chief surgeon of the railroads passing through St. Paul. He was Surgeon General of Minnesota for twenty years, having been appointed to that office in 1874. During his long and eventful life he occupied many positions of honor in the building up of the new State, having been a member of the Legislature of 1852 and of 1855, and of the Constitutional Convention of 1857. He was a member of various Masonic bodies, and was held in high esteem by the old soldiers, no reunion being deemed quite complete without the presence of Dr. Murphy. He was married June 28, 1848, to Miss Mary A. Hoyt, and they have had seven children. He was a regular attendant at the meetings of the AMERICAN MEDICAL ASSOCIATION, where his genial presence and his sturdy common sense views on medical subjects made him a general favorite. He will be greatly missed by the older members, and as well by many who had only recently become members of our great medical organization.

Roswell G. Bogue, M D.—The following is the report of the Committee of the Illinois Commandery of the Loyal Legion, on the death of Dr. Bogue of Chicago:

Major Roswell Griswold Bogue was born in Louisville, St. Lawrence County, New York, May 2, 1832, and died in Chicago Dec. 8, 1893. He was educated at the Castleton Academy, Vermont, and spent the earlier years of his young manhood in teaching. From the East he came to Columbus, Ohio, where he read medicine with a distinguished surgeon of that time, Dr. Norman Gay. He then attended the College of Physicians and Surgeons of New York City, from which he received his degree in the winter of 1856 and '57, and in the spring of 1857 located in Chicago and began his successful career in the practice of medicine. He found friends at the outset of his career, fitted as he was for the healing art, both by nature and education.

Upon Aug. 5, 1861, he was commissioned Major and Surgeon, and assigned to duty as Surgeon of the Nineteenth Illinois Infantry, and continued constantly in this service, until mustered out on July 9, 1864.

The Regimental Surgeon of the United States Army enters upon his duty with no expectation of increased rank or pay. He can hope for increased honors and responsibilities—and these came to Dr. Bogue. He served with his regiment through the Missouri, Kentucky, Tennessee and Alabama campaigns up to March, 1863, when he was appointed Medical Director of the second division of the Fourteenth Army Corps, commanded by General Negley. When the Army of the Cumberland was reorganized in October, 1863, Dr. Bogue was transferred to the third division of the Fourteenth Army Corps commanded by General Baird, and

again honored by the appointment as Medical Director. He was with this command in all the battles in which it participated, notably those of Chickamauga, Chattanooga, Mission Ridge, Buzzard's Roost and Resaca. In all of these posts of duty there is one continuous record of faithfulness and efficiency.

Dr. Bogue was a man of deep sympathy and he did not know what it was to spare himself when a wounded soldier was begging for help. After a battle it was no unusual experience of the faithful surgeon, to work all night, sometimes leaning over the operating table until he found it impossible to straighten himself into an erect attitude, without the aid of his assistants. It was there amid such surroundings, performing the most difficult operations of surgery by the flaring light of torches and tallow candles, with body and mind taxed to their utmost, that he doubtless laid the foundation for the disease that later on destroyed the nerves of his eyes, and then ended his life by attacking the brain.

At the close of the war, Dr Bogue returned to Chicago, and again entered upon the practice of his profession. He had a natural aptitude and love for surgery and sought as much as possible to give up his general practice, and devote himself exclusively to it. This he found it difficult to do, honored and loved as man and physician, in a multitude of homes. In addition to his skill as an operator, he was masterly in diagnosis, and his opinions were widely sought by his professional brethren.

He was one of the organizers of the Cook County Hospital, and was for thirteen years one of the Attending Surgeons. He was the first Professor of Surgery in the Woman's College, and was for many years the Attending Surgeon for the Hospital of Women and Children. He was Consulting Surgeon for both the Presbyterian and St. Joseph's Hospitals from their organizations until his death. Major Bogue joined this Commandery Dec. 5, 1883, and it is safe to say no member more keenly enjoyed its privileges. After he became entirely blind the members of the North Side made it their pleasing duty, to take turns in escorting him to the meetings, whenever the weather and his failing health permitted; and he frequently expressed his gratitude, and spoke of the meetings as the enjoyable events of the month. Blind and shut off in a large measure from later events, he loved to live over again the old army life in the papers, the old songs and the reminiscences of life in camp. Both socially and professionally the old soldier always found a sympathizing friend in Dr. Bogue, and as a citizen he was a man among men.

He was a profoundly religious man who exemplified its teachings by his every-day practical life of "doing good." Called from us before his three-score years and ten, yet his was a beautiful, well-rounded life, and one whose memory this Commandery will cherish. While we enter upon our records our high appreciation of our departed brother and express our own sorrow, we desire to tender to the loved ones in his stricken home our profound sympathy.

Oliver W. Nixon, Everett B. Preston, Albert L. Coe,
Committee.

BOOK NOTICES.

Addresses, Papers and Discussions in the Section of Ophthalmology at the Forty-fourth Annual Meeting of the American Medical Association at Milwaukee, June, 1893.

It was a happy innovation inaugurated three years ago by the Section on Ophthalmology to collect all papers read at its meetings and to republish them, after they were published in the Journal of the Association, as the "Transactions of the Section."

In the present volume we miss the familiar names of some members who in the past had been among the most active workers, and who always had something interesting and instructive to present to the meetings; but on the other hand it is gratifying to note the number of new contributors; for this is a hopeful sign of the growing interest taken by the ophthalmologists all over the land in the work of the Ophthalmological Section of the Association.

There were thirty-three papers read in this Section at Milwaukee, and although they are not all of the highest grade of excellence, every one interested in ophthalmology will find much valuable information in this book, which he can obtain at the small expense of $1.00 by applying at the office of this Journal.

SELECTIONS.

A Case of Intussusception, Operation, Recovery.—An eleven-year-old boy was attacked suddenly with persistent vomiting and bloody stools. A sausage-shaped tumor was discovered in the left hypogastric region. The lower end of the tumor appeared to be near the ileo-cecal valve; the upper end disappeared under the circle of the lower rib. There was tenderness on pressure. Laparotomy was performed and the invagination, which consisted only of the colon, was reduced with great difficulty. A gangrenous spot was discovered, about the size of a 5 cent piece, under which a tumor the size of a hazel-nut was found. An artificial anus was made, and closed in eleven to twelve weeks. The boy made a good recovery and was discharged five weeks after operation.—G. Lindemann in the *Centralblatt für Chirurgie*. January, 1894. [Abstracted for the Journal].

Academie de Medicine de Paris.—Session of Jan. 10, 1894, M. Proust called attention to the fact of an outbreak of malignant pustule having occurred, which was traced to an importation of Chinese goatskins.

M. A. Voisin reported a case of a female attacked with melancholic mania following a right facial neuralgia dating from 1870, which had resisted all treatment, and the woman died in his service from a uterine cancer, which was found at the necropsy. There was also compression of the frontal and parietal right ascending convolution by a sort of pool formed by the cerebro-spinal fluid. In a case of this kind, craniotomy was evidently the only efficacious treatment.

M. Galeowski read a paper showing that glaucoma is due to a lymphangitis of the eye obstructing the lymphatic channels and, notably, the canal of Schlemm. Repeated external sclerotomy is the best means of relieving the obstruction.—*Progrès Médicale*, Jan. 13, 1894. [Abstracted for the Journal].

E. Bassini's New Operative Method for the Radical Cure of Femoral Hernia.—This method of operating for the radical cure of femoral hernia is designed on an anatomical basis and besides being very simple has the advantage of showing many lasting results. It is evident that it will soon become as popular as Bassini's method for the cure of inguinal hernia.

Bassini shows that the femoral canal which is a funnel-shaped or triangular opening with its apex downward, is closed normally by the cribriform fascia which is directly connected with the fascia lata, Poupart's ligament and the fascia pectinea, and that neither the falciform process or Gimbernat's ligament exist as such, but are formed by the tearing and giving way of the cribriform fascia, thus forming the rupture. This occurs at the narrowest part of the canal in the femoral or crural ring.

Bassini here illustrates from a plaster cast, made by injecting plaster-of-paris into a femoral hernia, which shows plainly the position of this ring whose lower boundary is marked by the close underlying great saphenous vein at its junction with the femoral vein.

This position, as well as the normal tension of the femoral sheath, explains the fact that in a stricture or compression of a femoral hernia these veins are not affected. Normally, the tension of Poupart's ligament with the fascia lata and the cribriform fascia form a sufficient barrier against the descent of a hernia. The relaxation of these parts, as well as the separation of the fibers of the cribriform fascia, is accountable for the formation of a femoral hernia. This is also the cause of its greater frequency in women, who besides this have a broader pelvis than a male, and in whom the abdominal walls give way more easily.

The object of the operation is to bring the prolapsed and crowded parts back to their normal position and tension.

Bassini lays bare the sac, the fascia lata and fascia pectine

by an incision close under and parallel with Poupart's ligament. The sac is drawn well up above the crest of the pubis and an incision is made through it and the contents replaced in the abdominal cavity. The sac is then twisted on itself, pulled well forward and secured around its neck with clamps. The neck is then transfixed with several ligatures, the remaining portion cut away, and the stump replaced. This leaves the femoral ring plainly exposed and the structures forming the canal lie free. This is now closed with six or seven stitches as follows: The first stitch begins well up near the pubic spine and passes through Poupart's ligament. The next two stitches, near the femoral vein, lie parallel to the above, the fourth pierces the falciform process and the pectineal fascia, while the last stitch will be close to the point of exit of the saphenous vein. The ligatures are now tied, beginning from above, thus forming a letter, C. This is caused by the tension of the first three sutures which are depressed in the middle and lie close to the os pubis. Including the suturing, the entire operation lasts only from fifteen minutes to half an hour.

Bassini allows his patients to leave their beds in from eight to ten days, and dispenses with the use of a truss. In this manner he has operated on fifty-four hernias in fifty-one individuals (forty women and eleven men) ranging from 17 to 70 years of age. All recovered without complications. Eight left the hospital on the ninth day, twelve on the tenth day, five on the eleventh day and four on the twelfth day; the remaining twenty-one on the thirtieth day. None wore a truss and all resumed their usual occupations. Twenty-seven were kept under observation from three to nine years.

These good results speak clearly enough in favor of this operation, which for its simplicity should be recommended above all others.—ESCHER in *Centralblatt für Chirurgie*, January, 1894. [Abstracted for the JOURNAL].

MISCELLANY.

A. L. Neeley, M.D. of Leavenworth, Kan., has been appointed United States Marshal.

Back Number.—Members of the Association who do not keep a file of the JOURNAL will confer a favor by mailing to this office their copy of the issue of January 6, 1894.

Charles D. Rogers, M.D., formerly of Troy, N. Y., has been appointed Clerk of the United States District Court for the District of Alaska.

Dr. Laveran, well-known for his researches on the hematozon of malaria, was elected to fill the vacant chair in the Therapeutical and Natural History Section of the Academy of Medicine, Paris.

Restrictions against Tuberculous Patients Not Wanted.—During the past week a committee of the College of Physicians and Surgeons called upon the Philadelphia Board of Health, and in compliance with instructions protested against placing restrictions upon the movements of tuberculous patients.

Oppose Vaccination.—The Lutheran clergy and the local Turner Societies of Milwaukee have joined the anti-vaccination league, and it is said will try in court to fight the order of the Board of Health which requires all school children to be vaccinated.

The Greek Government has appointed Dr. D. Pavlides, Consul of Greece at San Francisco. He was educated at the Greek National College at Constantinople, and in medicine at the Ecole de Medicine of Paris. He is said to speak six languages.

Two Physicians Expelled.—A recent Berlin cable says that the Society of Physicians in Leipsic have expelled two members because they belong to the local executive of the Social Democratic Party. The physicians were at first requested to resign, but they refused to do so. The meeting which resolved to expel them decided also to amend the Society's regulations so as to exclude from membership all Social Democrats. This step is justified on the ground that many members of the Society who are army surgeons would be obliged to resign in case Social Democrats were admitted.

The Southwark Church Dispensary, Philadelphia.—The sum of $25,000 has been devised to the above named charity, by the will of the late Capt. George W. Stever of Philadelphia. Three other institutions will receive the like sum. The Protestant Episcopal Hospital, of the same place, has a donation of $5,000, under a bequest by John Boyer of Norristown.

Diphtheria.—Secretary Hunt of the New Jersey State Board of Health, has censured the Chesilhurst Township Committee, which is also the Township Board of Health, for dereliction of duty in the case of the two children of Michael Ball, who died recently of malignant diphtheria. The local Board of Health failed to compel the family to hold a private funeral as directed by County Physician Iszard, and a public funeral was held and many people, including nearly all the school children in the township, viewed the bodies, thus endangering their health and lives.

Infectious Diseases in France.—The French Minister of Public Instruction has issued certain regulations regarding the management of children sick with diphtheria, where those children are attending school. The period of exclusion of the sick child is placed at thirty days; successive disinfections must be practiced; no fruit may be consumed by the children during play hours. In respect to scarlet fever, the period of exclusion must be forty days, and the school is to be closed if several cases spring up within the first five days after the disease has been verified.

Another "Cancer Cure" Losing Ground.—The *Medical News* has been paying its respects to the notorious Mr. Stead—editor of the *Review of Reviews*—now in this country, for his advocacy of the nostrums of Count Mattei. Plain water was sold in London under the names of white, red and green electricity, at exorbitant prices, until an investigating committee compelled Mr. Stead to withdraw his approval from the smart scamps who had been trading on his reputation. A brave English journal, *Food and Sanitation*, states that the income of the representatives of the Count Mattei remedies was for a time at the rate of a half-million dollars a year.

Higher Requirements for Entrance to Medical Colleges.—The Illinois State Board of Health amended the schedule of requirements for admission to medical colleges by taking out of the hands of the college the examination in the elementary branches of education, and requiring either a certificate or diploma from a literary and scientific college or high school or, at least, a second-grade teacher's certificate. A curriculum of studies for schools of midwifery was also adopted. A committee was appointed to draft an outline of sanitary work throughout the State, and the Secretary was ordered to issue a "preventive disease" circular on tuberculosis.

The officers were reëlected as follows: Dr. William E. Quine, Chicago, President; Dr. J. W. Scott, Springfield, Secretary; and Dr. B. M. Griffith, Springfield, Treasurer. The Governor has reappointed Dr. Julius Kohl of Belleville, a member of the Board.

Minnesota Lunacy Law Unconstitutional.—The Board of Trustees of the State Hospitals for the Insane met at St. Paul, January 30, for the purpose of considering what action, if any, can be taken to meet the circumstances arising from the recent decision of the Supreme Court declaring the insanity law of 1893 unconstitutional. The officers in charge of the various asylums and the members of the State Board find themselves in a very peculiar and delicate position, owing to the fact that there are at present some 740 insane patients in the various asylums who were committed to their custody under the unconstitutional law. It would be a calamity to release these insane patients, and there might arise some difficulty in detaining them. The meeting was called to devise some method of meeting the complication, and it was considered the wisest course to meet in executive session until a satisfactory plan is decided upon.

Those present at the meeting were President J. W. Mason,

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ORIGINAL ARTICLES.

THE SCOPE OF DERMATOLOGY.

Chairman's Address read in Section of Dermatology and Syphilography, at the Forty-fourth Annual Meeting of the American Medical Association.

BY LOUIS A. DUHRING, M.D.

PROFESSOR OF DERMATOLOGY IN THE UNIVERSITY OF PENNSYLVANIA. PHILADELPHIA.

On the occasion of the last annual meeting of this Section of the ASSOCIATION, the honor to preside over the deliberations of the present meeting was conferred upon me. It affords me pleasure to greet you as members of the ASSOCIATION, and especially as attendants upon the work of this Section, whose importance I believe must be more fully recognized by the profession with each succeeding year. Before taking up the original papers to be presented for reading and discussion I would ask your attention for a few moments to consider of what dermatology actually consists. The subject, I believe, will not prove uninteresting nor without profit practically. Let me propound the questions, What are so-called skin diseases, and what is their nature? Which diseases are entitled to be designated "skin diseases?" Is it possible to separate them from the many general diseases accompanied by cutaneous symptoms?

Answers to these questions may at first thought appear easy, and so they seemed to the writer many years ago, when thoroughly imbued with the spirit of local pathology, as taught by his former and respected master Hebra, it was deemed all-sufficient to study cutaneous diseases purely objectively. But the questions propounded upon investigation really became difficult problems, especially with the light that has been thrown upon dermatology by comparatively recent studies. The field, viewed in every direction, has become immensely enlarged, and the amount of work done, both clinical and pathological, has been remarkable. I believe, however, that a satisfactory solution of these problems may be found. The questions that immediately confront us are, shall the term, "skin disease," continue to be used in its ancient sense? Shall the affections of the skin be looked upon as morbid entities, as diseases whole and complete in themselves and confined to the skin? Or, taking a broader view of the subject, shall they be defined so as to include all manifestations that may occur upon the integument irrespective of the symptoms, cause or nature.

The first and restricted proposition is that according to which these diseases were studied and classified a century ago, by Plenck in Germany and by Willan in England, when the list of diseases was small and knowledge of them meager. I have no desire to belittle the work done by the fathers of dermatology. Willan, especially, was an eminent general physician as well as a distinguished dermatologist. His treatment for the commoner affections of the skin was both judicious and successful. But the important questions of etiology and pathology were then for most diseases not at all understood. Very little was known on those subjects. The origin of most disease was regarded as "obscure." The facts that a mite was the sole cause of scabies, and that ringworm was due to a fungus were still unknown, while the observation that almost all the drugs in the "Pharmacopœia" are capable of producing disorder of the skin was not even suspected. Affections of the skin were regarded mainly objectively, and were studied much as a model or a picture might be viewed. Beyond the actual expression on the integument they were not closely investigated; the causes were regarded as obscure; and this mode of studying them has held good through decades, up to almost the present date. This method is in no way to be criticized, so far as it goes, but by itself and without the assistance of general pathology, it is far too restricted to meet the requirements of existing knowledge. It fails to recognize the important fact that the integument is a part of the whole organism, and therefore is subject to the great laws of general pathology, and that diseases affecting the integument are not only to be studied as localized areas of disease, but also in their relation to the system at large.

For the majority of cases no laws can be laid down tending to separate the local from the so-called general diseases. This is particularly true of the inflammatory affections, and I believe in many cases it is wise not to press such questions too closely in our endeavor to determine these intricate problems. Local pathology, interesting and satisfactory as it is as a study, must never be permitted to outweigh the general process, to which in many instances we must look as the *fons et origo* of the disease. That some diseases are strictly local in all their aspects will be denied by no one, but it is practically often difficult to decide where to draw the line between such affections and those due to influences and causes remote from the skin, as, for example, in the case of the many and often obscure reflex affections.

On the other hand, it is not difficult with our knowledge of to-day, to give examples of some true skin diseases. Notably among these may be mentioned the local parasitic affections, the inflammations due to numerous external causes, as for example the rhus plant and certain of the hypertrophic, atrophic and neoplastic diseases, such as callositas, clavus, cornu, molluscum fibrosum and molluscum epitheliale. In these affections, and in some others that might be cited, as far as our knowledge extends, the skin is the only organ of the body invaded at any time in the course of the disease. But while this holds true for a considerable number, there are still many that are in reality widespread diseases,

the skin being only one of the organs involved by the process.

As instances of such may be cited the so-called exanthemata, as well as other eruptive fevers, the eruptions due to various poisoned states of the system, as in septicemia, glanders, leprosy and syphilis. There also exists another group of well-known cutaneous manifestations in which it is difficult to determine whether the process is really confined to the skin, and whether it does not also involve other structures of the body as, for example, the epithelium generally, as in pityriasis rubra and dermatitis exfoliativa. Another group would comprise herpes zoster, pemphigus and the like, where the nervous structures, central or peripheral, are in some way at fault.

Still another class consists of diseases which, while eminently skin diseases, are in some cases, at least, dependent upon certain peculiar states of the economy for their existence, as a type of which psoriasis may be given. As an example of the effect of the state of the system at large upon this disease, I may cite the case of an old gentleman, an experienced physician, whose chronic and inveterate psoriasis had resisted all manner of internal and local treatment, but who upon going to sea immediately experienced relief and a rapid diminution in all the symptoms, so that in less than a fortnight he had practically recovered from a disease which had for a long period proved entirely intractable to our best remedies.

Another well-defined disease attacking the skin is eczema. While this is often a local affection, it may also be started into existence and kept up by serious internal derangements of the economy. In the latter cases it must be regarded in part, at least, as a symptomatic affection, as in the case of other symptomatic disorders, as urticaria; for with improvement of the digestive and assimilative functions or nervous system the eruption improves or disappears. These observations are particularly striking in the case of infants and children.

But it is not so much my purpose to specify and to differentiate the local from the general diseases affecting the skin, as it is to direct attention to what I believe to be an important truth in medicine, namely, that many cutaneous lesions which have long been and still are regarded as local skin diseases are really cutaneous expressions of certain general pathologic processes, due to varied causes. If this proposition, which might be elaborated, be accepted as an accurate observation, it brings us to the point I am desirous of establishing, namely, that our ideas of dermatology should be greatly enlarged. I am firmly of the opinion that this branch of medicine should include all morbid manifestations that appear on the skin, whatever may be their cause, their nature and their character. Dermatology has properly to do with the integument and all that pertains to it, and moreover with all the varied causes that may disturb that organ. Thus the exanthematous and the numerous and diverse symptomatic eruptions, whether superficial or deep-seated, fugitive or persistent, are all entitled to a place in the group. One observation in support of this view is that practically it is often impossible to differentiate the several varieties of cutaneous inflammation which resemble one another, except through the causes which produce them. It is a notable fact that the same pathologic state of the skin and the same lesions may be produced by several and even diverse causes, directly or remotely, entirely distinct from one another, as in the case of acne, acne rosacea and urticaria.

Thus we note in practice that the lines separating the so-called idiopathic from the symptomatic diseases are far from being so sharp as is generally supposed. Authors of text-books and systems of dermatology would have us believe that the various diseases may all be arranged and satisfactorily classified, and that they may in all cases be readily differentiated from one another. While this undoubtedly holds true for the majority of cases, ample allowance must be made for atypical, irregular and anomalous forms of disease, of which there occur, I am convinced, more examples than most authors are disposed to admit. Nor is sufficient latitude given in describing disease in general for complications which may occur, nor for the merging of pathologic processes into one another. On this latter point, in particular, I would lay stress, especially as expressing certain anomalous forms of diseases. Mr. Hutchinson, of London, was one of the first to direct attention to this point, of which we all I am sure have seen examples.

As our knowledge of disease grows, so does the list of diseases increase, new affections, new varieties and combinations appearing and being described. To illustrate this observation we have but to look over treatises on dermatology published twenty-five years ago and to compare them with the works of to-day. The growth in this direction has been remarkable. Not only has the list increased, but it is still growing from year to year. Observations of this kind go to show, I think, that it is only a matter of time when every lesion that may occur on the integument must be included in dermatology. There was a period, not many years ago, as most of us can remember, when erysipelas was regarded as an exanthema—an exanthematic fever, and as being therefore altogether beyond the pale of dermatology. In those days that disease, it was said, was not a skin disease but a constitutional or a general disease, and that its relation to the skin was only incidental. How fallacious was this view, how slight our knowledge about this disease then, I need not more than refer to. I believe that before long certain other diseases will be recognized as being properly entitled to a place in cutaneous medicine which now are relegated elsewhere. Such a grouping should obtain, not with the view of magnifying the subject, but that the various similar and dissimilar diseases and the expressions which they are capable of producing on the skin, may be brought together for purposes of study and comparison.

The time has arrived when we should endeavor to recognize not only the particular form of eruption, but what is more important, also, the cause which has produced it, upon which success in treatment may depend. Diseases of the skin must be studied from the standpoint of general medicine. It is not possible to comprehend the meaning of certain forms of inflammation of the skin without taking the broadest view of the subject. Thus if we are inclined to regard such diseases as dermatitis exfoliativa, pityriasis rubra, lichen ruber, dermatitis herpetiformis, and the like as mere local cutaneous inflammations we fail to understand the significance of the symptoms. Symptoms and causes must be studied together. The former are elementary, and constitute

the alphabet of dermatology, which it need not be stated must be learned. But eruptions in themselves, as mere forms of superficial inflammation, are by no means so important as the relation of the lesions to the causes. To express this idea more plainly, take the disease, eczema, as an instance. Here in some cases, as in neurotic eczemas, the discovery of the causes at work in producing the eruption is the key to the situation, without understanding which no success in the treatment will probably be obtained, and many other similar instances might be cited. Thus it happens that some diseases are practically uninfluenced by local treatment, and that not until we investigate their possible relations with the general economy do we appreciate their nature. The general practitioner, who has been trained in cutaneous diseases, has the opportunity of advancing dermatology quite as much as the specialist, and his services in aiding the good work can not be dispensed with. Some of the best work latterly has been done by men who are not only accomplished dermatologists but equally distinguished general practitioners of medicine and surgery. We owe a great deal to such writers and teachers as Jonathan Hutchinson, Paget,Stephen Mackenzie, Fagge, Pye-Smith, Robert Liveing, Duckworth and McCall Anderson.

The objective study of skin diseases is fascinating, and has without question its uses in more ways than one, but it is important that we take steps to advance beyond this elementary stage of knowledge, by attempting to recognize and understand the meaning of the local manifestation. It has been, and still is, too much the custom to study diseases of the skin in the light of pathologic pictures, to name the local manifestation and to so label it as a disease. It is much easier to give the disease a name and to label it than it is to comprehend the process at work. The former is comparatively unimportant for the patient, the latter a point upon which recovery may depend. The nature and meaning of the process in connection with the cutaneous symptoms has not received enough attention, and I believe this to be one reason why the treatment of many of these diseases in the past has been so notoriously unsatisfactory. At all events the relations of the cutaneous disturbance to other structures and to various states of the economy should be much more thoroughly investigated by dermatologists than is the present custom.

To recognize any one disease, say syphilis, in its varied manifestations on the skin, requires familiarity with all other diseases with which it is liable to be confounded. Therefore, to be an accomplished diagnostician, one must be conversant with every form of eruption to which the skin is liable, including the not rare atypical and aberrant forms. In regarding only the well-known and clearly defined obvious diseases of the skin as belonging to dermatology, this branch of medicine is not only belittled, but the true meaning of many lesions on the skin is not appreciated. I would insist, therefore, that the manifold and varied changes that take place in the skin due, as we now know, to such a multitude of diverse causes, should be viewed as phases of cutaneous medicine rather than as skin diseases. The idea of this vast array of diseases being morbid entities, for which the integument alone is accountable, must in many cases, at least, be abandoned in favor of the principles of general medicine.

Allusion has been made to the fact that the same or similar lesions may be called forth by wholly different causes. This also is a point to which attention has not been sufficiently directed by writers. As illustrative of the observation, the similarity in the eruptions of eczema and scabies may be referred to. Here the causes at work are different but the result, as far as the skin is concerned, is much the same. On the other hand, the same cause may produce entirely different cutaneous lesions. A striking example illustrating this idea is found in dermatitis herpetiformis. Here the same cause at one period of the disease gives rise to an eruption resembling erythema multiforme, at another period to herpes, again to impetigo, and finally to pemphigus. We note thus that one process may occasion numerous distinct lesions, which individually may resemble what have been heretofore regarded as well-known distinct diseases.

If we would study dermatology with the view of learning all that it can teach us, not only of the skin but of general medicine, we must look in the majority of cases beyond the mere eruption, valuable and important as this is in all cases as a guide to the pathologic process at work. While, even in the case of local affections, it may not be necessary to look beyond the skin itself, we may nevertheless find interesting facts bearing on cause and pathology by searching within the economy. The cutaneous disturbance in many instances is distinctly indicative of some irritation or disorder in other regions, organs, structures or fluids of the body. That we are not able always to discover and to designate the causes, merely shows our ignorance. I am of the opinion that the relations of the skin to other parts and functions of the economy are at the present date only partially understood, and that there are many points which will sooner or later be elucidated which will bring cutaneous medicine still closer to general medicine. Much, however, has been accomplished in this direction during the past twenty-five years, and I am pleased to add that a fair proportion of this good work has come from the labor of our countrymen.

This brings me again to the question propounded at the beginning of these remarks, viz.: What are so-called skin diseases? The answer, I believe, has been given through the principles to which attention has been called. It is simply this, that our conception of the scope of dermatology must be so widened as to include every pathologic manifestation which occurs in the integument, irrespective of the cause or the nature, from a practical standpoint. The great value and importance of dermatology is that it should teach us to know the nature of various processes, as they affect not only the skin but the whole economy. Dermatology should be for the physician as a key with which the skin is made to reveal, in many instances at least, the nature of the process at work in the general system or in special organs, which without this aid might remain obscure. Striking examples supporting this view are noted in syphilis and in leprosy, where the cutaneous manifestations are sometimes the only indication of the presence of these diseases in the body. The recognition of the nature of the cutaneous lesions is often of the greatest value in the general diagnosis. This observation applies pointedly in the case of the erythemata and certain general infectious diseases.

While, therefore, not losing sight of the fact that

some cutaneous diseases are strictly confined to the structure involved and have no other than a local significance, there are many in which the skin lesions must be regarded as being merely one set of a series of symptoms due to some special or general cause having its seat in other structures as well as in the integument. The part that the nervous system plays in the production of varied diseases of the skin is, I am firmly convinced, immense. While its power and influence as a factor is well understood to-day, owing largely to the special writings of such observers as Eulenberg and Guttmann, Bulkley, E. Long, Fox, Crocker, Schwimmer, Kopp and many others, I am of the opinion that its influence over the skin is at present far from being properly recognized. The nerves are avenues by which a multitude of diverse influences reach the skin. The future will, I feel sure, see this particular subject much more elaborated than it is to-day.

ERYTHEMA EXFOLIATIVUM RECURRENS.

Read in the Section on Dermatology and Syphilography, at the Forty-fourth Annual Meeting of the American Medical Association.

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The erythemata have always possessed a large amount of interest for dermatologists, and the numerous apparently aberrant forms which have been observed in late years have invested the subject with an amount of importance which was not conceded to it heretofore. It is more particularly in regard to the etiology of the different forms that research has been made. In addition to this there have been presented certain forms which have excited much interest on account of their assumed rarity, but which are, possibly, not so infrequent either on account of mistakes in diagnosis, or ignorance of this pseudo-rarity, or an indifference to making any record. These circumstances, singly or combined, have conspired to produce an impression in many instances that a certain condition or group of symptoms was rare, when in reality it was common and had either escaped attention or failed to arouse any interest, under the mistaken idea that it was so well known as not to deserve even a passing mention. Under these circumstances, every new record helps to swell the list and without detracting from the credit of those who first noted the matter, it contributes to a vulgarization of a certain amount of knowledge which should come within the grasp of every one. It is for this reason that I wish to place upon record a condition which is an apparently unusual one, but which in my opinion is observed much more frequently than medical literature would lead us to suppose. I refer to intermittent scarlatiniform erythema or erythema exfoliativum recurrens. Medical literature, up to the present, seems to be rather meager, so far as the number of accounts of this trouble is concerned. A hasty search through current medical literature and works on dermatology has yielded but small results and larger returns will have to be left to the future.

Before entering into any farther considerations upon the subject, I will give the history of a case as furnished by Dr. Edward C. Bennett, under whose care it occurred, and to whom I am indebted, not only for the anamnesis but for the specimens which are figured, as well. I am desirous of returning my thanks to him for this, as he kindly conferred with me regarding the case which he very justly considered an unusual one.

In order that a more complete record of the disease under consideration may be made, I will append condensed histories of other cases which have recently appeared in print, in order that a more easy reference may be made and the points of similarity, both from a clinical and etiological point of view may be made more apparent, and thus enable the reader to follow the reflections deduced, with greater facility.

The cases which I propose giving do not by any means include all those which have been reported, but they are sufficiently numerous to give a general idea of the characteristics of the disease, as well as to give a certain amount of information in regard to the clinical peculiarities of the process, and thus afford an opportunity of drawing some conclusions in regard to the etiology of the process. In addition to this, it affords us almost a certainty in deducing conclusions as to its comparative frequency. If we are to judge from the number of cases which have recently appeared in current medical literature, we would be led to the conclusion that the trouble while not frequent is far from being unique or even rare.

With these few prefatory remarks, I will proceed to give a brief résumé of a few cases which have recently been described and then make a brief analysis of them:

Case 1.—(J. Frank, M.D. and W. C. Sandford, M.D., in the *American Journal of Medical Sciences*, August, 1891.) John H. P., miner, 34 years of age, well-built and healthy. Skin is perfectly normal. His parents are living as also maternal grandmother; is the second of a family of thirteen, all of whom are living. On July 24, following his birth (Dec. 29, 1857) he was suddenly taken ill, vomited and in a few hours the entire surface of the body was scarlet red. The symptoms subsided in a few hours, but on the fourth or fifth day following the attack the entire cuticle was cast off, and a few days later the nails of his hands and feet were also shed. This was repeated every year on the same date. The patient first remembers the shedding in 1865 and he states that these attacks occur each year on July 24, usually at 3 P.M., and never later than 9 P.M. The paroxysm begins abruptly. Patient has a feeling of lassitude and weakness of fifteen to twenty minutes duration, followed by muscular tremors, nausea and vomiting, a rapid rise of temperature, skin and mucous membrane of tongue and mouth become red and inflamed, and are hot and dry. No perspiration appears after the paroxysm begins until the cuticle is cast off. The patient has been delirious three times during these attacks, once for nine days. In his early life the cuticle began to shed on the second or third day after symptoms appeared, and was complete by the fifth day; but each succeeding year it takes a little longer, until now it is ten or twelve days before shedding is complete. The cuticle can be detached in large sheets, and from the hands and feet in the form of gloves and moccasins. The nails are loosened and crowded off in about four weeks after the acute stage.

Here follows a detailed account of the attack:

Vomiting took place, the erythema extending visibly. Pulse 68; temperature 97 degrees. The highest pulse noted and temperature observed during the attack were 92 and 103 degrees respectively. July 26, two days after the beginning of the attack, the skin appeared normal, the temperature having returned to the normal. July 27 the epithelium of tongue and mouth came away. July 28, perspiration was free on forehead and under eyes. The cuticle on chest was raised in the form of blisters by the perspiration. Desquamation then set in and continued until August 11, when the left moccasin was removed. After the removal of the cuticle the skin was very soft and delicate; and where the former was normally thick, the new skin was very sensitive. August 26, the nails of the little finger and second finger of right hand were shed. September 2 those of the little finger, second and third fingers of the left hand were retracted. Both thumb nails removed September 5; and the nails from

the big toes which were the last to come off, on September 8. The other nails were cast off in pieces while patient was at work, so that the exact dates could not be noted.

The above is certainly unique in one respect—the recurrence of the trouble on exactly the same day of the year for so many years in succession. It is certainly deserving of more than passing attention for this reason.

Through the kind permission of Messrs. Lea Brothers & Co. of Philadelphia, I am able to present the illustrations occurring in Dr. Frank's excellent paper. A much better idea may be gained of the desquamation which occurs, through this graphic representation, than mere words could convey. As may be seen we have presented a picture of the patient desquamating and one of the portions of exfoliated epidermis which were secured.



Fig. 1. Dr. Frank's case of erythema exfoliativum recurrens.



Fig. 2. Epidermis shed in Dr. Frank's case.

Case 2.—(Henry William Blanc, B. S., M.D., *International Clinics*, October, 1891.) J. C., white, male of 23, whose occupation was cotton scoreman. Both parents living and in good health. Three brothers and two sisters living and in good health. When 10 years of age he was treated for what was called scarlet fever, which lasted several weeks, leaving him perfectly well after desquamation. The following spring all the symptoms of scarlatina reappeared. From this time until 1884 he had two attacks annually. In 1884

he had none. Latterly the attacks have been irregular, although generally appearing twice a year The intensity of the fever and eruption has been growing milder and the desquamation more marked. On several occasions all the finger nails have fallen off.

The attack begins by a feeling of malaise followed by a fever lasting forty-eight hours. The rash appearing on the second or third day, lasts about four days. Paroxysms of itching occur during this time. The skin dries up and formication is present. An attack lasts about five weeks, although when the nails are shed it occupies one month longer.



Epidermis shed from hands and soles of Dr. Blanc's case. The only rupture of the gloves occurred when the hands were withdrawn.



Epidermic glove removed almost complete from Dr. Blanc's case of erythema exfoliativum recurrens.

Fig. 3 and Fig. 4.

In the description of an attack we do not find nausea mentioned. There existed constipation, however. The highest temperature recorded is 102 degrees; pulse 85. Patient feels nervous as eruption is spreading over body.

When the patient was peeling in large flakes, the skin was noted to be dry and in some places raised like a blister, but containing no water beneath. The new skin was very tender. Patient stated that each time he desquamated all of his freckles passed off. The patient complained of a cold sensation and very tender surface when desquamation had set in, and he declared that when the skin first began to crack he had had a chilly feeling lasting four or five hours.

Through the courtesy of the J. B. Lippincott Co. of Philadelphia, I am enabled to present a plate illustrative of the gloves and moccasins shed by this patient. As will be seen the gloves are complete with the exception of those portions which were adherent to the nails. The soles, only, of the moccasius are presented as the sides were torn into small pieces by the shoes of the patient. He also stated that he ordinarily wore gloves during the period of desquamation of his hands.

Case 3.—(Henry William Blanc, B.S., M.D., *International Clinics*, October, 1891.) Mrs. S., aged 21 years. In 1883, when 13 years old, she had an attack of scarlatina lasting about eight weeks. She was well until 1885, when she had a second attack of scarlatina lasting about six weeks. Nothing especially noticeable was observed in the second attack, except that the desquamation was excessive. In October, 1889, a scarlet rash similar to the others appeared, unaccompanied by fever. It remained two or three days and disappeared, followed by profuse desquamation which lasted from five to eight weeks, the epidermis peeling in large flakes. During the intervals between these attacks her health was very good, menstruation being regular and painless.

In March, 1890, she was married, and during the next month another athermal rash appeared. It was not very deep except on the hands and feet. A large amount of desquamation followed. In January and February, 1891, she had the rash followed by peeling of the epidermis. She had borne a baby during the preceding month of December, and during her attacks she nursed the baby regularly without communicating the disease.

There existed hyperesthesia of the skin when seen during the desquamation of the February attack. The skin had a slightly transparent appearance suggesting anemia. On the neck, forearms and legs the skin was dry and scaly, peeling easily when rubbed. The patient stated that immediately following the rash there was diminished sensation, which became transformed to hyperesthesia when the desquamation occurred.

Five weeks after this examination the patient contracted a severe cold, and the next day had a burning sensation in the fingers, palms of the hands, toes. back, throat, tongue and eyes. These parts were fiery red. This was another attack.

No history of vomiting or nausea is given.

Case 4.—(Case of Dr. W. T. Bolton, reported by Henry William Blanc, B.S., M.D., in *Journal of Cutaneous and Genito-Urinary Diseases*, January, 1893.) Maggie P., age 20, while perspiring freely had perspiration suddenly checked, May 6, 1892. Had nausea and vomiting with pains in back and limbs. Was given a purgative. May 9 the temperature was 99.6, pulse 104, nausea and vomiting. Dizziness and pain present. Skin of face swollen. Face, neck and upper part of chest erythematous. Patient stated that she had had a similar eruption in February, 1890, and in August, 1891. May 10, 1892, the rash had extended over whole surface of body. On next day epidermis of upper eyelids beginning to desquamate. On May 12 the mucous membrane of roof of mouth exfoliated in a solid mass. On that and the two following days the epidermis of the entire body was thrown off. The epidermis of the hands and feet came off without a break. The nails were loose but did not come off.

May 31, twenty-five days after the beginning of the last attack, she was again attacked in a similar way, the symptoms being milder. June 4 the exfoliation occurred.

The nails of the fingers and toes fell off after the first attack, and also after the two previous ones.

Therapeutic interference was very little. One dose of quinin and phenacetin, two grains and a half of each, was given in the course of the disease, and several times the skin was anointed with vaselin and quinin.

None of the relatives of the patient has ever suffered from a similar condition. The first time it occurred the patient supposed that she had scarlet

fever. A fact observed was the low pulse rate and comparatively small febrile reaction.

It will be observed that in the three preceding cases, a particular note is made of the fact that the parents were healthy persons who never suffered from any similar trouble. In fact, this seems to be noted in all the cases observed.

Case 5.—(Personal. Case seen through the courtesy of Dr. Edward C. Bennett. Unpublished.) Mrs. A., a brunette of medium height and weight, 26 years of age, has always enjoyed fair health. She has one child and has had one miscarriage, since which time her menstruation has been irregular and painful. In September, 1891, she became ill, the symptoms being ushered in with nausea and vomiting, high fever and pain distributed over the entire body. On the succeeding day there appeared an eruption which extended over and involved the entire cutaneous envelope with the exception of the face and neck. The eruption was an erythema accompanied by intense itching. The third day after the skin assumed an appearance suggestive of edema, being clear and apparently puffed up. It began to crack and separate from the body, i.e., the horny layer of the epidermis began to exfoliate. The patient removed this exfoliated epithelium from her hands and feet entire, in the form of gloves and moccasins. She also removed long strips from her trunk, arms and legs. There was desquamation of every part of the body with the exception of the scalp and face, in which there was no change whatever. The nails were not shed, nor was there any falling out of the hair discoverable in any portion. When the desquamation had arrived at an end, the exposed new skin was intensely red in color and glazed-like in appearance. In addition to this there existed marked pruritus. In about one week from the onset of the attack the affected epidermis had returned to its normal state both objectively and subjectively.

In June, 1892, Mrs. A. had another attack which was in every respect an exact counterpart of the one which has just been detailed, the onset being the same, and the various periods intervening between the different conditions being of the same duration.

Dec. 15, 1892, was the date of a third similar attack, with this exception, however—the patient was suffering at the time with typhoid fever.

So far as the treatment employed is concerned, it may be well to state that it always consisted in the administration of the following, which seemed to act efficiently:

R. Quinin sulphatis gr. iij.
Pulv. capsici gr. ¼.
M. Ft. tal. dos. q. s.
Sig. One such dose every three hours.

The symptoms of the case were always strikingly malarial, and on this account the quinin was administered.

For the condition of the skin which succeeded the desquamation, the following ointment was ordered with complete success, as it proved efficient in relieving the sensitiveness of the denuded integument and caused a disappearance of the pruritus, besides acting as an efficient protective during the complete restoration to the normal of the horny layer:

R. Campho-phenique ℥j.
Albolene (solid). ℥iij.
M. Ft. ungt.

A few points which have been noted by the patient and to which she has drawn attention are the following: Each attack of desquamation comes on just one week before the menstrual flow. Her attention was called to this circumstance by the fact that it occurred each time in that manner, and it can hardly be looked upon as a coincidence. She further states that after taking an ordinary dose of quinin, she experiences a prickling, tingling pain in the skin of the thumb. On this account she is inclined to believe that the general desquamation is due to the remedy, but it is evidently a *non sequitur*.

The plate illustrates portions of the exfoliated epidermis obtained at two different periods. The upper one, which is nearly a perfect glove, was removed in June, 1892, but little care being taken. The lower figure is a representation of the epidermis of the palm which was removed in December, 1892. There was no intention of preserving this, which accounts for its rather ragged and incomplete appearance. However, the two are good examples of the manner in which the desquamation occurs—*en bloc* and distinctively separate from examples of furfuraceous or large squamous exfoliation.

The above cases are given without making any attempts to resuscitate more or less doubtful analogous cases from literature. The present ones are



Fig. 5. Epidermis shed in author's case.

distinctly marked out, and have been described without much inclination to fit them to any particular pathologic view. Besides this, they have occurred within a very few years of the present day, and under the light of a more extended knowledge of dermatology, thus avoiding their being labeled with names which are not only inappropriate but absolutely misleading. For there is no doubt, whatever, in my mind, that the various desquamative erythemas have led to a great confusion of terms; not to mention the almost impenetrable chaos which has been occasioned by the mixing up of these various affections with the dermatites having analogous characteristics and yet

wholly distinct in many respects. These distinctions are not wholly etiologic in character nor is it an absolute necessity to make anatomo-pathologic studies to establish them. Close attention to clinical details will suffice to accomplish the task, as well as to clearly distinguish from each other the various processes which are incidental to the problem. It is for this reason that I propose to discuss, primarily, whether the disease before us is a dermatitis or an erythema.

To begin with, I desire to speak of the clinical characteristics of the two processes, before examining into the pathologic anatomy of the conditions. So far as observation can teach us, an erythema is always a transitory condition, in so far as it remains in *statu quo*. Its natural termination is embodied in a retrograde metamorphosis eventually leading to the normal condition. Moreover, there is no destruction of tissue, properly speaking, but merely the loss of such epithelial formations as are superficial and which are susceptible of degeneration, without the necessity of the formation of substitutive fibrous formations, such as are ordinarily denominated under the name of cicatricial tissues. In the case of inflammation, we find that the process is entirely distinct. In the inflammatory process the changes are not limited to the superficial structures, but they encroach upon the deeper formations and, as a result, we have their involvement manifested by a perceptible thickening which is a characteristic of the change. Destruction of a more or less limited extent goes on and in the reparative stage the loss of tissue is made up by a substitutive formation which does not always share in the nature of the tissues which formerly existed.

So far as the skin is concerned, we find that erythema is characterized by an increased vascularity of the epidermis, chiefly, although the cerium may participate in the exaggerated circulation. The process is essentially an angio-neurotic one, and may manifest itself in a generalized or a circumscribed form attended or not with edema, and certain subjective sensations. The lesions, however, which are present are almost entirely included within the limits of increased vascularity, and the presence of various and varied subjective sensations. The most prominent symptoms are superficial in character as well as in their limitations, and the culmination of severe forms is manifested in desquamation which may vary in intensity from a furfuraceous type to a separation of the horny layer in large sheets. In inflammation we are confronted with an entirely different history and appearance. We find that a prominent subjective symptom is pain of a deep-seated character. There is also a susceptibility to an aggravation of the condition manifested by lesions of a more or less destructive character, suppuration being a not infrequent accompaniment and necessarily including in its development more or less destruction of tissue which is objectively manifest. It may be stated, however, that true inflammations of the skin exist wherein we do not have any clinical manifestations beyond a marked hyperemia and abundant desquamation. But it should not be forgotten that, in such cases, there is more than such a superficial survey would indicate. We have clinical evidence of the deep nature of the process shown by the thickening of the skin. Not only this, but there are general symptoms which are also indicative of the graver character of the malady. The chronicity of the process itself is an indication pointing to its inflammatory nature and the general disturbance, so often noticeable, is of such a character as to determine the existence of more than a superficial process. It will be found in this connection that in erythemata the general symptoms are of an acute character, ofttimes quite marked, yet of a comparatively transitory nature as a whole. In inflammations, on the other hand, they are not of so acute a character, but are more lasting; and it is this very element of persistence which exercises so patent an effect in the production of inflammatory changes in the integument.

I will not weary you with the recital of examples in illustration of the few generalizations I have presented, but will enter upon a particular reference to the cases I have hastily summarized, in order to justify the opinion that they should properly be included under the erythematous diseases, in preference to the exudative or inflammatory, and that the name which has been proposed for this unusual process is one which is proper and distinctive.

We find, upon examining the records of these cases that the scarlatiniform eruption which preceded the desquamation spread with great rapidity resembling very much, in this respect, the erythematous processes occasioned by the ingestion of particular remedies in certain individuals. Another peculiarity attendant upon this generalization of the hyperemia, is the fact that it suddenly stopped short at a particular point, when the process of retrogression seemed to take place immediately. These are certainly not the usual marks of an inflammatory process, such as we ordinarily observe. For it must not be forgotten that the desquamation which is so abundant in the disturbance with which we are dealing, is rather a result of the process than a part of it. In the same manner, the exposed epidermal tissues are the objective indications of a loss of a certain portion of substance due to the sudden hyperemia causing an exfoliation of the horny layer, and thus leading to the condition observed. If we take any marked dermatitis or inflammatory condition of the skin, no doubt whatever can exist as to the complete difference existing between it and the process under consideration; and an inquiry into the pathologic anatomy of each one will completely establish the fundamental characteristics of each in such a manner as to leave no room whatever for any reasonable doubt as to the proper position to be assigned to the trouble I have described.

Dermatitis is a term which has been much abused in dermatologic nomenclature, and it has been the cause of leading many into errors which they would never have adopted had another word been used. Thus we find the generic appellation of "dermatitis medicamentosa" applied to a series of cutaneous phenomena having in common a similar causation, but frequently differing widely in the manifestations which are presented. The majority, I might say, are erythematous in nature and the homely expression of "medicinal rashes" is rather more close to the mark if not as elegant in diction. Another error which has led to a misconception of proper terms is the erroneous idea that desquamation is necessarily a result of inflammation, than which no greater mistake could be made. In the particular case in point, a further source of error would be

furnished by the observation of cases of dermatitis exfoliation or of pityriasis rubra, which to the superficial observer present many points in common with erythema exfoliativum; although an accurate observer would certainly be able to see so many distinctive characters as to almost draw the line of demarkation with sufficient sharpness to make it patent even to one not trained in the observation of diseases of the skin. I will now briefly consider the pathologic anatomy of the two conditions, as it will contribute in no small degree in throwing light upon the question before us.

The microscopic anatomy of a typical pathologic dermatitis and of an exfoliative erythema will serve better, perhaps, to explain the difference in the clinical pictures presented. I have chosen as illustrative examples two conditions which are sufficiently



Fig. 6. Relapsing desquamative scarlatiniform erythema.

c.	Stratum corneum.	*p.*	Papilla.
c'.	Portion of above exfoliating.	*t.t.*	Embryonic cells.
c''.	Lowest portion of stratum corneum.	*T.*	Prickle cells.
e.	Stratum granulosum.	*v.*	Vessel.
M.	Stratum mucosum.	*f.*	Hair follicle.

well marked to demonstrate the points in question. In order to eliminate any possible personal equation, I have borrowed the illustrations from other authors. It will be found that the essential differences between the two are so well-marked as to leave no possibility of a doubt. Petrini presents a section of a case of relapsing desquamative scarlatiniform erythema (Comptes Rendus du Congrès Internat. de Dermat. et de Syphilig. de 1889. G. Masson, 1890, p. 44 et. seq.) which for all practical purposes is a disease identical with the one under consideration. Here we note that the upper portions of the stratum corneum are distinctly exfoliating, the lowermost portion remaining adherent to the stratum mucosum. The Malpighian layer has intercellular vacuoles in it and the papillæ are covered with embryonal cells. In some parts of the rete mucosum the prickle cells do not appear to have gone beyond the embryonic stage (T) while we find embryonic cells about the blood vessels and scattered up to the papillæ. Even the hair follicle contains hyaline globules. Many of these apparently embryonic cells have some of the characteristics of lymph cells or wandering corpuscles, testifying to the fact that the process which has called them forth is of a character denoting its recent occurrence. Moreover, the general contour and outlines of the papillæ are preserved as well as the interpapillary prolongations of the rete. In the latter the prickle cells have preserved all of their characteristics, the cell walls and nuclei being sharply defined and only modified here and there by being apparently replaced by embryonal cells. (T.)

On the other hand, a picture of a marked inflammatory trouble is so widely different as to immediately attract attention. I have chosen for an exam-

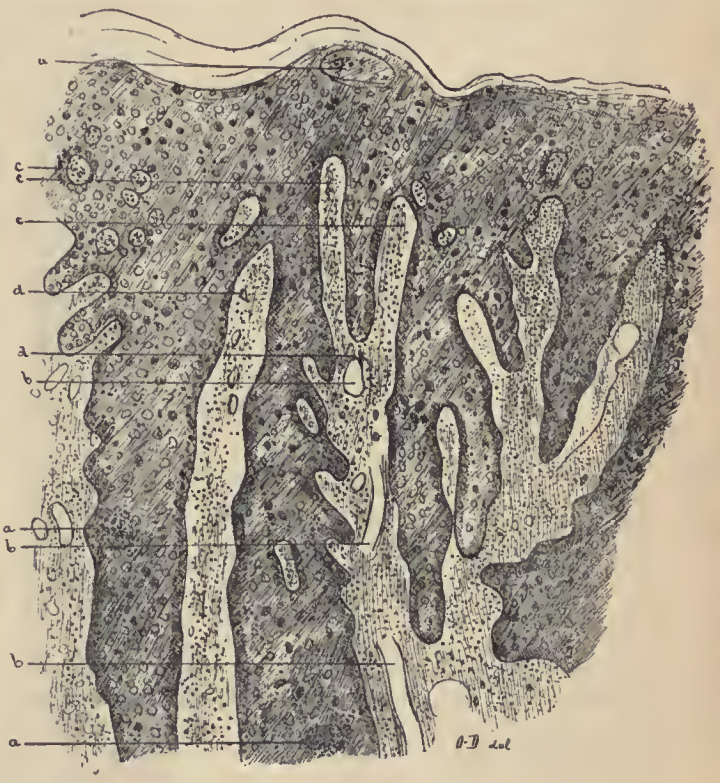


Fig. 7. Impetigo herpetiformis.

a. Round cell infiltration.
b. Dilated vessels and lymphatics.
c. Cellular infiltration and edematous exudation of the papillæ.
d. Pigment cells.

ple a section of impetigo herpetiformis figured by Theodore du Mesnil (Archiv. f. Dermatologie u. Syphilis, 1891, September 5) in which can be seen a well-marked round-cell infiltration. Here we note a cellular infiltration and edematous exudation of the papillæ, which are apparently prolonged by the actual lengthening of the interpapillary prolongations of the stratum mucosum. The stratum corneum is intact, not having undergone any apparent change. The stratum mucosum is filled with lymph cells throughout its extent and at the edges where contact is effected with the papillæ a limited round-cell infiltration is visible. In addition to this, the blood vessels and lymphatics are markedly dilated and surrounded by a cellular infiltration. Pigment cells are found in the papillæ, an evidence which tes-

tifies to the fact that the process has existed for some time as is also shown by the other conditions present.

The two pictures given should certainly prove sufficiently conclusive as demonstrative of the rational differences existing between an erythema and a dermatitis, and as Petrini's demonstration is that of a process so nearly analogous as to be almost identical with relapsing desquamative erythema, such as described in the cases I have mentioned, it would appear to me that a careful consideration of the various points which I have brought forward would establish the fact, beyond the shadow of a doubt, that erythema exfoliativum recurrens is an erythema in the true sense of the word and not a dermatitis; and that the term, dermatitis, which has been applied to it is not only incorrect but misleading. It should be abandoned to give place to a term which is not only pathologically exact but which clinically is more clear, and which has the further advantage of placing the disease in its proper place in dermatologic nosology.

The etiology of the disease under consideration possesses more than passing interest. From the more or less imperfect histories of the few cases which are available it is a very difficult matter, indeed, to formulate anything of a definite nature. We can find but very few characteristics that are held in common by all the cases, beyond the exfoliation. The onset in each case is different, as also the course, duration and termination of an attack. The periods between separate attacks vary, not only in different individuals, but in the same one as well, in some cases. So far as determining a common cause is concerned, it can not be done. The alleged causes given by the patients differ, and no possible reason can be given by others for the peculiar affection which manifests itself in their persons. Taken altogether, we are confronted with a problem which appears rather difficult of solution, and the best that can probably be done is to weigh the probabilities in each case and determine that which seems the most worthy of consideration. It may be remembered that in a consideration of the scarlatiniform erythema of typhoid fever(*Journal of Cutancous and Genito-Urinary Diseases*, August, 1890) which is relapsing in character, and to which the disease under consideration bears a remarkably close resemblance, if it is not identical in character, the opinion of Besnier was advanced, that the cause in scarlatiniform erythemas is never an exclusive one (*Ann. de Dermat. et de Syphil.*, January, 1890). This author states that, in his opinion, the eruption depends more on the subject himself; that there exists a predisposition. The individual becomes more susceptible to the process and this brings about a tendency of recurrence at continually shorter intervals; a circumstance which may be noted in all the cases given above, with the possible exception of the first in which the period of recurrence remained the same. Excluding toxic, septicemic, medicamentous and such similar causes, we are finally brought face to face with one conclusion which seems inevitable—that the cause is one dependent upon the nervous system and more particularly that portion in intimate connection with the vascular system. Dr. J. W. Moore long since regarded (*Dublin Journal Medical Science*, December, 1888) the trouble as one which probably depends on a reactive inhibition of the vaso-motor system of nerves. That this is the most probable cause is amply testified to by the opinions of those authors who have ventured to advance one. Leon Perrin regards the condition as a reflex dermatosis agreeing in this respect with Fournier, Lewin, Besnier and others. Dr. Frank, in referring to his case (Case 1) says that the fact that the recurrence of the symptoms appears on the same day, and even the same hour of each year, can be possibly accounted for by the fact that it is a disease of the nervous system, as it is analogous in its recurrences to certain types of hay-fever. To this, Dr. Blanc demurs somewhat by calling attention to the fact that there may enter a disturbing psychical element. Dr. E. L. Standlee reports a case of annual shedding of the nails (*American Medical Journal*, December, 1891) accompanied by some exfoliation, but the entire report is so incomplete as to afford no clue, beyond the fact that the first attack occurred after contracting typhoid fever, a disease which is very prone to leave its effects on the nervous system. Dr. Perret (*Lyon Médical*, 1885), has attributed the cause primarily to rheumatism acting secondarily through the nervous system, whereas M. Rossigneux (*Lyon Médical*, March 21, 1892) is inclined to regard a possible nervous cause. An ingenious theory has been advanced by Paul Blocq (*France Médicale*, Jan. 23, 1886) to account for the various periodical attacks which are observed in certain individuals. He looks upon the cause as some microörganism, which multiplies continuously, until a certain period of time has elapsed, when it seeks an exit and in this very effort to escape, the symptoms which are observed are produced. This is certainly clever, but it can not be made applicable to the disease under consideration, and could only possibly refer to infectious troubles such as relapsing erysipelas.

To my mind, relapsing desquamative erythema is, beyond all possibility of a doubt, a trouble due to disturbance of the trophic nerves. In the cases which we have detailed, as well as in the numerous instances which occur scattered throughout medical literature, we find distinct nervous symptoms mentioned. The patients suffer from headache, or itching, or localized tingling sensations, or some other purely nervous trouble. Again, we find that the thermic phenomena are either a low fever, or none, or a state of hyperpyrexia out of all proportion with the condition present. Delirium may be present (Case 1), or a state bordering almost on melancholia. So far as the influence of the trophic nerves on the circulation of the skin is concerned, there is no doubt of it at this day. The erythema pudoris or ordinary blushing may easily become transformed into a morbid condition. The blush which was at first easily elicited, later on comes on without any apparent reason, and becomes recurrent unknown to the subject. It is some functional nervous trouble, probably residing in the sympathetic ganglia, and if we but generalize the condition and make it more marked, we find it transformed into a universal erythema. Add to this the greater implication of nerve structure, and we find then a symptom showing itself which is characteristic of nervous trouble of a trophic character—exfoliation. That the disorder must reside in the trophic system is corroborated by the negative results which have attended all examinations for nerve alterations. That an angioneurosis is intimately connected with the process in the production of recurrent exfoliative

erythema is shown by the fact that slight edema accompanies the first manifestation. The skin appears more or less translucent and, in some cases, vesicles make their appearance. The appearance of these lesions, more or less grouped, constitutes another link in the chain of evidence pointing to a neuropathic origin for the trouble. Another circumstance which seems to indicate this, is the comparative shortness of duration of the acute period of the trouble. Following this, there is apparently good health, during which the exfoliation is taking place. The whole force of the attack seems to spend its fury in a few days, and the period following this is passed in getting rid of the *débris* of the nervous storm which has occurred. The exfoliation is rather slow, as the separation is but partial and must be completed by the gradual process of the relaxation and tightening of the skin. This is further evidence of the superficial nature of the pathologic process. In desquamative processes of a marked inflammatory nature, such as psoriasis, pityriasis rubra or chronic eczema, the shedding of the horny layer is continual and rapid, the regeneration not only keeping pace with but often exceeding the loss.

Before closing the consideration of the etiology of the process, one question still confronts us—and it is one which is by no means easy of solution, if there be any for it. It is the periodicity of the attacks. It is no explanation to say that it is of nervous origin, as we find it in hay fever. This is merely shifting the ground of discussion. Why should this periodicity exist? Besnier's dictum that it is a predisposition is an explanation which explains nothing. The very fact of recurrence attests to this. Why this predisposition should exist is the question which we desire to solve. We may invoke idiosyncrasy, but in no case so far recorded, with the possible exception of the toxic and medicinal erythemas, do we find mention made of any possible cause to account for the trouble and which was observed prior to each attack. Blanc has made one suggestion which might have a bearing upon this, when he speaks of the possible influence which the mind might have. We know that self-suggestion is potent in bringing about certain nerve disturbances, and in one susceptible to an erythematous reaction consequent upon trophic nerve disturbance, this might possibly be an explanation. A better one, perhaps, would be the direct influence of telluric or atmospheric causes upon the cutaneous envelope. We can easily understand how such would act upon the sympathetic nerve centers, and these in their turn bring about a reflex disturbance of the trophic nerves leading to the appearance of the erythema. And there is a history, in some cases of scarlatiniform erythema, of the attack following an exposure to a cold wind or chilling atmosphere. Moreover, herpes zoster is observed to supervene upon exposure to cold and damp surroundings, as also being caused by the purely psychical disorder of anger. I do not wish to pursue the subject at greater length, deeming what I have said sufficient not to convince, but rather to incline one to the theory of the neurotic origin of recurrent desquamative erythema.

The treatment is a very simple one, consisting merely in protecting and soothing measures. While, in many cases, symptomatic treatment has been employed, there is no evidence that it exercised any particularly beneficial action, so far as the cutaneous symptoms were concerned. The protective measures employed have certainly had a direct effect as prophylactics in preventing a possibly graver condition which might be induced by irritation due to an extraneous source. Of course, such measures are not only proper and rational, but even imperative. To neglect their application would certainly argue not only a disregard for the patient, but also a serious disregard for the exigencies of the case in hand. In the last case detailed, the patient was always supposed to be affected with malaria when the symptoms first declared themselves, and was accordingly given quinin, to whose effects she attributed her trouble. Still, others having the same prodromic symptoms and the same subjective sensations are recorded as never having taken any medicine, so that we can not conclude that the therapeusis had any effect whatever in calling the disturbance into being.

Is erythema exfoliativum recurrens a rare disease? We are inclined to say that it is not. There seems to be quite an amount of confusion existing in regard to its nomenclature and, for this reason, it has been described under a multiplicity of names which have only led to confusion. Idiopathic scarlatiniform erythema of a recurrent type, as well as recurrent dermatitis exfoliativa are, beyond a doubt, examples of the same affection. Many isolated cases are described, under various designations, whose descriptions and clinical histories coincide with the affection I have attempted to portray. Much confusion has been added by denominating it a dermatitis, as well as by magnifying certain minor attributes which are disproportionately enlarged and dwelt upon at the cost of others apparently more trivial and perhaps more important. As this paper has already transgressed upon the limits which it should occupy, I will close, hoping that it will have awakened a certain amount of interest in that ever shifting and varied group of cutaneous affections included in the classes of the angioneuroses and erythemas.

PNEUMONIC FEVER; ITS SYMPTOMATOLOGY.

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NERVOUS SYSTEM.

Headache of more or less prominence is encountered in almost every case.[1] In my experience it has not seemed to differ in character from that met with in other febrile disorders. It is a symptom of the early periods of the attack, in adults usually diminishing or ceasing after a few days. In children it is often a most distressing symptom,[2] continuing throughout the attack and possibly overshadowing all others. Severe frontal headache is so constant and prominent in senile pneumonic fever that its occurrence in an aged person should lead to an examination of the lungs. The headache is greatly aggravated by efforts at coughing and vomiting.

Juergensen[3] has met with two cases of pneumonic fever following exposure of the bared head to the hot sun, in which the seizure began with lancinating pains in the head and the symptoms of insolation.

It has been thought that headache is more constant and severe in those cases accompanied by nephritis, but I have met with nothing in my experience to confirm this view. In some cases there is an extraordinary pulsation of the temporal and retinal arteries, and in these I have thought the suffering to be more acute and severe.

Dizziness is sometimes an early symptom.[4] Vertigo and syncope are also rare phenomena.[5]

A male, age 44, after a two weeks' spree, was attacked, Nov. 11, 1886, with a severe chill, followed by several lesser ones, cutting pains in the right side and great distress. The pulse rose to 132 and the temperature to 100.4 degrees. The respirations were jerky and 45 per minute. The skin was hot and dry and the face flushed. Over the right lung there was bronchial breathing, mucous râles, increased vocal fremitus and a full, hollow percussion note. On the fifteenth day the patient had a fainting fit, with loss of pulse, labored breathing and death. At the autopsy the right lung was found hepatized, with rib-marks, and the right side of the heart dilated.[6]

My own patient was a farmer, 65 years of age, and the subject of a long-standing bronchitis. He was taken, Dec. 19, 1885, with the ordinary symptoms of pneumonic fever, locally affecting the lower lobe of the left lung. The cough was unusually severe and spasmodic, and every effort was followed by convulsive movements of the facial muscles of the left side, the head would be drawn around toward the left, and he would then fall back upon his pillow in a faint. The convulsive movements and unconsciousness were only of momentary duration. Recovery ensued after two weeks' illness. During exacerbations of his chronic bronchitis the cough has been, before and since, at times as severe and spasmodic as during the pneumonic attack, but syncope was not a feature.

Delirium is a common symptom in pneumonic fever.[7]

It was present in 14 of Caton's[8] 85 cases; in 29 of Chomel's[9] 240 cases; in 14 of Hermann's[10] 44 cases; in 12 of Holt's[11] 173 cases; in about 20 per cent. of the cases of Andral[12] and Louis[13]; in 52 of Sauter's[14] 331 cases; in a very large number of Heintze's[15] cases; in 26 per cent. of Satterthwaite's[16] cases; in about 8 or 12 per cent of those of Huss[17] and Briquet;[18] and in about 20 per cent. of my cases.[19]

Grisolle[20] and others have encountered it oftener in males than in females.[21] This has also been my experience, but I attribute the fact to the greater consumption of alcohol by males[22]—it being well known that delirium occurs vastly more frequently in the subjects of drunkenness than in those who are temperate drinkers or abstainers.[23] Excluding those who use alcohol to excess, from my list of male patients, and the proportion of delirious cases is about the same in the two sexes.

Delirium is encountered oftener in some regions than in others,[24] and is profoundly impressed by epidemic influences.[25] Individual peculiarities will also influence the development of delirium in this disease. Thus there are some persons who become delirious with the advent of the slightest provocation, while in others the inherent tendency is in an opposite direction. It is very common in infantile[26] and senile[27] cases. It is also said to be more common when the inflammation is apical,[28] spreading[29] or double, although my experience does not confirm the statement.

Delirium may come on at the onset of the attack[30] or, and this is more common, it may make its first appearance after the disease has reached[31] or passed its acme. It usually makes its advent at night, is always worse at this time, and may be noticed only at this period. In the severer cases, however, it is constant. The duration varies from a temporary outbreak to several days.

The development is, in some cases, quite sudden and without warning, but usually the delirium is preceded by very significant prodromata, e.g., restlessness, sleeplessness, headache, heaviness of the head, dizziness, vertigo,[32] tinnitus aurium, a peculiar change of voice, forgetfulness of pain, absence of mind, manifestations of surprise at ordinary occurrences, extraordinary acuteness of the mind and special senses, brilliancy of the eyes, intolerance of light and noise, heat of the head, flushing of the face, increased force of the cephalic circulation and other anomalous symptoms. In those cases in which the delirium seems to be merely a sign of approaching death the countenance may be pale and collapsed, the eyes sunken, the surface cold, and other obvious evidences of an adynamic state.[33]

The character of the delirium varies greatly in different cases, and at various times in the same case. It sometimes manifests itself in a simple inclination to loquacity, although the patient's conversation may be germane to the subject under consideration and quite rational. I have often met with this form and have always viewed its appearance with considerable anxiety.[34] In other cases the aberration of mind may be very slight—barely noticeable—and of a mild character. From these mild forms at one extreme, we may meet with every possible and imaginary gradation to the delirious tremor of the confirmed drunkard and the furious delirium of the raving maniac at the other.

In some cases the delirium may be of a low, muttering and dreamy kind, like that met with in typhoid fever. This form usually comes on late and in adynamic cases, and should be viewed as a signal of imminent danger, it being usually a fatal indication.[35]

In the case of drunkards the delirium is apt to be of the variety known as delirium tremens.[36] It usually comes on early in the attack,[37] either suddenly or preceded by restlessness, sleeplessness, etc., and is often so prominent as to mask the pulmonary affection. The delirium is a busy one, the patient being in incessant motion and constantly jabbering away at imaginary persons and things. There is usually present one dominant and unpleasant idea, which may be either fixed or changeable. Fear is constantly before the patient, and he is forever engaged in plans and measures for defense, escape and, possibly, attack. There are delusions of sight in which he sees noxious and horrible animals, demons, etc. The delusions often point towards the pneumonic disorder; "thus the patient declares that the air is stifled, that his nose is obstructed, and that demons are sitting on his chest."[38] Along with the delirium there is a tremor of all the voluntary muscles of the body, especially marked in those of the tongue and extremities.[39]

The delirium is sometimes furious, wild and even maniacal,[40] especially in the young and strong.

An intemperate man, aged 52, was seized, Jan. 14, 1884, with rigors, weariness and headache. On the second day the temperature was 102.2 degrees, and there was dyspnea, acute pain in the chest and crepitation in the right lung posteriorly. On the third day there was dullness and bronchial breathing, and the disease was well developed. The temperature ranged between 100.4 and 104.1 degrees, and fell to below normal on the sixth day. During the seventh night he was restless and somewhat delirious, although he lay quite still. On the seventh day, at 9 o'clock, he had a staring look, directed upwards, twitching of the facial muscles, dilated pupils and abolition of hearing. There was no noticeable fever and the pulmonary consolidation was undergoing resolution. In the afternoon actual frenzy developed. He would attempt to leave the bed and scale the wall. There was an incessant and rattling talk, and he would count in a gallop, in which exercise his wife must accompany him. In case she made a mistake he would stop and correct her with loud curses. He refused his medicine and imagined that his nurses were trying to poison him. He would pound upon his abdomen as upon a drum; twist the bed clothes into ropes; laugh and talk quite sen-

sibly at times, and, all at once, would spring from the bed and attempt to flee away. The various visions which passed before him were described in a loud voice. He would see a beautiful castle surrounded by lovely gardens and magnificent parks; a dangerous black man hidden behind the stove; a fire into which he is to be cast; purgatory and a clock which strikes but once a century, the finger of which approaches the striking time, which he awaits with great anxiety. This continued for three days, when he entered upon a tedious convalescence and eventually recovered.[41]

In rare cases the mania may take on a homicidal or suicidal form. One of my cases presented the latter feature.

A nervous gentleman, aged 67, was taken, Feb. 12, 1886, with pneumonic fever, locally affecting the base of the left lung. On the third day delirium arose and soon developed into mania. At first he was an emissary from Christ, sent to evangelize the world, and he was continually preaching to vast audiences. All who heard him ceased their occupations and followed him from place to place—in number a countless multitude. Soon he began to doubt his abilities, motives and availability, and his discourses were interspersed with wild lamentations, self-condemnation and self-chastisement. This soon gave place to a profound melancholy from which he could not be aroused, and during the continuance of which he several times attempted suicide, generally with imaginary daggers and once by precipitating himself from the bed—an imaginary precipice—to the floor. On the thirteenth day he lapsed into a drowsy state from which he emerged rational two days later. Recovery ensued after a protracted convalescence.

A soldier, aged 20 years, sickened April 27, 1879. For a week he had slight fever and complained of headache and shooting pains in various parts of the body. The fever increased, his tongue became coated and there was developed cough, pain in the region of the zyphoid process, dullness on percussion and bronchial breathing at the base of the right lung. The fever continued and maniacal symptoms were developed on the 29th inst., on which day he attempted suicide. Death occurred on the following day, the mania continuing to the last. At the autopsy the base of the right lung was found hepatized and the brain edematous.[42]

Departure, in various directions, from these types are noticed.

A lady, 60 years of age, was taken with pneumonic fever, locally affecting the right lung. There was great dyspnea and she often said: "Kill me! I am suffocating." She finished every spoken sentence with a peculiar cry. On the tenth day she was very passionate, expressed a fear of becoming blind, had slight convulsions and was delirious at night. On the next day the right side was paralyzed, she was unconscious and passed her stools involuntarily. She remained in this state for days and died on the sixteenth day. At the autopsy two-thirds of the right lung was found in a state of gray hepatization.[43]

A young man, aged 19 years, suffered an attack of pneumonic fever, with crisis on the seventh day. For sixty hours all went well, when, suddenly there came on extreme dyspnea, with gasping, struggling, turgid face, staring eyes and profuse perspiration. He was quieted and relieved by moral suasion. On the following morning he had a similar attack, with dysphagia, apprehensive fright and violent trembling. He was again quieted and drank a glass of milk. Recurrent attacks occurred, with dilated pupils, excessive jactitation of the whole muscular system and a rise of temperature to 106 degrees, followed by death.[44]

Even in children the delirium may take the form of persistent delusions,[45] as occurred in one of my cases.[46]

Insanity may follow as a sequel, as in the following case:

A farmer, aged 42, had a severe attack of pneumonic fever in March, 1889. During the attack the mind was clear but at the end of the prolonged convalescence simple melancholia, with delusions developed. He had financial delusions; thought people were plotting against him; that he had lost the respect of his friends, etc. His speech was slow and hesitating. After six months there was progressive improvement.[47]

It is sometimes very difficult to draw the line of demarkation—which is at best an insensible and arbitrary one—between the milder forms of delirium and the operations of the rational mind. It may be said, however, that all outspoken images of the mind which are confused, unconnected and irrelevant are delirial aberrations of the intellect, and are due to an abeyance or destruction of the regulating powers of the reason. Delirium has been compared to dreaming, but it is much more profound and is due to different causes.

In pneumonic fever the delirium may depend upon an irritation of the cerebral organs from an increase or diminution of the blood supply to the parts; or it may be due to lesions of structure of these organs; or finally, it may depend upon a supply of blood to the brain lacking in proper nutritive or stimulating properties, or loaded with septic or noxious materials which preclude its nourishment or paralyze its functions. It is rare that the delirium is due to encephalic inflammation, although this was a common opinion of the older writers.[48]

Money,[49] in analyzing all the cases of delirious pneumonic fever occurring in the records of University College Hospital, London, found that pyrexia had but little influence upon the production of delirium. This coincides with the observations of Heinze[50] and myself.[51]

The gravity of delirium has been variously estimated by different authors.

Thus Laennec[52] did not consider even a furious delirium as denoting the presence of any great danger, although this was opposed to the views of Cullen[53] and the majority of observers, both before and since his time.[54] Gregory[55] was accustomed to state in his lectures that he had never known of but one pneumonic patient to recover after having had delirium, but this clearly can not apply to the experience of any other physician of much practice.[56]

My own observation has led me to the conclusion that very little need be feared when the delirium comes on early, especially if the patient is robust, or is predisposed to delirium under slight febrile provocation. On the contrary, if it comes on late in the course of the attack and is persistent, or if the patient is old, or enfeebled, or is a drunkard, the symptom is of the gravest import.

In a large number of cases with delirium there is developed a soporose condition or veritable coma which adds greatly to the gravity of the case. As a fact, the majority of the cases ending fatally and which are accompanied by delirium die comatose, although in some instances the mind temporarily regains its clearness shortly before death.

In the low, typhoid, or adynamic form of the disease the patient may be almost continually in the dreamy, half-waking state known as coma-vigil, or he may lay in a more or less profound coma. Coma may also be developed in those cases in which the blood fails in being properly aërated, and is surcharged with carbonic acid and effete materials which should be eliminated through the respiratory apparatus, and other channels, now not able to properly perform their functions. If the patient is the subject of diabetes, coma may be suddenly developed.[57] It is superfluous to state that any form of coma indicates a dangerous case.

When the coma is unconnected with organic cerebral disease it is less deep than when there is a brain lesion; continues two or three days and, if the case proves successful, subsides with the decline of the fever.[58]

Aside from the delirium the intellect is not so much interfered with as in most other diseases of equal gravity. Indeed, in many cases of the utmost gravity—even fatal ones—the mind is remarkably clear and penetrating, even to within a few moments of death.[59]

Sturges,[60] in commenting on one of his cases, makes use

of the following language: "The best feature of his case—which was a very grave one—was his acuteness of perception and attention to his own distress." With this I can only partially agree. That a patient should be sensible of his sufferings is indeed of good augury; but acuteness of perception in general has been so often associated with a fatal termination, in my experience, that I look upon the symptom, when it occurs in connection with others of gravity, with apprehension and dread."

There is usually considerable anxiety of mind, especially early in the attack. With all the anxiety the patient generally remains contented and hopeful, although he may be greatly depressed in spirit,[61] especially when under epidemic influences.[62]

In pneumonic fever there is about the same amount of restlessness and sleeplessness as in other febrile disorders of equal gravity. The restlessness is much more marked in the early stages of the attack than at a later period. At the height of the disease the patient, even a child, is usually quiet and tractable. There is usually a regular evening exacerbation, continuing far into the night, which interferes with sleep during the hours usually devoted to this purpose, although with this obstacle more sleep is generally obtained than is ordinarily supposed.

The patient and attendants will often inform the physician that little or no sleep has been obtained when such has not been the fact. Many times have I had an accurate record kept of the hours and minutes passed in sleep, showing that the patient was obtaining much—perhaps many fold—more sleep than had been estimated. When sleep is had only in short periods and is disturbed by sighs, groans, dreams and frequent awakenings there arises an erroneous impression of sleeplessness. It is, nevertheless, true that some patients pass several days with scarcely any sleep.[63] On the contrary, a few sleep more than in health, the sleep being peaceful and refreshing. Quite a considerable number of such cases are to be found in my collection. I have found them, with scarcely an exception, mild and tending toward recovery, and I consider the symptom of good import.

Convalescence is often ushered in by a prolonged and very profound sleep—a critical occurrence—from which the patient awakes, feeling that he has passed the danger line.

During convalescence, in many cases, the mind remains somewhat weakened, as is evidenced by irritability and restlessness on the one hand or too much contentment or apathy on the other.[64]

The increased blood pressure in the cerebral vessels in certain cases of pneumonic fever may lead to their rupture,[65] especially in the aged, followed by the ordinary symptoms of apoplexy, viz. hemiplegia,[66] aphasia and other paralyses.[67] Failure of the circulation may lead to cerebral softening[68] or abscess,[69] and these are not very rare accidents in this disease.

Inflammation of the cerebral[70] and cerebro-spinal[71] membranes, with effusion of serum, lymph or pus is a comparatively frequent occurrence.

It was present in 1.2 per cent. of 1,172 cases treated at the Zürich clinic;[72] in 12 per cent. of Kühn's cases in the Moringer epidemic;[73] in 16 per cent. of Louis' cases;[74] in 3.7 per cent. of Caton's eighty-five cases;[75] in 6 per cent. of the cases analyzed by Hermann;[76] and in 1 per cent. of the 8,000 Vienna cases.[77]

A negro, aged 28, was admitted into the Marine Hospital, Cairo, March 17, 1886, with pneumonic fever. Meningitis developed next day, and he died March 25. At the autopsy the right lung was found in gray hepatization, except a small portion at the base. There was intense congestion of the scalp and pia mater. There were deposits of lymph in the longitudinal fissure. The cortex was flattened and the texture softened in patches. A large quantity of serum was found in the ventricles and sub-arachnoid space.[78]

A widow, age 58, on the fourth day of an attack of pneumonic fever, locally affecting the upper lobes of the right lung, suddenly began breathing noisily, failed to answer questions, but soon recovered her senses. With the occurrence of occasional delirium she died on the seventh day—after having passed her urine and feces under her. The autopsy disclosed extensive purulent meningitis.[79]

In some cases the cerebral symptoms are so prominent as to mask the, perhaps equivocal and misleading, pulmonary ones. Under such circumstances care is requisite to avoid being led into diagnostic error. Thus in children, especially, there may be cervical rigidity, tenderness of the vertebræ, cephalalgia, projectile vomiting, intolerance of light and sound, etc., without the presence of meningeal inflammation.

Davis[80] has given us a vivid picture of one of a few cases witnessed by him at a time when cerebro-spinal fever was present in the same locality.

"The first symptoms were very severe pain in the head, most severe in the occipital region, with great restlessness and anxiety, hurried breathing, and only little elevation of temperature. After about twenty-four hours the pain drifted to the lower part of the chest, extremely acute, causing the respiration to be short or stifled, very frequent, and pulse sharp and quick; but the closest examination detected neither the friction of the first stage of pleurisy, nor the crepitant râle of pneumonia; nor the dullness on percussion of the second stage of either. After the pains in the side and the other symptoms mentioned, with temporary feeling of sinking had continued for nearly forty-eight hours, the pains ceased, the mind became calm, but the respiration continued short and frequent, like one weary from physical exertion, and giving exaggerated or puerile respiratory murmur, but no râles or dullness over any part of the chest, and no expectoration. During the next twenty-four hours, however, the patient became gradually more dull or drowsy, the respiration shorter, with first or crepitant râle over the right side of the chest, which gave place in less than eight hours to sub-mucous râles, some bloody expectoration, and marked dullness on percussion, with a weak and frequent pulse. In less than twenty-four hours after the first indication of pneumonic exudation, the whole of the right, and the lower part of the left, lung were completely filled with the exudative material and the patient died."[81]

It is a remarkable fact that in those cases in which there are cerebro-spinal symptoms, without actual inflammation, these symptoms decline with the greatest rapidity or cease abruptly with the advent of convalescence from the pneumonic inflammation.

A male child, 3½ years of age, was taken April 4, 1880, with fever, cough, thoracic pain, headache and the objective symptoms of pneumonic fever, locally affecting the bases of both lungs. There was marked spinal tenderness, retraction of the head, the characteristic cerebral cry, suffusion of the eyes, convulsions, etc. The disease pursued a severe course, and on the fourth day the temperature was 103.5 degrees, pulse 140 and respirations 40. The fever did not attain so great an elevation on the following day and defervescence occurred on the sixth day. The cerebro-spinal symptoms ceased abruptly and complete recovery ensued.

In children the cerebral symptoms are very often connected with dentition.[82]

A male child, age 8 months was taken, Jan. 25, 1889, with cough, diarrhea and febrile symptoms. On examination two days later, the base of the right lung was found hepatized. The general and local symptoms quickly subsided but on February 3, coldness of the extremities and vomiting ushered in high fever and hepatization of the left lung, which began below and gradually extended upwards until the entire lung became involved. The course of the disease was very severe, but after a week resolution commenced in the upper lobe and proceeded so slowly that it was not complete for a week. Resolution did not begin in the lower lobe until the sixteenth and was never completed. Dental irritation was noticed early in the illness and the two lower lateral incisors appeared during the second week, but irritation continued from other teeth, both upper and lower, with frequent febrile exacerbations. February 17, for a short time there were spasmodic contractions of the muscles of the right side, without impairment of function upon their subsidence. On the next day convulsions confined to the

right side, with paralysis of this side occurred and continued until death on the twenty-third, after five weeks of illness.

General convulsions, especially in children[89] are met with in a certain proportion of cases. Probably this does not indicate greatly increased danger[83] when it occurs early in the attack, but as a late symptom or in connection with other cerebral phenomena it is usually a forerunner of death. In some cases there are local or general muscular spasms,[88] especially in the low, adynamic or comatose forms of the disease.[84] Chorea,[85] epilepsy,[86] neuralgias,[87] and other so-called functional nervous affections are occasionally associated with pneumonic fever.[90] In two of my cases, in epileptics, the fits were held in abeyance by the pneumonic fever and did not reappear until convalescence was fully established.

A slight diminution of hearing, together with tinnitus[91] is sometimes present, but pronounced deafness is rare,[92] save in connection with typhoid fever, cerebral complication, obstruction of the Eustachian tubes[93] or middle ear inflammation.[94]

Every practitioner must have noticed with what frequency inflammation of the naso-pharyngeal mucous membrane accompanies pneumonic fever, especially in the young. The Eustachian tube, acting as a drain for fluids accumulating within the tympanic cavity and mastoid cells and as an equalizer of the atmospheric pressure within and without these cavities, affords a ready way for the extension of any inflammation affecting the naso-pharynx to the cavities at its other extremity. Otitis media is one of the most painful complications which can befall the pneumonic patient. In these cases the lateral sinuses are often involved, with a great increase in the danger.

Gull[95] has reported three cases in which this condition was present. The first was a man, age 21, who, after exposure to cold, had rigors, with pain in the right ear, extending over the side of the head and neck, and vomiting. Simultaneously there were developed the symptoms of pneumonic fever, complicated with pleurisy and pneumo-thorax. The patient died on the ninth day. The other cases were similar, with death on the twenty-first and twenty-fifth days, respectively.[96]

In these cases the pneumonic symptoms are very frequently overshadowed by those of the ear and brain[97] and are easily overlooked by a careless diagnostician.

I have encountered otitis media as a complication of pneumonic fever six times. Of these there were cerebral complications and fatal terminations in two, while four recovered. One of the latter cases well illustrates the series:

A healthy young woman, age 20, complained of slight deafness and pain in the right ear for two days, when she was awakened in the middle of the night by a severe chill and agonizing pain in the ear, which was greatly aggravated by a short, dry cough. High fever, alternating with rigors followed and the patient became rapidly so ill that her life was despaired of by her attendant. When I saw her on the second day she lay in a deep stupor, from which she would be aroused at intervals by the intense pain in the ear. Everything taken into the stomach was forcibly ejected. The head was retracted and the eyes suffused and dry. The respirations were short and hurried and during the acts the right side of the chest remained almost motionless. The pulse was 128 and the temperature 104.8 degrees. There was no cough, but there was dullness and tubular breathing over the right lung below the third rib. The drum membrane was punctured and exit given to a few drops of pus and the patient fell into a quiet sleep, from which she awoke complaining of pain in the right side of the chest. From this time she coughed and expectorated rusty sputæ. The aural pain did not recur, the discharge soon ceased and hearing was eventually, although slowly regained. The pneumonic fever pursued an ordinary course, with convalescence on the eighth day.[97]

The eyes usually remain unaffected. If there is much cerebral congestion they may be injected, with intolerance of light[98] and pulsation of the retinal vessels.[99] In the low forms of the malady there is often dryness of the conjunctivæ, or even conjunctivitis, from an anesthetic condition of the cornea. In some cases, especially infantile, the eyes are remarkable for their brightness and luster.[100] Subconjunctival hemorrhages, due to severe coughing are sometimes encountered—such cases being in my collection. The severe coughing may cause blindness, from intra-ocular hemorrhages, embolism,[101] etc. In some cases the cause of the blindness[102] may not be discovered.[103] The pupils are usually of normal size and responsive to light, but this is not invariably the case. They may be uni- or bi-laterally contracted or dilated and irresponsive to light,[104] especially with cerebral symptoms. Plastic iritis is a complication.[105] In rare cases herpetic vesicles appear upon the cornea,[106] usually in connection with labial or nasal herpes.

There is sometimes a dryness of the Schneiderian mucous membrane, especially in children, with a tendency toward picking at the nose. This may be noticed in an early stage of the attack or it may appear later in connection with the typhoidal condition. Following such dryness there may be a discharge from the nose, which is of good omen. In the early stages,[107] and with the advent of convalescence sneezing is not uncommon. The latter is often one of the first indications of the advent of convalescence and should be viewed as of good import.[108] Aretæus[109] thought that the point of the nose was elevated in this disease, but I have never been able to appreciate the fact—if fact it be.

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1 See Fox, Reynolds' Syst. Med., Phila, 1880, Vol. ii, p. 172;—Juergensen, Ziemssen's Handb. d. Spec. Path. u. Therap., Bd. v, 1877, s. 124;—Lépine, Pneumonie, Wien, 1883, s. 76;—et al.

2 See also Davis, N. W. Med. Jour., Vol. iii, p. 425;—et al.

3 Op. cit., s. 124.

4 Waller, Inaug. Diss., Erlangen, 1877, s. 20.

5 Knight, Jour. Am. Med. Assn., June 19, 1886, p. 690. It was an early symptom in one case of Leyden's—Volkmann's klin. Vostrage, No. 114 u. 115, s. 1003.

6 U. S. Marine Hospt. Rpts., 1887, p. 245.

7 See Cleghorn, Diseases of Minorica, London, 1761, p. 261;—Peacock, St. Thomas' Hospt. Rpts., 1875, Vol. v;—Sprague, Rpt. Maine Bd. Health, 1885, p. 214;—et al.

8 London Lancet, 1884, Vol. ii, p. 134.

9 Pneumonie, Leipzig, 1841, s. 146.

10 Lungenentzündung, München, 1880, s. 36.

11 N. Y. Med. Rec., April 7, 1888, p. 385.

12 Med. Clinic, Phila., 1843, Vol. ii.

13 Quoted by Fox, Op. cit., p. 172.

14 Inaug. Dissert., Brésiau, 1881, s. 53.

15 Arch. d. Heilk., 1868.

16 Phila. Med. News, Jan. 5, 1889, p. 5.

17 Lungenentzündung, Leipzig, 1861, s. 40.

18 Arch. gén. de med., T. xi.

19 Lépine, Pneumonie, s. 135, considers delirium rare in France.

20 Med. Times and Gaz., Jan. 29, 1848.

21 Chomel, Op. cit., s. 148, in his experience met with delirium oftenest in females.

22 None of my female patients were addicted to the immoderate use of alcoholic liquors.

23 See Copland, Med. Dict., N. Y., 1855, Vol. ii;—Hall, St. Bartholomew's Hospt. Rpts., 1875;—Heinze, Arch. d. Heilk., 1868, Bd. ix;—Huss, Op. cit., s. 41;—Green, Quain's Dic. Med., N. Y., 1883, p. 877;—Grisolle, Traité de la Pneumonie, Paris, 1864;—Fox, Op. cit., p. 173;—Juergensen, Op. cit., s. 128;—et al.

24 See also Huss, Op. cit., s. 41;—Juergensen, Op. cit., s. 128;—Lépine, Pneumonie, Wien, 1883, s. 135;—et al.

25 See Cleghorn, Op. cit., p. 261;—Dutcher, Cin. Lan. and Obsv., Jan., 1881, p. 10;—Heller, Deutsches Arch. f. k. Med., Bd. v.;—Huxham, Epidemic Diseases, London, 1748, Vol. ii;—Louis, Fiev. Typh., T. i, p. 339, et T. ii, p. 37;—Speck, Inaug. Dissert., Marb., 1870, s. 41;—Weber, Path. Anat. d. Neugeb., Bd. ii, s. 163;—et al.

26 Boldt, N. Y. Med. Rec., July 16, 1887, p. 85;—Holt, Op. cit.

27 Charcot, Dis. of old Age, N. Y., 1881, p. 28;—Huss, Op. cit., s. 41.

28 Andral, Op. cit.;—Briquet, Ranking's Abst., 1848, No. 7, p. 49;—Grisolle, Op. cit.;—Heinzé, Op. cit.;—Juergensen, Op. cit., s. 122;—Holt,

N. Y. Med. Rec., April 7, 1888, p. 387. Huss, Op. cit., s. 40, says that he has not found delirium more prevalent in those cases in which the upper, rather than other, lobes are affected.

29 See Smith, N. Y. Med. Rec., July 16, 1887, p. 85;—Sturges, Pneumonia, London, 1876, p. 66.

30 Andral, Op. cit., p. 120.

31 See Holt, Op. cit.;—Speck, Op. cit., s. 27.

32 Luckie, Am. Jour. Med. Sci., Vol. viii, p. 354.

33 See Aretæus, De Caus. et Sig. Acut. Morb., Lib. ii, Cap. i;—Cœlius Aurelianus, Acut. Morb., Lib. ii, Cap. xxv-xxix;—et al.

34 See Andral's—Op. cit., p. 158—case.

35 See Robb, Jour. Am. Med. Assn., Nov. 28, 1885, p. 614.

36 See Brunton, Mat. Med. and Pharmacol., Phil., 1885, p. 654. It may appear late, as in the case reported by Haw, London Lancet, 1887, Vol. ii, p. 911.

37 See Huss, Op. cit., s. 41;—Juergensen, Op. cit., s. 128;—Laaègue, Arch. gén. de med., 1869;—Samter, Inaug. Dissert., Breslau, 1881, s. 53;—Schapira, Inaug. Dissert.;—Stortz, Inaug. Dissert., Würzb., 1884, s. 65;—Townsend and Coolidge, Trans. Am. Climat. Assn., 1889.

38 Bartholow, Holmes' Syst. Surg., Phila., 1884, Vol. i, p. 582.

39 For further information see Barlow, London Lancet, 1884, Vol. i, p. 9;—Doubleday, N. Y. Med. Rec., March 28, 1885, p. 343;—Fox, Op. cit., p. 173;—Huss, Op. cit., s. 56;—Laaègue Arch. gén. de med., 1869;—Lépine, Op. cit.;—Sturges, Op. cit.;—Peacock, Op. cit.;—et al.

40 Barlow, Op. cit.;—Caton, Op. cit., p. 137;—Grisolle, Op. cit.;—Sturges, St. George's Hospt. Rpts., Vol. i, p. 343. See case by Kempf, Med. and Surg. Reporter, June 10, 1893, p. 894.

41 Eidam, Berliner k. Wochenschr., 1884, s. 185.

42 Hermann, Lungenentzündung, München, 1880, s. 34.

43 Liman, London Lancet, N. Y., 1882, Vol. i, p. 83.

44 Lester, N. Y. Med. Rec., July 21, 1888, p. 65.

45 See cases by McMurtry, Jour. Am. Med. Assn., April 26, 1884, p. 464, and Lyman, Phila. Med. News, May 9. 1891, p. 519.

46 For further information on this subject see Bowditch, Boston Med. and Surg. Jour., May 24, 1877, p. 623;—Ellis, Ibid.;—Rep. West Virginia Hospt. for Insane, 1875, pp. 17, 20 and 21;—Lees, London Lancet, 1889, Vol. ii, p. 892;—Holfelder, Inaug. Dissert., Tübingen, 1884, s. 6;—Lyman, Phila. Med. News, May 9, 1891, p. 519.

47 Osler, Johns Hopkins Hospt. Repts., Vol. ii, p. 46.

48 See Andral, Op. cit., p. 122.

49 Jour. Am. Med. Assn., July 3, 1886, p. 25.

50 Arch. d. Heilkunde, 1868.

51 Heinze—Op. cit.—found that delirium was most common during the cooler portions of the year, but my records do not confirm this opinion.

52 Diseases of the Chest, N. Y., 1830, p. 223.

53 Prac. Physic., Phila., 1792.

54 See Flint, Prac. Med., Phila., 1868, p. 179;—Forbes, Laennec's Dis. Chest, p. 223;—Fox, Op. cit., p. 173;—Grisolle, Op. cit., Lommins, Obsv. Med., Vol. ii, p. 136;—Watson, Prac. Physic., Phila., 1845, p. 580.

55 Quoted by Forbes, Op. cit.

56 See Money, Op. cit.;—et al.

57 See Ebstein, Deutsche Med. Wochenschr., Bd. xxviii;—et al.

58 For further information see Doubleday, N. Y. Med. Rec., March 28, 1885, p. 343;—Humphreys, London Lancet, 1887, Vol. ii, p. 1109;—Samuels, Med. Press and Circular, 1887;—Strauss, Rev. Mensuell, 1877;—Speck, Inaug. Dissert., Marb., 1870, s. 11;—Fonts in Cleghorn's Epidem. Diseases, Minorica, s. 263;—et al. See also Fox, Op. cit., p. 183;—Sturges, Op. cit., p. 120;—Swett, Diseases of the Chest, N. Y., 1856, pp. 91 and 105.

59 Op. cit., p. 120.

60 Aretæus, Op. cit.

61 Cleghorn, Op. cit., p. 261;—Rosse, Cruise of the Corwin, Wash., 1883, p. 16;—and many others. See Wells, Jour. Am. Med. Assn., Feb. 23, 1889, p. 258;—et seq.

62 Ziemssen, Pleuritis u. Pneumonie, Berlin, 1862, s. 166.

63 See Aretæus. Op. cit.;—Cœlius Aurelianus, Acut. Marb.;—Hippocratea, Opera Omnia;—Lépine, Op. cit., s. 76;—Rosse, Op. cit., p. 16;—and others, ancient and modern. Homburger—Inaug. Dissert., Strassb., 1879, s. 56—gives the case of a patient who obtained no sleep for several days.

64 See also Hopf, Jahresbericht, 1870, Bd. ii, s. 123.

65 See Bartholow, Prac. Med., p. 512;—Copland, Med. Dic., N.Y., 1855, Vol i, p. 105;—Strauss, Rev. Mensuell, 1877.

66 Charcot, Diseases of old Age, N. Y., 1881;—Gubler, Arch. gén. de med., 1860;—Hervey, Bull. Soc. Anat., 1873;—Jaccoud, quoted by Lépine, Pneumonie, Wien., 1883, p. 138;—Lépine, Op. cit., Thèse de Paris, 1870, et Mém. de la Soc. des hôp., Paris, 1876;—Stephen, Weekblad, 1888.

67 Barth u. Poulin. quoted by Lépine, Pneumonie, s. 138;—Gubler, Arch. gén. de med., 1860-61;—Macario, Gaz. méd. de Paris, 1858;—Fox, Op. cit., p. 183.

68 Doubleday, Op. cit., p. 343;—Rostan, Du Ramollissement Cèbrébrale, 2d edition, p. 232;—Strauss, Op. cit.;—et al.

69 See Brechemin, Boston Med. and Surg. Jour., July 14, 1881, p. 39;—Brooks, London Lancet, Feb. 2, 1889, p. 216;—Delioux, Gaz. méd. de Paris, 1857, No. 39;—Samuels, Med. Press and Circular, 1887;—Swett, Op. cit., p. 93;—et al.

70 See Caton, Op. cit., p. 137;—D. C. Bd. Health Rpt., 1878, p. 115;—Huss, Op. cit.;—Kuhn, Arch. f. k. Med., Bd. xxi;—Humphreys, Op. cit., p. 1109;—Lépine, Op. cit., s. 158, Thèse de Paris, 1870;—Nauwerck, Arch. f. k. Med., Bd. xxix, s. 1;—Purser, Dublin Jour. Med. Sci., December, 1873;—Roosevelt Hospt. Rpts., 1879, p. 28;—Strauss, Op. cit.;—Surugue, Thèse de Paris, 1875.

71 Dalton, Jour. Am. Med. Assn., Sept. 24, 1887, p. 410;—Doubleday, Op. cit., p. 343;—Fagge, Prac. Med., 1887;—Maurer, Arch. f. k. Med., Bd. xiv;—Smith, N. Y. Med. Rec., May 14, 1887, p. 543;—et al.

72 Nauwerck, Op. cit., s. 1.

73 Op. cit.

74 Am. Jour. Med. Sci., Vol. xiv, p. 199.

75 Op. cit., p. 137.

76 Op. cit., s. 22.

77 Caton, Op. cit., p. 136. See also Homburg, Inaug. Diss., Strassb., 1879, s. 97;—Huguenin, Ziemssen's Handb., Bd. xi, s. 374;—Huss, Op. cit., s. 132;—Irvine, London Lancet, 1889, Vol. ii, p. 370.

78 U. S. Marine Hospt. Rpts., 1886, p. 204. For a very interesting case see Reports for 1887, p. 205.

79 Homburg, Op. cit., s. 97.

80 Jour. Am. Med. Assn., Oct. 13, 1883, p. 415.

81 See also Condie, Watson's Prac. Med., Phila., 1845, p. 611;—Parks, N. W. Med. Jour., Vol. i, p. 461;—Runeberg, Berliner klin. Wochenschr., 1888, s. 921-946;—et al for similar cases.

82 See Friedleben, Arch. der Heilk., 1857;—et al.

83 See Doubleday, N. Y. Med. Rec., April 7, 1888, p. 385.

84 See case, U. S. Marine Hospt. Rpts., 1887, p. 215.

85 See case, Weller, Inaug. Diss., Zürich, 1854, s. 423;—Schapira, Inaug. Dissert, s. 34;—Kunze, Lehrb. d. prac. Med., 1873, Bd. i, s. 155;—Ziemssen, Spec. Path. u. Therap., Bd. ii, s. 437.

86 An epileptic under my care dated the beginning of his affection to a previous attack of pneumonic fever.

87 See Wilbrandt, Inaug. Diss., Rostock, 1862, s. 28.

88 See Preston, N. Y. Med. Rec., March 30, 1889, p. 343;—Speck, Inaug. Dissert., Marb., 1870, s. 11;—Weber, Path. Anat., Bd. ii, s. 61;—Fox, Op. cit., p. 173.

89 Especially in dentition.

90 Wunderlich—Inaug. Dissert., Tüb., 1858, s. 15—reports one case in which, on the twenty-second day, transient formications and anesthesia occurred, and another in which there was anesthesia of the throat and neck.

91 Walter, Inaug. Diss., Erlangen, 1877, s. 20.

92 Bleuler, Inaug. Diss., Zurich, 1865;—Fox, Op. cit., p. 174;—Griesinger, Virchow's Handb., Bd. ii;—Hillier, Dis. of Children, p. 40.

93 Chomel, Pneumonie, Leipzig, 1841, s. 145;—Ray, Ohio Med. Recorder, April, 1881, p. 498;—Upshur, Phila. Med. Exam., 1845.

94 Baginsky, Pneumonie, Würsb., 1880, s. 46;—Chomel, Op. cit., s. 168;—Dietz, N. Y. Med. Rec., March 17, 1883, p. 290;—Koettnitz, Inaug. Diss., Halle, 1882, s. 79;—Lees, Practitioner, Aug., 1886;—Peacock, Op. cit.;—Sinclair, London Lancet, N. Y., 1881, Vol. i, p. 313;—Steiner, Diseases of Children;—Duckworth, London Lancet, Jan. 5, 1889, p. 1;—et al.

95 London Lancet, N. Y., 1855, Vol. i, p. 515.

96 See also cases by Duckworth, London Lancet, Jan. 5, 1889, p. 1;—Schupoff, Ibid, N. Y. edition, 1855, Vol. i, p. 516;—et al.

97 See Peacock, Ibid., p. 516.

98 See also Cincinnati Lancet and Clinic, June 10, 1882, p. 504.

99 See Chomel, Op. cit., s. 145;—et al.

100 Fox, Op. cit., p. 174;—Lépine, Op. cit., s. 140;—Loring, N. Y. Med. Rec., Dec. 31, 1887, p. 820;—Seidel, Deutsche Klinik, 1862, s. 269;—Sichel, Gaz. des hôp., June, 1860;—et al.

101 They may appear sunken. Wittich, Pneumonie, Erlangen, 1850, s. 13.

102 See Thompson, Jour. Am. Med. Assn., July 24, 1886, p. 92.

103 Cataract followed in one case reported by Colburn, Jour. Am. Med. Assn., June 4, 1887, p. 619.

104 Gerhard, Am. Jour. Med. Sci., Vol. xvi, p. 328;—Seidel, Op. cit.;—et al.

105 Holt, Op. cit.;—Lépine, Op. cit., s. 76;—Seidel, Op. cit.;—Rogne, Mém. Soc. de Biol., 1869, p. 140;—Strauss, Rev. Men. de Méd. et de Chir., 1877, t. i, p. 749;—Seeligmüller, Deutsche Arch., f. k. Med., Bd. xx, s. 110;—Stortz, Inaug. Dissert., Würzb., 1884, s. 66;—Schreiber, Deutsche Arch., f. k. Med., Bd. xx, s. 55;—Homburger, Inaug. Diasert., Strasab., 1879, s. 83.

106 See case by Money, Lancet, 1890, Vol. ii, p. 818.

107 Horner, Klin. Monatsbl., 1871, s. 321;—Luckie, Am. Jour. Med. Sci., Vol. viii, p. 354;—Wells, Diseases of the Eye, Phila., 1880, p. 136.

108 This was a marked feature of the Plague of Athens and other epidemics. Thucydides, Opera.

109 See Friedleben, Arch. d. Heilk., 1847, s. 170;—Ziemssen, Op. cit., s. 230.

110 Op. cit.

REGISTRATION OF TUBERCULOSIS.

Special meeting of the College of Physicians and Surgeons of Philadelphia, held Jan. 12, 1894, the President, S. WEIR MITCHELL, M. D., in the Chair.

TO CONSIDER THE PROPOSED ACTION OF THE BOARD OF HEALTH IN REFERENCE TO THE REGISTRATION OF TUBERCULOSIS.

The Council to which the resolution and amendment with reference to the proposed action of the Board of Health concerning tuberculosis were referred, offered the following resolution to the College:

Resolved, That the College of Physicians believes that the attempt to register consumptives and to treat them as the subjects of contagious disease would be adding hardship to the lives of these unfortunates, stamping them as the outcasts of society. In view of the chronic character of the malady, it could not lead to any measures of real value not otherwise attainable.

That strict attention on the part of physicians in charge of the individual cases, insisting on the disinfection of the sputum and of the rooms, on adequate ventilation, and on the separation of the sick from the well as far as possible, will meet the requirements of the situation so far as they practically can be met, and better than any rules that, for diseases so chronic, can be carried out by a Board of Health.

That the College of Physicians respectfully requests that no official action be taken in the matter by the Board of Health, except the insisting on the disinfection of rooms in which consumptives have lived and died, in instances in which such procedure is not likely to have been adopted under the direction of the attending physician.

Discussion.

DR. OWEN J. WISTER—When I offered my resolution at the December meeting of the College it was objected by those who are in favor of registration of cases of consumption that nothing was intended beyond registration, in order that medical literature of a kind to warn persons of danger might be sent to their houses. In a paper read before the Pan-American Medical Congress on "Tuberculosis," and published in the *Medical News* of Oct. 21, 1893, there is a good deal more in reserve which is insisted upon.

Registration, in the first place, is meant to include the residences of all persons affected with pulmonary tuberculosis,

and even if the place of residence is temporarily changed it must be by and with the consent and knowledge of the Board of Health.

As to the literature, so-called, I think that is of doubtful desirability. Those who spent the summer of 1892 in town, when there was a cholera scare, will remember that there was a great deal of this sort of literature—the papers reeked with it. The evening papers published articles of such a sensational character that the Health Officer was lashed into such a state of hysterics as to propose a quarantine against New York, under the act of Legislature which makes such a proceeding lawful when a contagious disease is "raging in a neighboring city." The "rage" in this case amounted to four cases in a population of a million in a month. This proposition, however, was not adopted. But while the Board of Health was thrown into spasms of terror, there was enough that was ludicrous in this literature to throw the community into spasms of laughter, and we had a rather cheerful summer. It can not be hoped that this view will always be taken when, instead of a scare of two or three weeks, it will last ten or fifteen years, while from forty to fifty are dying a week. It is then possible that this literature may lash the whole community into a panic,and that instead of regarding the unfortunate victims of consumption as objects of compassion they will be looked upon as peripatetic fountains of danger, and a feeling of hostility to them will arise. This may last for years, for during the whole period of softening they are regarded as sources of danger. In fact, they are to be treated as criminals guilty of consumption. As I said before, their residences, however temporary, are to be disinfected and their miserable lives are to be rendered more wretched by being haunted by the familiars of the inquisition. It is asserted that if these radical measures are carried out tuberculosis will be eradicated in a few years; of that, it is said, there is no doubt. Now no other contagious disease has ever been extinguished,even with the added protection of vaccination in smallpox. Those of us who are not in the intimate confidence of Nature find it difficult to understand how an hereditary disease can be eradicated by measures which only limit its spread by contagion; and if it is not hereditary, whence come those forms of tuberculosis other than pulmonary? It can not be pretended that babies, a year or two old, get tubercular meningitis by contagion, nor can white swelling, nor suppurating glands, nor the many other exhibitions of scrofula come from contagion. I think very few of us will concur in this sanguine expectation. There are several other suggestions: one is likely to be very popular; it is that all persons working in factories and the like who are affected with pulmonary tuberculosis, in the softening stage, shall be withdrawn and, when necessary, supported by pensions. In this country we have a large experience of pensions; pensions have bankrupted the treasury of the United States. It is easy to believe that people unwilling to work could get the necessary certificate from some two-penny doctor and be supported by the State. As to the more serious part of the matter, the treating of persons so unfortunate as to have pulmonary tuberculosis, as criminals guilty of consumption, is something so frightful that I implore the College to interpose its remonstrance against such an outrage on common sense and common humanity.

Dr L. F. Flick—Together with other Fellows, I would like to bring up the entire subject for discussion, and, without wishing to find fault with Council in referring back the resolution in amended form, I should like to offer a substitute, which will bring up both registration and special hospitals for the treatment of the consumptive poor. The substitute is as follows:

Whereas, Tuberculosis is now known to be a contagious disease; and

Whereas, The methods by which the disease is conveyed from the sick to the well are now clearly understood; and

Whereas, It has been shown that the room which is occupied by a consumptive during the infectious period of the disease, and the furniture and the bedclothing which have been used by him, become infected and are liable to convey the disease to others who may occupy or use them subsequently; and

Whereas, Tuberculosis, owing to its long duration, cripples the bread-earning capacity of the family, when it occurs among the poor, to such an extent that the want and hardships which follow in its wake prepare the healthy members of the family for the disease; therefore be it

Resolved, That we recommend to the Board of Health of the City of Philadelphia the registration and disinfection of houses which have been infected by tuberculosis;

Resolved, That we recommend to the City Council of the City of Philadelphia the establishment of a Municipal Hospital for the treatment of persons suffering from tuberculosis.

The question of contagion seems to be admitted, and can, therefore, be eliminated from the discussion. I will then take up the question of prevention.

In reply to what has been said by Dr. Wister, I may state that the paper from which he quoted was a scientific paper covering the entire subject. He ought to have told you that the author pleads in that paper only for a beginning in preventive measures.

The contagion of tuberculosis being admitted, what measures are necessary for its prevention? The careful investigation of this subject from many points of view by Dr. Cornet, Dr. DeForest, and myself, show beyond doubt that there is a local infection—that the consumptive in his home is bound in his ordinary daily life to infect his room, the furniture, and the bedclothing. The experiments made by Cornet illustrating this subject are most elaborate. They covered a period of two years, during which time he perseveringly followed out his line of research. He examined the dust gathered from the floor, the walls of the room, the bedposts, and the bedclothing of persons in advanced stages of consumption confined to their beds. He found by inoculation with this dust that he was able to produce tuberculosis. He found, moreover, that where a patient was so sufficiently intelligent and obedient to follow the instructions to always spit in the sputum-cup and never into a handkerchief or on the floor, inoculation with the dust produced no effect; but where the patient occasionally spat into a handkerchief, or into a nook in the room. inoculation with dust from the surroundings of these places was effective. He was able to demonstrate that in proportion to the obedience and cleanliness of the patient the extent of the infected environment decreased. Where the patient was cleanly and took ordinary precautions, but not absolute precautions, the infection extended to only a limited space, possibly four or five feet. Where the patient was uncleanly and spat indiscriminately, not only the bed-posts and the floor but also the walls were capable of conveying the infection. The clinical investigations which I made in this city, and some illustrations of which I shall throw upon the screen, and the clinical investigations made by Dr. DeForest in New Haven, corroborate these results in such a way that their meaning can not be misunderstood.

I wish here to refer briefly to the results which I obtained in my investigations in the Fifth Ward of this city, and I shall throw on the screen sections of a map. This Ward contains 16,000 people and has 3,500 houses. I have tabulated the deaths from tuberculosis during twenty-five years:

Slide No. 1 shows probably the least infected section of the Ward. There were comparatively few deaths from consumption in this section. Where deaths are noted, they occur in groups—that is, in adjoining houses.

Slide No. 2. In this section some of the houses have had a number of deaths, while the majority are free.

During the twenty-five years there were 1,500 deaths from tuberculosis in the entire Ward, and they occurred in 650 houses.

Slide No. 3. This shows a section of the city inhabited largely by the colored race. Here the houses that have had the disease have had it frequently recurring. In this small street there is a house in which there have been deaths in five different families in succession, all the deaths occurring within a few years. I was recently called to visit a rabbi in this house, who had never lived in any other house in the city. He moved in in perfect health and in six months contracted the disease. Many of the other houses tell the same tale.

Slide No. 4. This section tells the same story. The houses that are infected have a large number of cases in succession. These cases have not always been in the same family, but have frequently recurred in different families.

Slides Nos. 5, 6, 7 and 8 show the same state of things.

Slide No. 9 shows a map of New Haven, showing the deaths during seventeen years, which was prepared by Dr. DeForest. His conclusions are exactly the same as mine. He found one interesting fact which I was not able to find, because I did not have the entire city. He found that the most populous districts are almost entirely free. In the First Ward, with thirty inhabitants to the acre, there were scarcely any deaths, while in one section which has a large mortality the population is only six to the acre. That proves conclusively that crowding does not entirely explain the death rate.

Slide No. 10 gives a section of New Haven, and shows the

same grouping as by map. It shows the recurrence of the disease in the same way as in the Fifth Ward of this city.

Now this evidence of infection and retained infection of houses, together with the demonstrations made by Cornet, can point only to one conclusion, and that is, that the houses which have been inhabited by a consumptive for a given period will retain the infection and convey it to others. I have investigated quite a number of cases which illustrate the same point. I have knowledge of a telegraph office down in Maryland in which five consecutive operators contracted tuberculosis and died. The results in these five cases were so striking that people became superstitious in regard to the office. I have been informed by a person who saw the office that the consumptives had spat around the office and that it was lined with tubercular sputa. I have been able in this city to trace a great many cases where persons innocently moved into houses, unsuspicious of any infection, and where within six months a member of the family who was healthy before has taken the disease, and this case has been followed by others.

Dr. DeForest mentions a very striking result of his investigations in New Haven. He investigated the histories of 100 cases coming to the medical clinic of the city, and found that 52 were living in infected houses. In 1888 I carefully examined the deaths that occurred in the Fifth Ward during that year. There were 83 *bona fide* deaths from consumption. Although out of the 3,500 houses only 650 were infected, two-thirds of these cases occurred in these infected houses. Of the remaining third a large number had lived in infected houses and had changed their residences, so that apparently more than two-thirds of the cases in which death occurred in 1888 had contracted the disease while living in infected houses.

If the facts I have related are true, how is it possible to institute any practical preventive measures without registration? The education that is spoken of in the resolutions offered by Council will not accomplish much. Cornet has shown that even when the patient has carried out most of the instructions, the immediate surroundings are infected. As you are well aware, among the very poor there is no nursing. The consumptive is apt to lie on a bench in the kitchen—a small room, perhaps eight by twelve feet. He had to wait on himself, and probably spits everywhere. Under such circumstances he is bound to infect the room, and it has been shown that the disinfection of such a room does not consist in burning sulphur, but special methods are required. One of the most efficient methods is rubbing down the walls with dry bread and then washing with carbolic acid or some other powerful germicide. The furniture and the bedding also require disinfection. You well know that the houses in which the poor live are owned by men who are trying to get as much money as possible out of them. The owners will not disinfect these houses if they can avoid it. It is only by the authority of the Government that this disinfection can be accomplished.

Now, is the profession ready to step forward and say: "We will make an earnest effort to stamp out tuberculosis?" The profession throughout the country has said that it will. The American Public Health Association, during its session in Chicago, adopted resolutions asking that registration should be practiced. The Section on Hygiene of the Pan-American Medical Congress adopted similar resolutions. The Congress of Tuberculosis in Paris, in 1888, passed resolutions asking that tuberculosis be recognized as a contagious disease, and in 1891 passed a resolution asking that disinfection be practiced.

Will disinfection have any effect? It will. I should like to cite one illustration: As far as I know, Berlin is the only city that has taken scientific precautions against tuberculosis. The result is most encouraging. In the city of Berlin there has been a marked reduction in tuberculosis from 1884 to 1891, the most rapid reduction of any city of which I can obtain statistics. In Philadelphia there has been a reduction. In London there has been a vast reduction since the establishment of consumptive hospitals fifty years ago. In Berlin there has been the most rapid reduction; from 1884 to 1891 there has been a reduction of 0.644 per 1,000. In 1884 the mortality in Berlin was 3.45 per 1,000, and in 1891, 2.811 per 1,000. In Philadelphia, where we have been priding ourselves on the reduction, there has been in ten years only a reduction of 0.623 per 1,000. Whether or not registration is being enforced in Berlin I do not know. I have been told by private parties that it is. Contrasting the reduction in Berlin with the reports from other cities, we find that the mortality in Paris was about the same in 1890 as thirty years prior—4.574 per 1,000. Whether or not France will succeed in establishing preventive measures is yet to be known. I have had no definite information on the subject.

As to the sentiment on this question, it is all on the side of registration. I grant that it may be hard for wealthy people to be recorded as suffering from tuberculosis, but this is a disease of the poor; the vast majority of consumptives are very poor, and the necessities of the poor so demand registration that it should outweigh the sensitiveness of the rich. But the sensitiveness of any one can be overcome by the suggestion embodied in the resolution I offered, a suggestion which was made to me by Dr. James C. Wilson—that is, instead of registering the individual to register the infected house. It would not then be necessary to register tuberculosis among the wealthy, as only houses that had been infected would have to be registered. Where infection can be prevented by proper sanitary measures, there would be no occasion for registration. This would enable us to register those houses that need to be disinfected.

The best place to study this subject is among the poor. It is there that I have learned my lessons. I am satisfied that every man here will reach my conclusions if he will go among the very poor and study this question at the bedside, and see how, one by one, these people die from the disease because they are unable to protect themselves and because, in the endeavor to protect and supply medicine to the stricken one, the healthy fall victims to the disease. It is these who need aid. The College of Physicians should now take a firm stand and do something in aid of these people. It is not necessary to do everything at once. Let us make a beginning. Experiments have been made; let us now come to action. It is not fair to the public that the medical profession, with the knowledge it possesses, should do nothing. The laity can not act because they have not the knowledge. If we, who have the knowledge, do nothing, we are certainly responsible for the deaths of those who otherwise might be saved.

DR. J. M. DA COSTA—Let me say, in the first place, that I thoroughly admire the enthusiasm which Dr. Flick has for years brought to the study of this question. I think the way in which he has gone about this work is in every respect most commendable, and in its spirit and scope this is one of the best series of observations with which I am acquainted. If I differ with him it is rather in the conclusions than in reference to his mode of investigation and his aims.

When we speak of contagion in consumption, we can not mean that it is markedly contagious. There is no proof that it is. It is not contagious like typhus fever, or smallpox, or scarlet fever, or diphtheria. It is only slightly contagious. It is, indeed, so slightly contagious that some of our best thinkers with the largest fields of observation, notwithstanding the evidence that has been adduced, still hold that it is not contagious at all. For instance, if we take the opinion of a man so long connected with the Brompton Hospital as Dr. Williams, we find in the last edition of his work on "Pulmonary Consumption," that he maintains that no more deaths from consumption occurred in the attendants of the Brompton Hospital than occurred among the same number in ordinary life. The evidence of Dr. Andrew, of the Victoria Park Hospital is in the same direction. When we look at the conclusions of these men and at those of Wilson Fox and many others, it is going too far to assume that the whole profession admits the disease to be contagious.

That it is moderately so, and that it can be communicated under exceptional circumstances, I firmly believe; but that we should regard it as a very contagious disease and take all the precautions that we do in such diseases, I deny. If it be contagious, it is contagious, as every one admits, chiefly through the sputum. Is it to be understood that an inspector from the Board of Health is to come daily to take care of the sputum cup? Is not the intelligent physician the proper health officer? Is not what he says sufficient, and can he not advise and enforce the destruction or the disinfection of the sputum as well as any public officer? Finding bacilli in the bedclothes and on the bedstead, and destroying them, will not eradicate consumption. Tubercle bacilli are widely diffused. They are in the dust of the air we breathe, blown about from the dried sputum of consumptives in the street. They have been demonstrated to exist on the fruit sold in our markets; they are in milk. They may, indeed, be said to be everywhere; and not only in the homes of consumptives. They have been found in churches, in places of amusement. Where will you draw the line as to watching and interfering with the life of the consumptive? Must we not take the broader view, and act on the degree of the communicability, and how far it is practicable to control

it, rather than on the mere abstract question whether tuberculosis be contagious or not? The degree, every observer knows, is extremely slight.

The excellent series of observations about the houses is, I believe, subject to several fallacies. In the first place, unless you know the history of the persons themselves, these observations on the houses supposed to be infected are not conclusive. You must know whether or not the individual inherited tuberculosis. I am one of those who believe that the disease is largely hereditary. Of what use is it to say how many living in these houses die of consumption unless you know the history as well as the number of those who have occupied them?

Again, we should bear in mind when discussing the contagiousness of phthisis, how enormously prevalent the disease is, and how difficult it is to draw conclusions when you have the most prevalent chronic disease to deal with. As bearing upon the question of infection from husband to wife, it has been calculated by Longstaff as a mere matter of statistics without reference to the question of contagion, that of every 148,121 men who die of consumption in the ages of married life, there would be 4,358 wives who would have consumption—that is, about 1 in 33. Thus, for every thirty-three married men who die of consumption there would be one woman have it, as a mere matter of ordinary frequency, whether the disease be contagious or not, and the probability would be a little more for phthisical wives. The number of cases seen in which both husband and wife have been affected is comparatively small. Flint, in over 670 cases, noted but five such instances. My record shows more such instances, including one where a tubercular husband had three tubercular wives. Still I have not met with very many, and the chances are always slight that the husband communicates the disease to the wife, or the wife to the husband. When we take all the facts into account, as well as the strong hereditary tendency of the malady, we must be careful how we draw conclusions in individual instances of apparent contagion.

Mindful of the observations of Dr. Flick, I have for some time questioned myself with reference to houses that I have known for years in which there has been consumption. But I have not taken them in one district, but everywhere. And this seems to me a much fairer way of studying the question, as the indiscriminate selection obviates the likelihood of error from bad hygienic conditions, especially of drainage, that houses near each other might share.

I have many houses in mind in which no case of consumption followed the first. In one, the father died of a slow consumption twenty years ago. The mother is, as regards tubercle, perfectly healthy to this day. The seven children have grown up into exceptionally healthy young men and women. In another house the wife died of consumption about eighteen years ago. The husband continued to live in the same house, and a family of children have grown up healthy. Another house has been occupied for many years by a consumptive who has had the disease for twenty-five years. Neither his wife nor any of the five children have become affected, though he is in the hands of a physician who does not believe in the contagiousness of the disease, and does not direct the sputum to be disinfected. Another house was occupied for years by a consumptive mother, whose husband had died of the disease many years before in another city. The son and daughter remained in the house mentioned for eight years in perfect health. It has since been occupied by a lady whose history I know, who is also healthy. The son got married about seven years ago, and has lived in various places. Within the last two years he has become a consumptive. His strong hereditary tendency determined it. I could go on citing instance after instance. I admit they furnish negative evidence. But negative evidence in a matter of this kind is valuable. I am on the whole quite certain that in by far the larger number of cases where I have known the history of both the house and of the household for a long time, there could not even be any suspicion of house infection. It is true also that in most of the houses cleanliness and ventilation were well attended to.

Further, in the question of house infection, we must not overlook the fact that these supposed centers of infection may adjoin, and have common drainage. And, under any circumstances, does it not suggest that possibly there is something wrong in the drainage or subsoil as much as it does infection of the house? The well-known observations of Bowditch, and of others, have made us familiar with this mode by which consumption spreads in Massachusetts and in the whole of New England.

With reference to hospitals: Consumptive hospitals have been brought forward as a strong evidence of the non-contagiousness of phthisis, though I can not say that the figures they adduce are to me absolutely convincing, and there may be something in the greater prevalence and concentration of the poison that make consumptive hospitals more likely to be sources of infection. I have already referred to the observations and opinions of Dr. Williams and of Dr. Andrew. But as regards general hospitals in which consumptives are, they certainly can not be shown to be places of infection. I will quote the remarkable results in the General Hospital of Vienna. That Hospital is one of the largest in the world. It is full of consumption, and there were, as we know by some observations made long since, and before the disinfection of the sputum was attended to, in three years 2,736 deaths from phthisis, and not a medical officer or a nurse had become infected. I will refer to the record of the Pennsylvania Hospital, which always has consumptives in its wards. I have taken some pains to ascertain the truth in this matter. In my long connection with the institution there never has been a time when there were not cases of tuberculosis in the medical wards, and there have also been cases of surgical tuberculosis in the surgical wards. Of 147 resident physicians who have been in the Hospital in the last seventy years, and of whom I have traced the medical history, and many of whom I have personally known and examined, but one has died of tubercular disease. Two others have at different times shown tubercular symptoms. One of these is now living in Arizona in fair health. In the other, even bacilli have disappeared from the sputa. The one dying, did not die for over five years after leaving the Hospital. Moreover, before becoming a resident physician, he was in delicate health, so that it is not fair to attribute his death to his having been in the Hospital.

A stronger statement still can be made with reference to the nurses. Of forty male nurses that have been in the Hospital in the last twenty-five years, but one has shown any sign of tubercular disease. He is now a patient in the Hospital. He did not become tubercular until four years after leaving. There have been 163 female nurses whose histories can be fairly well traced. Of fifty-three who have left the Hospital in the last five years we know their present condition accurately. Not a single one of these certainly has had any tubercular symptoms, notwithstanding that there was always tuberculosis in the wards, always some exposure, and until recent years disinfection of the sputum was not practiced, although ventilation was always attended to. There is only one case even doubtful. She has an occasional cough, and is not strong. Her father and mother both died of consumption.

When we take all these facts into account, granting, as I do, that up to a certain extent tuberculosis is contagious, I think that the recommendation of the Council to the Board of Health is the right one. Why fix the brand of leper on a poor unfortunate because he has consumption, when the medical officer can do all that is necessary? He can instruct how to ventilate and keep the house pure, and how to disinfect the sputa. What more could a Board of Health do? What can it do, except in instances of death where proper disinfection may not be carried out? Where death has occurred, and where disinfection is not likely to be practiced, it would be proper for the Board of Health to interfere. Under other circumstances why should we place a stigma on the consumptive, why have him pursued from house to house, why have him a marked man, why have the house a marked one? Why give it a bad name and injure the landlord, because there has been a death from consumption in it? I think that the resolutions offered by the Council cover the whole case. No human being will suffer. It will only enforce on medical men the necessity to insist on proper disinfection and proper hygiene. It will do as much as possibly can be done, and as much as any Board of Health can do.

With reference to hospitals for the consumptive, there is a great deal to be said on both sides of the question. Undoubtedly larger means of separating the sick from the well are desirable. But whether this can be made in any way obligatory is doubtful; large social questions and questions of finance arise which take the matter far beyond our power materially to influence.

We must not overlook the strong hereditary tendency to the disease. If you want ever to get rid of consumption, it is not going to be simply by the disinfection of sputa and similar means. It will be largely by the prevention of the marriage of tuberculous patients. There you strike at the root of the evil. Until hygiene, preventive medicine, and

law have reached that point, I think that we must let this question take care of itself, doing the best we can to limit the ravages of the disease. I admit that it would be most desirable if we could separate the consumptive from the well. If the State were rich enough to make colonies in climates in which consumption will not flourish, that would be a most admirable means.

Let me say that it is not because I do not believe that phthisis is communicable that I oppose the contemplated action of the Board of Health to declare the disease contagious, and to register consumptives, but because I believe that the means proposed will produce hardship without corresponding value, and that they are both unnecessary and insufficient. The Board of Health has already the right, and may well enforce it, to have any house that, whatever the cause, has a bad sanitary record, put in better order. Moreover, it can do much in destroying other sources of infection, such as from diseased meat, from the milk of tuberculous cows, in improving drainage, in favoring open spaces that air and sunlight may get into the houses. But let it leave the care of the individual where it belongs—to the conscientious physician.

DR. JOHN B. ROBERTS—It seems to me that this question is almost exactly the same as the one with which surgeons struggled ten years ago. I was one of the conservative ones who did not at first practice antisepsis, but employed half-way measures and saw all my cases suppurate. This is the point to which the question of tuberculosis has come.

I think that Dr. Da Costa's statement that there are a large number of cases all over the country, which he uses as evidence that the disease is not certainly infectious, is really an argument on the other side. It is so because there is infection. There are so many hereditary cases because infection of the parents has so weakened the tissues that a lowered resistance is transmitted to the children, and they can not repel the action of the bacilli.

It is said that the doctor can do all that is necessary, but Dr. Da Costa has said that he has known of cases where the physician would not take any precautions. That is a reason that the Board of Health should step in among the poor and see that the houses are clean. We see this in diphtheria. It is not a question of damage to landlords. It would be an advantage if every one knew that every house was disinfected, either by the willing efforts of the people, or owners, or by the Board of Health. There seems to be no reason why there should not be a report to the Board of Health if it will act in a reasonable manner. There is no expectation that the Board of Health would take the same measures as in typhus or typhoid fever. It is only a few years since typhoid fever was placed on the contagious list. If the matter had been discussed publicly there would no doubt have been many men on both sides—some for, some against, putting typhoid fever on the infectious list.

It might be well to mention what has been done in other places. In February, 1892, at a conference of the medical staff of the Manchester (England) Hospital, with the medical officers of health and others, it was unanimously resolved that it was desirable that certain cases of phthisis should be notified to the medical officer.

Dr. Hermann G. Biggs, the Chief Inspector of Pathology, Bacteriology and Disinfection in the Health Department, has sent to the Health Board a long statement regarding the contagiousness of tuberculosis, accompanied by a number of recommendations. He says:

"1. Tuberculosis is a contagious disease and is distinctly preventable.

"2. It is acquired by the direct transmission of the tubercle bacilli from the sick to the well, usually by means of the dried and pulverized sputum floating as dust in the air.

"3. It can be largely prevented by simple and easily applied measures of cleanliness and disinfection."

His recommendations include:

"That there be systematically disseminated among the people by means of circulars, publications, etc., the knowledge that every tubercular person may be a source of actual danger to his associates, and his own chances of recovery diminished, if the discharges from the lungs are not immediately destroyed or rendered harmless.

"That all public institutions, such as asylums, homes, hospitals, dispensaries, etc., be required to transmit to the Board of Health the names and addresses of all persons suffering from pulmonary tuberculosis.

"That all physicians practicing their profession in the city be requested to notify this Board of all cases of pulmonary tuberculosis coming under their professional care."

The North London Hospital for Consumption issues directions to its out-patients and to its ward patients, recognizing the contagious nature of tubercular phthisis and suggesting precautions.

The Royal National Hospital for Consumption, Ventnor has this to say:

"Patients are earnestly requested not to spit on the ground, floor, or fire-place, but to expectorate into the proper vessel. When this is not possible, the handkerchief should be used without fail; but in order that the expectoration may not become dry it has been arranged that a clean pocket handkerchief shall be supplied to each patient daily, the soiled one being at the same time removed for the double purpose of disinfection and washing. *It is to be distinctly understood that spittoons shall always be used when possible, and that the handkerchief is only supplementary to prevent spitting upon the ground.*"

The Manchester Hospital for Consumption takes similar ground:

"All matter coughed up from the chest should either be spat in the fire or should be received into a vessel lined in such a way with a piece of paper that the paper and its contents may be lifted out and burnt.

"Rags that can be burnt should be used instead of pocket handkerchiefs, and if a pocket handkerchief be used it should be well boiled before the matter upon it has had time to become dry and powdery.

"N. B.—The Medical Officer of Health for Manchester undertakes to purify, *free of cost*, any house that may be notified to him by competent medical men."

Last year the Northwestern Branch of the Society of Medical Officers of Health drew up a memorandum on the subject, which has been pretty widely distributed in the North of England. In this memorandum the infectious nature of consumption is definitely laid down, and dried sputum in the form of dust is indicated as the vehicle of contagion.

The County Borough of Oldham, England, gives similar "precautions against taking consumption."

The French *Ligue Preventive contre la Phthisie Pulmonaire* says:

"The most frequent and powerful source of infection lies in the expectoration of consumptive patients. Although almost harmless so long as they remain in the liquid state, the sputa becomes especially dangerous when they are reduced to dust. They quickly take on this form when they are projected on to the ground, the floor, the walls, when they soil clothing, counterpanes, bedclothing, curtains, etc., when they are received into handkerchiefs, napkins, etc."

With this evidence of scientific work in other places, can the College of Physicians of Philadelphia deny the contagiousness of phthisis, or doubt the advisability of the Board of Health knowing and registering the houses of at least the poor and careless, in which the germs of tubercular consumption are threatening the public safety?

While there may be a few who believe in the non-contagiousness of consumption, the vast majority does believe that it is contagious to a certain extent. It is the same old story of antisepsis and sepsis. The College of Physicians should go on record that consumption is contagious more strongly than appears in the report of Council. In the second place, something should be done. That seems to me to be in the direction of letting some officer know that the consumption bacilli are to be found in a certain locality. Not the physician, but some central authority should have the authority to know and the authority to enforce such measures as will limit the spread of the disease among the poor. If we limit it among the poor, we limit it among the rich.

(To be Continued.)

WISCONSIN STATE BOARD OF HEALTH.—At the last annual meeting Dr. S. C. Johnson retired as President and was succeeded by Dr. Solon Marks. Dr. J. T. Reeve, of Appleton, resigned as Secretary and was succeeded by Dr. U. O. B. Wingate of Milwaukee. Dr. Henry Day of Eau Claire was appointed to succeed Dr. Sharney, resigned. The voluntary retirement of the veteran sanitarian, Dr. Reeve, was in the nature of a surprise to the Board. Dr. Reeve had served since its organization as Secretary with distinguished success. The new Secretary, Dr. Wingate, is a man of fine presence, great executive ability, energetic, and thoroughly informed on sanitary subjects.

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SATURDAY, FEBRUARY 17, 1894.

MEDICAL EXPERTS.

"The fruit of a surgeon's experience is not the history of his practice, and his remembering that he has cured four people of the plague, and three of the gout, unless he knows how hence to extract something whereon to form his judgment, and to make us sensible that he is become more skilful in his art; as in a concert of instruments, we do not hear a lute, a spinette or a flute alone, but one entire harmony of all together. If travel and offices have improved them, 'tis a product of their understanding to make it appear. 'Tis not enough to reckon experiences; they must weigh and sort them, digest and distil them, to extract the reasons and conclusions they carry along with them."—MONTAIGNE.

Within a recent period there have been several trials in the city of Chicago which have called for the testimony of expert medical witnesses. Some of these witnesses were expert in the true sense; others were unfit to be considered in any such capacity. One medical gentleman who occupies a position of honor in the city government by the grace of some alderman, was quite at a loss to answer the simplest question in anatomy; the "Island of Reil" was a *terra incognita* to him, and he was hopelessly tangled in trying to explain an error in a typewritten document wherein the words, "hypostatic condition," were inserted instead of "hypostatic congestion." There were other persons placed on the stand as alleged "experts" who made an equally painful exhibition of their innocence of the rudiments of an ordinary medical education.

As is but natural, such an exhibition excited both pity and disgust, and at the last meeting of the Practitioners' Club of Chicago, the question of the employment of medical experts was the topic of discussion.

DR. ARCHIBALD CHURCH, who opened the discussion, said in substance that

"the present method of giving expert testimony had been gravely criticized, and a suggestion was made that a commission of physicians called by both sides in a case before court would be more conducive to justice. He thought the present plan was a good one, but opposed the cross-examination of experts as to their capacity, because such cross-examination had degenerated into brow-beating the witness. In conclusion he said: 'If we are to progress in this matter we should first provide that experts shall be experts; we should eliminate the brow-beating, discourteous and dishonorable attitude of counsel; we should elevate the moral standard of the judge who presides on the bench, and lastly we should secure those men to act as experts who have a personal knowledge of the case under consideration.'"

DR. D. R. BROWER said the lawyers called in doctors of their own way of thinking and the trouble would never be settled until the court called in men competent to give evidence without regard as to which side it would bear upon. DR. H. M. LYMAN thought physicians should cultivate the habit of intelligible testimony and confine their language to plain English. DR. D. A. K. STEELE asserted that as long as the doctors were experts for the fee that attached to their testimony all the evidence needed by one side or the other could be secured.

DR. DEWEY had in view the Prendergast case when he said that insanity as viewed by the court was entirely different from insanity as known by the physician. The law held that a man was not insane who knew the difference between right and wrong, while a physician knew that a man was capable of appreciating the distinction and of committing a crime with malice aforethought and yet be wholly insane. He held that expert testimony should be placed entirely under the regulation of the court and given by persons of known reputation selected through the discretion of the court and not by the partisan counsel. DR. BELFIELD urged the establishment of non-partisan medical testimony. The expert should be beyond the position of a mere witness and placed on a level with the judge.

The definition of an expert is thus given in Chambers Encyclopedia:

"EXPERT. (Lat. *expertus*, from *ex peritus*, specially skilled). A man of special practical experience or education in regard to a particular subject; a word commonly applied (after the French) to medical or scientific witnesses in a court of justice, when selected on account of special qualifications, as in case of an analysis of the contents of the stomach in suspected poisoning. The term is similarly applied to a person professionally skilled in hand-writing, for detection of forgery of deeds and signatures."

Webster says:

"EXPERT.—An expert, skilful, or practiced person; one who has skill, experience, or peculiar knowledge on certain subjects of inquiry in science, art, trade, or the like; a scientific or professional witness."

Zell's Encyclopedia:

"EXPERT—(Law.) A person selected by the court, or by parties in a cause, on account of his knowledge or skill, to examine, estimate and ascertain things, and make a report of his opinion."

The discovery of truth, so far as it lies within his knowledge, for the information of the court and jury, should be the sole object of the expert witness, and the efforts of counsel to distort the truth to one side or the other, should lead the expert to be on his guard.

Much of this bias toward one or the other side, frequently arises from their being employed practically as assistant counsel, to coach the attorneys. In our judgment, a witness should be ineligible to give evidence as an expert, who has acted as adviser to counsel in the case at issue. If the judge should have the power to accept or reject a witness tendered as an expert, and would exercise it, after due examination of the qualifications of the witness, much would be gained to the cause of justice and the honor of the profession.

The German Government has solved the expert problem in a very satisfactory way. In that country the "*Gerichts Arzt*" is a medical referee appointed by the Government for a particular district. He can only receive appointment after a rigid examination by a Government Board, and when appointed and assigned to a district he is a salaried officer of the State, and his reports ("*Gudachten,*") are final on medical questions.

It is quite possible that an Act of the Legislature which would authorize the State Board of Health, or State Board of Medical Examiners, to give certificates to medical gentlemen, stating in what particular branch of medical science the recipient was qualified to give evidence as a skilled witness, would remedy the evil; at least it would be a great advance on the present system, which is not only unsatisfactory to everybody, but a blot on the jurisprudence and scientific standards of the age.

But no test of ability can insure honesty of purpose or of character; there the personal equation of the witness must stand for what his reputation in the community is worth.

The Medico-Legal Society of Chicago held a meeting Feb. 10, and adopted the following resolution:

To guarantee the interest of society and of the accused in all medico-legal investigations at least two experts shall be employed. These experts shall be appointed by the Judge.

It was unfortunate that the Society was so managed as to discuss the issues of a case still pending in the Supreme Court, as it gave a pretext for the assertion that the meeting was a pre-arranged attempt to influence the Court, and a "sharp dodge of the defense."

THE VISITS OF THE CLERGYMAN TO OUR PATIENTS.

In the sick room and at the bedside of the suffering, the clergyman and the physician meet. The one looking to the spiritual, the other to the material welfare of the patient. The spiritual healer knows, or ought to know, that it is only in a sound body the best mental achievements can be realized, while the physician understands equally well that unless the mind is at rest, the bodily healing is of doubtful certainty. In such a case can they afford to make war on each other? Each in his chosen profession will feel like exalting the line which he follows, as conducting to a successful issue; but may he be able to do this without the coöperation of the other? "No man liveth to himself; no man dieth to himself," is the declaration of Holy Writ. With this interdependence between the workers can it be otherwise than that the most satisfactory results will only be reached by mutual coöperation? Hence follows the obligation to good will and a clear understanding of the duties of each in the matter of mutual support.

This desire, however strongly felt, is complicated by that indefinable territory lying in the patient, where the material ends and the psychical and moral begins. This territory seems to be in some sort related to both, and hence the danger of physician and clergyman acting in antagonism to each other. Suppose, for example, that the physician finds his patient in such a critical situation that he regards it as necessary that the sick man should not know the danger until the crisis is past, and the clergyman, knowing the danger, feels that the man's soul must not be put in peril by leaving him to pass away without due preparation for the passage, will they not honestly endeavor to counteract each other's work? By this means intensifying the man's sufferings, and so rendering the labors of both abortive.

It will not require any great stretch of the fancy to see that in the case supposed it would be far better for both to work together to the same end. The clergyman might make things lively by telling some of his best stories, and join with the physician in drawing the sick man's mind away from himself, and both together could demonstrate that "two are better than one." In such an emergency the sick room should, if possible, be made the pleasantest room in the house. We remember medical men who had cultivated cheerfulness to such a degree, that their very presence was an invitation to come into the light, and clergymen, too, who had the good man so strongly presented in their faces that the children hailed their coming with delight. Let two such spirits meet in the sick room and they would almost carry everything before them. The grace of cheerfulness has never been cultivated for half its worth in this work-a-day world of ours.

We offer these thoughts to our brethren in the hope that while the "times are hard," everything that may reasonably be done to alleviate suffering, will be duly considered, and that sympathy will be cheerfully given whenever there is a possibility of making men happier and better. As specialists men work into grooves from which it seems almost impossible to draw them. They isolate themselves and so circumscribe their own usefulness.

We do not propose to trespass upon the peculiar domain of the clergy, but we do desire that when our labors lie in the same fields, that a friendly sympathy shall render our mutual labors more efficient. Physicians have not done the best work of which they are capable, and never shall, until the inspiring power in the support of kindred spirits shall be more fully realized than at the present time. The trend of mankind is toward fellowship in these days as never before. Let our profession not be laggards in the race.

WEATHER AND DISEASE.

A country physician with large practice, was deploring his inability, from constant work, to make original researches, or to read books, and expressed the opinion that no one with a large country ride could contribute much to the science of medicine. This is a common error which a little reflection will quickly disprove. As an illustration take the common theme of all conversation, the weather. The physician with long rides in the country, and time for observation and reflection, can be an expert and contribute facts in this field as important to science as those found in the laboratory and by the microscope. By the weather we mean the moisture, temperature, pressure, winds, clouds, ozone, electricity, sudden changes of heat and cold, storms and sunlight. From the earliest times these forces have been recognized as all-powerful in the production of disease. In our climate prolonged hot or cold periods very clearly affect the death rate, but how and to what extent is unknown. Certain diseases are retarded or accelerated by those forces. The unknown and psychic effect of the weather on all, both sick and well, are within the observation of every one, and yet very little study has been made in this direction. The prayer book recognizes this fact, in petitions for favorable weather, and protection from lightning and sudden storms. Even the POPE has prepared a manual to be used by the clergy in bad or unfavorable weather.

DR. FARR of England, and other authorities, have said that the thermometer would register very largely the disease mortality and even criminality of a community. The weather proverbs of the almanacs and the observations of persons who live in the country, are practical store houses of obscure half facts, that await study in the future. Thus everywhere these variable forces we call weather, affect and influence the physical and psychical conditions of both men and animals. The physician in the country is in the most favorable condition to study these facts. The surroundings are always more sensitive to these changes than in the city, where artificial states largely control disease. The country and country village are the real laboratories where these unknown forces can be watched and determined.

A vast literature of facts invested in superstition and delusions, cover this region, and the country physician should of all others be a teacher here.

A barometer and thermometer costing only a small sum, to measure the pressure and temperature of the air, hung up on the office stoop, and a blank book in which any member of his family can record the readings of these instruments three or four times a day, with the directions of the winds from the weather vane, this with his daily record of cases, will be the starting point.

He will soon begin to trace some connection in his cases of fevers, and the obscure nerve troubles and exhaustions, to these sources, and a new field will open for original work, the fascination of which will relieve the drudgery, and make the long rides moments for pleasing reflection. From this point the facts of the weather influence on disease will accumulate and widen, suggesting other methods of observation and other means of measurement by instruments to give accuracy to the facts. The physician in the mountain region will accumulate facts that are peculiar to the special cosmic conditions of that section, and the physician in the river valley will have a new range of facts for his section.

The observers on the sea shore or lake border, or on the open prairie or wooded country, will each have a different story; each have different facts, which will be parts of great laws of the highest practical value. In a large manufactory where three thousand men are employed, the daily product varies with the weather from 5 to 12 per cent. less. Days that are bright and clear bring out the best work in the largest quantity, and days that are stormy and cloudy are followed by poor work, from 5 to 12 per cent less. The local physician was appealed to, to explain this fact. Had he made a study of these common influences, which are the subject of every day's greeting, he should have been able to throw some light on this problem.

A noted surgeon thinks his cases recover more quickly when operated on in clear bright days; a physician of some prominence gives his drugs on dark days, and believes narcotics act more profoundly at these times. These facts and opinions are almost innumerable and can be found in every community. Who will enter this field to explain these phenomena? The physician who has full opportunity for observation, and time to reflect, must do this work. The village and country doctor is better situated for this than any others.

This is only one field of study that can be carried out in long lonely rides and practice in the country. The absence of professional contact, and the physical weariness of exposure to all sorts of weather, has its full compensation in opportunity to become students of nature, and master the facts that are spread out everywhere. The country physician can not only become eminent in medicine, but in other fields of science. All that is essential is powers of observation, and disposition to study the facts that, like an open book, are all about him.

LIABILITY FOR DISMISSAL OF PATIENT.

The liability of a physician in dismissing a patient is passed upon by the Supreme Court of Iowa in the case of Mucci v. Houghton, decided Jan. 17, 1894. This was an action brought to recover damages for

alleged malpractice. The former had sustained a fracture of his left arm between the wrist and elbow. Both of the bones of the arm were broken. He employed the doctor sued to reduce the fracture and treat the injury. The latter at first bound up the arm in splints, and afterward incased it in a plaster cast. After giving attention to the injury for a little less than two months by examining the condition of the fracture the cast was removed, and the surgical attention ceased. The ground of the complaint was that the doctor treated the injury so unskilfully that when the treatment ceased the injury was not cured, but a false joint was created between the elbow and wrist at the place of fracture. There was a trial by jury, and a verdict and judgment for the party suing, which is affirmed by the Supreme Court on appeal.

One paragraph of the trial court's charge to the jury was as follows: "If a physician or surgeon be sent for to attend a patient, the effect of his responding to the call, in the absence of a special agreement, will be an engagement to attend the case as long as it needs attention, unless he gives notice of his intention to discontinue his services, or is dismissed by the patient; and he is bound to exercise reasonable and ordinary care and skill in determining when he should discontinue his treatment and services. If you find from the evidence that the condition of the plaintiff's arm is due to his having been dismissed when he ought not to have been dismissed, the defendant would be liable, unless the evidence further satisfies you that the defendant, in dismissing him, if he did dismiss him, used ordinary and reasonable care and skill in determining when to dismiss him; and, if he dismissed him under a mistaken judgment, he would be liable, and you should hold him liable unless you find from the evidence that, in making up his mind when to dismiss him, he exercised reasonable and ordinary care and skill and had regard for, and took into account, the well-settled rules and principles of medical and surgical science."

It was argued that the last part of this instruction required a greater degree of diligence and skill than the law imposed upon a physician and surgeon in the practice of his profession. He was required by the instruction, in determining whether his patient had so far recovered as to require no further medical or surgical attention, to exercise reasonable and ordinary care and skill, and to have regard to and take into account the "well-settled rules and principles of medical and surgical science." This the court holds was not erroneous, especially as the jury were told in another part of the charge that the law required a surgeon to have and exercise the average or ordinary skill possessed by members of his profession in his locality.

It may also be noted that in this case it is further held that it was not improper to permit the plaintiff, as a witness, to state in general terms that he complied with the instructions given by the doctor, as it would not be practicable for him to state what he was told to do, and then relate the particulars of what he did.

CORRESPONDENCE.

Ligation of Uterine and Ovarian Arteries.

To the Editor:—In your issue of Feb. 10, 1894, a report of a case is made by J. B. Greene, M.D. of Mishawaka, Ind. The report consists of a description of *ligating the uterine arteries and both ovarian arteries.* The writer said: "Accordingly I made the ligation of the uterine arteries and a part of the broad ligament, after the method described by Martin, but found it impossible to reach the ovarian arteries per vaginam. I then cut through the abdomen and with considerable difficulty was enabled to pass a ligature around both ovarian arteries, passing my needle under the Fallopian tubes and then back and around the vessel, tying close to the uterus. The uterus showed such a great engorgement of blood that I felt certain there would be no danger of gangrene of the uterus, as there was sufficient collateral circulation from branches of the ovarian arteries to maintain life in the organ."

As this report appears in one of the best journals of this country I deem it proper and just to criticise it.

Just think of ligating both ovarian and uterine arteries in a living woman. They are the only source of life to the uterus. I state this from some sixty careful dissections of the human uterus by my own hand. For in no single case could the uterus be kept alive by by the tiny little branch which springs from the deep epigastric that runs toward the uterus on the round ligament. Besides, the writer says, the tumor would likely weigh ten pounds, and yet he cut off the nourishing arteries of ten pounds of tissue. But no gangrene followed, for months afterward the same operator examined and found that she was menstruating regular. The writer said he tied both ovarian arteries and both uterine arteries and then "felt" there was sufficient collateral circulation to maintain life in the uterus. Where is such collateral circulation found? It can not be in the artery of the round ligament, and anatomy so far has not demonstrated any other.

The fact is, that such reports are dangerous, and they show how new operations may be abused by those unacquainted with natural facts. Any one familiar with anatomic facts of uterine circulation would expect nothing but gangrene if he ligated both ovarian and uterine arteries, especially when the uterus is large. If the ovarian and uterine arteries are ligated the uterus can be cut out of its place with anatomic certainty without fear of hemorrhage being fatal. There is no doubt that the operator in this case did not secure either ovarian artery, as in cases of tumor it frequently is situated a considerable distance below the tube. The reporter, in this case, combined Dr. Martin's operation of vaginal ligation of the uterine arteries with the operation that I presented some time ago, which is, to ligate the ovarian arteries and the uterine as it courses along the side of the uterus. But these two operations must not be done at the same time on the same patient. Such a procedure will bring gynecology into disrepute. Large active viscera will nearly always gangrene by suddenly cutting off the arterial supply. The change is so sudden that they have not time to atrophy. Sloughing of uterine tumors is not a rare matter,

even without the interference of surgery. No doubt the intended view in this operation missed its mark and saved the life of the woman. But in any case it was such a radical, ill-advised and hasty application of the operation that, no doubt, had the surgeon time to reflect he would not even attempt it with an understanding of anatomic facts.

I do not think that any expert could go into court and support any physician who would ligate both ovarian and uterine arteries and not extirpate the uterus. Even if no disaster followed (which is anatomically and physiologically contrary to known laws), I would consider it an unjust experiment to ligate both uterine and ovarian arteries. Again, the physician who will ligate both uterine arteries and one ovarian artery at one operation is, so far as we know at present, putting the life of a patient in jeopardy.

I wish the reporter of this case to understand that I have no ill feeling to present, as I am not acquainted with him personally. The report appears in public print, and it is the right of liberty to criticise in public print. It may be the means of restricting the attempt of the ligation of both uterine and ovarian arteries on the same patient at the same time.

F. Byron Robinson, M.D.

Chicago, Feb. 13, 1894.

"Superfluous Spectacles."

Chicago, Feb. 9, 1894.

To the Editor:—The editorial in the Journal of February 3, under the above title, is on the whole excellent. I had read Dr. Pooley's article which was the text for the editorial carefully and with much pleasure, and in the main concur in his conclusions. There are some points in the editorial, however, which are not deducible from Dr. Pooley's article, and others which are entirely apart from it, which, it seems to me, are open to criticism. First, you seem to argue, though that is not very clear, that if a patient when out of health has glasses prescribed which he wears with relief and comfort until the general health improves and then voluntarily relinquishes them, that the glasses were of no service. As well might you argue that the tonic or restorative medicine taken when out of health was of no benefit because not needed when the health is restored. I believe it is a very common practice with oculists (it certainly is with me) to prescribe lenses with the distinct expectation that they can be taken off when the general health and the eye health improves. The rest given to the eyes by the glasses assists the eyes to so recuperate that they may be used comfortably without glasses; and the relief given thereby to the nervous and muscular systems, is, I am sure, a potent factor in the general restoration of health. It is not at all uncommon to find young persons suffering from almost constant headache from eye-strain, and in whom the headache is relieved at once and entirely by proper lenses, after a time gradually leaving off of those lenses, without a return of the headache. Does that prove that the glasses were of no use? Does it not rather prove that the eyes have been so strengthened and improved by the glasses that they are now able to do their proper work without the fatigue and pain formerly experienced? In such cases, where there is a moderate degree of ametropia only, I invariably instruct my patients that the glasses are a means, not an end, and that it is to be hoped that they may later be able to discard them wholly or in part. You ask: "Does every optic defect need correction?" Certainly not, nor do I think that any prominent ophthalmologist so teaches. It seems to me that the indications for lenses are and should be very distinctly kept in view. They are but two, the relief of discomfort in the use of the eyes and the improvement of vision. If there is no discomfort from the use of the eyes but vision is improved by lenses the patient may, I think, elect whether he will wear glasses or not. If the bother of wearing glasses is greater than the pleasure of improved sight he may with propriety refuse them. (Except in progressive myopia which is foreign to this topic.) If on the other hand there is discomfort from the use of the eyes which can be relieved more easily by the use of lenses than by any other means, I care not whether the required lens be of high or low power, such lenses should be prescribed and worn so long as, and no longer than they are beneficial. And this leads to the consideration of what it seems to me is a most important misconception in your editorial when you comment on the use of low degree spherical and cylindrical lenses. You argue that the eye can not appreciate a less degree than 0.75 D. sphere and a less degree than an 0.50 D. cylinder. If this were so it would very much simplify our trial cases of test lenses. There is no logic in saying that the eye can not appreciate less than 0.75 D. S. below 0.75 D. and yet can appreciate a shorter interval above that; or that the eye can not appreciate less 0.50 D. C. below 0.50 D. and can appreciate less than that above. So that, if your statement is correct our trial cases instead of having, as usually now, twelve pairs each of spherical and cylindrical lenses up to 3.00 D. need have but four pairs of spheres viz: 0.75 D., 1.50 D., 2.25 D., and 3.00 D., and eight pairs of cylinders viz; 0.50 D., 1.00 D., 1.50 D., 2.00 D., 2.50 D., and 3.00 D. The fact is, however, that the ordinary eye can appreciate a difference of one-fourth of a diopter in either a sphere or cylinder between one and three diopters and one-eighth of a diopter below one diopter. But the ability of the eye to appreciate such small differences is no proof that such differences are of practical importance; that must be determined by clinical experience. In regard to that you say: "The majority of oculists have learned from their own experience, as well as from the failures of the champions of the 0.25 D. cylinder, that such weak glasses are merely of mythical value." I think you are mistaken in that statement. So far as I have been able to learn and observe, the oculists who believe that such weak glasses are of merely mythical value have not used them. They do not believe that such lenses can have any value and so have never tried them. While those who now use them have many of them, like myself, started in skepticism to try weaker glasses than were formerly used and finding them helpful have tried again and again until now, speaking for myself, I should rather lose any other one lens from my trial case than the 0.25 D. cylinder. Again you say, "It is true that a cylinder of 0.25 D. is not only employed but even highly recommended by a few prominent oculists, but they have as yet furnished no proof that such lenses benefit their patients." Now that statement surprises me very much, for I thought a great deal of proof of such benefit had been furnished. I will therefore make this proposition, for if such proof has not been presented it should, if available, be before the profession. If you will indicate what proof you consider conclusive, I will endeavor to furnish the proof to establish the fact, if it is a fact, as well as any fact in medicine is established, that an 0.25 D. cylinder is a most valuable therapeutic agent.

Horace M. Starkey, M.D.

An Undignified Letter.

To the Editor:—The complaint of Dr. Cohen, published in the Journal several weeks ago, was no doubt prompted by a keen sense of professional propriety; but did he not forget his high aim in the unprofessional and undignified tone of the latter part of his communication? As a matter of fact, a portion of it should not have been printed.

Constancy.

BOOK NOTICES.

The National Dispensatory. Containing the Natural History, Chemistry, Pharmacy, Actions and Uses of Medicines, including those recognized in the Pharmacopœias of the United States, Great Britain and Germany, with numerous references to the French Codex. By ALFRED STILLE, M.D., LL.D., Professor Emeritus of the Theory and Practice of Medicine and of Clinical Medicine in the University of Pennsylvania; JOHN M. MAISCH, Ph.M., Phar.D., late Professor of Materia Medica and Botany in Philadelphia College of Pharmacy, Secretary to the American Pharmaceutical Association; CHARLES CASPARI, JR., Ph.G., Professor of Pharmacy in the Maryland College of Pharmacy, Baltimore, and HENRY C. C. MAISCH, Ph.G., Ph.D. New (fifth) edition thoroughly revised, according to the new United States Pharmacopœia (7th Decennial Revision, 1894). In one magnificent imperial octavo volume 1,910 pages, with 320 elaborate engravings. Cloth, $7.25; leather, $8.00. With Ready Reference Thumb-letter Index, cloth, $7.75; leather, $8.50.

The sweeping changes made by the last United States Pharmacopœia necessitated corresponding changes in the well-known dispensatories, which are really "companions" to the Pharmacopœia. No physician can well afford to do without the work, and to the pharmacist it is indispensable. The work under consideration has been thoroughly revised, many of the older articles have been rewritten, and a large number of new ones introduced descriptive of all the latest synthetic remedies and unofficial preparations now in use. Prof. Stillé says:

> In preparing a work under the conditions imposed on the present one, it is impossible, even with scrupulous vigilance, to prevent a certain commingling of fact and speculation, for the most cautious reporter can not always avoid mistaking the one for the other. The present writer claims only to have striven assiduously to maintain a separation between facts and theories, believing that whatever fate may await the latter, the former are in their nature indestructible; '*Opinionem commenta delet dies; naturae judicia confirmat.*' The deplorable results of following physiologic experiment and chemic composition, instead of clinical experience, as the chief teacher and guide in therapeutics, have led to the rejection by practical physicians of many medicines which not long before were introduced with loud acclaim.

The work is well indexed and the publishers state that the therapeutic and general indexes contain 25,000 references. The revision is not perfunctory, but a conscientious one, and the fifth edition is a worthy successor of the editions that have preceded it. The dosage has been given throughout in the decimal system, and the metric weights and measures are used throughout, which will be of great service to those wishing to write their prescriptions in the (now almost universal) metric system.

The Johns Hopkins Hospital Reports. Vol. iii, Nos. 7, 8, 9. Report in Gynecology. Paper. Pp. 762. Baltimore: The Johns Hopkins Press. 1894.

This handsomely printed and well-illustrated volume contains ten articles by Howard A. Kelly, M.D., and articles by Mary Sherwood, M.D., Albert L. Stavely, M.D., Hunter Robb, M.D., W. W. Russell, M.D. and A. S. Murray. In addition to the foregoing there is a record of the deaths occurring in the Gynecologic Department of the Hospital from June, 1890, to May, 1892.

The volume appropriately opens with a picture and description of the gynecologic operating room.

The topics are: 1, "An External Direct Method of Measuring the Conjugate Vera;" 2, "Prolapsus Uteri without Vesical Diverticulum, and with Anterior Enterocele;" 3, "Lipoma of the Labium Majus;" 4, "Deviations of the Rectum and Sigmoid Flexure associated with Constipation a Source of Error in Gynecological Diagnosis;" 5, "Operations for the Suspension of the Retroflexed Uterus;" 6, "Potassium Permanganate and Oxalic Acid as Germicides against the Pyogenic Cocci;" 7, "Intestinal Worms as a Complication in Abdominal Surgery;" 8, "Gynecologic Operations not involving Cœliotomy;" 9, "The Employment of an Artificial Retroposition of the Uterus in covering extensive denuded areas about the Pelvic Floor;" 10, "Some Sources of Hemorrhage in Abdominal Pelvic Operations;" 11, "Photography applied to Surgery;" 12, "Traumatic Atresia of Vagina, with Hematokolpos and Hematometra;" 13, "Urinalysis in Gynecology;" 14, "The Importance of Employing Anesthesia in the Diagnosis of Intra-pelvic Gynecologic Conditions;" 15, "Resuscitation in Chloroform Asphyxia;" 16, "One Hundred Cases of Ovariotomy performed on Women over Seventy Years of Age;" 17 and 18, Statistical Tables. The work is valuable, and is creditable in every particular to the great University.

Operative Surgery. By TH. KOCHER, M.D., Professor at the University and Director of the Surgical Clinic at the Berne University. With 163 Illustrations. New York: Wm. Wood and Company. 1894.

Prof. Senn, in his "Four Months Among the Surgeons of Europe," says on page 148:

"From my acquaintance through literature I had always considered Kocher of Berne, one of the ablest of living surgeons, and in this opinion I was only confirmed by a personal acquaintance."

Thus introduced to English-speaking Americans, a book in English by Professor Kocher will be received with great attention and deference. The book is divided into four parts, the first of which is devoted to the introduction, general remarks on anesthesia, the treatment of wounds and the selection of the direction of the incision. Part II includes special operations; incisions; the relations of the cerebral convolutions to the skull; trephining, and operations on the face; the upper lateral cervical triangle; the anterior cervical triangle; the lower lateral cervical triangle; the nuchal region; the thorax; the spinal column; the lumbar region; the abdomen; the perineum; the sacral region; the upper extremity; the lower extremity; the thigh; the leg; and the foot. Part III gives the resections, and Part IV the amputations and exarticulations.

The book is remarkable for its extreme simplicity of style, its entire freedom from superfluities of any sort, and its directness. These are, indeed, always characteristics of a master, whether the topic be war, religion, law or medicine. These characteristics were possessed by Cæsar and General Grant, St. Paul and Bishop Bossuet, Cicero and Blackstone, Hippocrates and Celsus. The nearer the approach to the simple models, the more enduring the work.

Kocher's book is of that character that in times to come it is quite likely to be taken for the exponent of the method of operating of our epoch. The book itself does not record the beginning of a procedure, or trace the planting of the seed; it simply reproduces the full-blown flower, as this century's surgeons have developed it.

Treatment of the Diseases of the Stomach and Intestines. By DR. ALBERT MATHIEU, Physician to the Paris Hospitals. Cloth, pp. 294. New York: Wm. Wood & Co. 1894.

This book purports to contain a general summary of the therapeutics of diseases of the stomach and intestines. At the outset there is an excellent chapter on diagnostic technique, and as the French have always excelled in diagnosis we find the book here very strong.

The diagnostic study of the author falls under the following heads: 1, External Examination; 2, Internal Examination, together with a chemical study of the Gastric Juice; 3, Study of the Excreta.

In the external examination of the stomach the author regards the elastic siphon as essential. The giving of a test meal, forced feeding, and washing out the stomach, are all of importance, according to our author. He prefers the Frémont tube to any other, and it is the one he habitually uses:

> Frémont's tube is smooth like that of Debove, and a little less rigid.

It is, however, stiff enough to enable it to pass readily the isthmus of the pharynx, even in patients who have never submitted to the operation before. It is longer than other tubes, and this increases the aspiratory power of the siphon. A small glass tube is inserted in its course, which enables us to see whether the fluids to be passed into or withdrawn from the stomach flow readily. This is especially useful when gavage is practiced. Finally, the gastric extremity of Frémout's tube is provided with a wide opening, so that it is less easily pinched by the walls of the stomach than are the other tubes; and it is more apt to remain patulous during the giving of a test meal.

The author, however, does not use the other parts of the Frémont apparatus, and seldom uses the aspirator for extraction, preferring Ewald's method of expression, which is thus practiced:

"The sound being introduced, whether during fasting or after a test meal, the patient is told to cough. He ought to cough especially with the diaphragm, in such a way as to cause a series of blows against the stomach. This suffices in most cases to fill the tube, and the gastric fluids then flow out on the principle of siphonage."

As it is not yet considered desirable to make a fistulous opening into the stomach, *a la* Alexis St. Martin, every time it is desired to examine the fluids of the stomach, a test meal is given the patient and "removed at end of an hour counting from the time the first mouthful is taken."

Space will not permit us to give further extracts from this highly interesting and truly scientific volume, which should be read by every medical practitioner desiring to keep pace with the advances of the profession.

The book is marred by an excess of zeal on the part of the translator, who has translated most of the formulæ into ounces, scruples, drachms and grains, instead of allowing them to remain in the simple and easily understood metric system now employed throughout the civilized world, except by the British.

Politzer's Text-Book of the Diseases of the Ear and Adjacent Organs. For Students and Practitioners. Translated by Oscar Dodd, M.D., Assistant Surgeon at the Illinois Charitable Eye and Ear Infirmary; Clinical Instructor of the Eye and Ear in the College of Physicians and Surgeons, Chicago. Edited by Sir William Dalby, F.R.C.S., M.B. Cantab., Consulting Aural Surgeon to St. George's Hospital. With 330 original illustrations. London: Baillière, Tindall and Cox. 1894. Third edition, pp. 740.

This is a great work. It marks an epoch in the progress of otology and portrays with conservatism the present status of the specialty. The coming of this book has been looked for with more than ordinary interest by American aurists, who largely draw their inspiration from the accomplished author. Indeed, so marked is the confidence and esteem with which he is regarded by the many on this side of the Atlantic who have been taught in his Vienna clinics, that we might aptly confer on him the title of Politzer, our patron saint.

The publishers have produced a handsome volume, with abundant, well executed illustrations. Dr. Dodd deserves our thanks for the very creditable manner in which he has performed, for our benefit, the arduous duties of the translator. The purity and perspicuity of his English will be appreciated. Another point to gladden the heart of the evening reader—the paper is not glazed.

There are two subjects concerning which otologists will be particularly anxious to know Prof. Politzer's present views. The operations for the removal of the ossicles, and on the mastoid process. Detailed descriptions of the various methods for opening the mastoid are given, especially those of Stacke, Schwartze and Bergmann.

An advanced position is taken on the question of operative procedures. The necessity of operations in many cases can be easily seen from this observation on page 489: "With every acute middle ear suppuration, pus is found in the cells of the mastoid process, as I have proved by numerous dissections." Probably no other aurist has made as many valuable dissections. His collection of specimens exhibited in Berlin, at the last Congress in Chicago last summer and at the Pan-American Medical Congress were the delight of lovers of aural anatomy and pathology.

In advising practice for operating he remarks: "To become sufficiently skilful the operation should be done at least forty times on the cadaver."

The author speaks much more favorably of excision of the membrana tympani and ossicula for dry catarrh than did those who participated in the discussion of this subject at the large meeting of otologists in Berlin in 1890. It was treated with much disfavor at that time. Yet he does not really commit himself in favor of it. He believes that "the operative treatment for disturbances of hearing caused by the adhesive processes after suppuration of the middle ear is exhausted has a greater future than the operative treatment of the non-suppurative adhesive processes." Concerning the recently reported sixteen cases by Jack, in which favorable results followed extraction of the stapes, he says: "The reports of Jack should taken with great caution."

Examiners for life insurance will be interested in the rules proposed here for admission and rejection of applicants with ear affections. The rules are not only safe but stringent. Here, as everywhere, the author's commendable conservatism is apparent.

It is frequently remarked that European otologists pay far less attention to naso-pharyngeal diseases as etiologic factors in ear diseases than American specialists, but here are eighty-four pages devoted to the subject. It is somewhat surprising, however, to find the inhalations of the strongly irritating vapors of acetic acid, ammonia, etc., recommended for acute catarrh, and to see the Weber nasal douche, a pernicious instrument, mentioned except for condemnation. But excellent precautions for its use, and warnings are given, for those who will use it.

Pilocarpine injections into the tympanic cavity, that have been very favorably reported on by the author, have been tried and abandoned by a number of Americans as affording negative results.

Concerning Lucae's sound he speaks rather discouragingly, but recommends Delstanche's masseur for the mechanical treatment of adhesive processes.

The cut on page 114, illustrating Politzer's method is wrong, for it represents the current of air as being propelled in the direction of the frontal sinus, or nasal duct, instead of the orifice of the Eustachian tube, where it is intended to go. This is an important point. The cuts on pages 94 and101 give the correct position. There are some typographical and other errors that ought not to have escaped the attention of the proof reader, but they are comparable to blemishes on a great man's face; they do not dwarf his greatness.

Trephining in the Ancient and Modern Aspect. By John Fletcher Horne, M.D., D. Sc. (Hon.), F.R.S.Ed. Honorary Surgeon to the Barnsley Beckett Hospital, and late Assistant Resident Surgeon to Leeds General Infirmary. Cloth, 16mo., pp. 133. London: John Bale & Sons. 1894.

Dr. Horne has produced a very entertaining book, and one which seeks to give proper credit where it is due, from the beginning down to the present time. He points out that all the changes from former methods "may not be improvements in the best sense of the word; time and experience will surely separate that which is valuable from that which is useless. A careful weighing of the evidence at present obtainable may be advantageous. It is one of the functions of the literary worker to rescue valuable matter from oblivion and to render it more accessible." . . . "No apology is needed for the frequent references I have made to American surgery; I can not but admire the genius and assiduity of the surgeons of that country, nor can we grudge

them a large share of the honor for the great advances made in the department of brain surgery."

The book is essentially a historical review of ancient and modern practices, and with the exception of a few case reports of interest, there is little original matter. In summing up the literature the author compliments the editor of this Journal by quoting from his "Address on Surgery," delivered at the annual meeting at Detroit,[1] as follows:

"Dr. J. B. Hamilton has well expressed our conclusions: But however interesting from an historical point of view to revive these lessons of the past, we must remember that, as science is progressive, so the practice keeps equal step with that progress. In the past, practice was in advance of scientific knowledge. Tradition governed, instead of history and inductive reasoning. In the modern practice of the surgery of the brain and its envelopes we have, indeed, little to offer that is new in the practice—the slightest glance at medical history forbids that conclusion, but the reasons for our methods belong to us alone; and our century, although the heir of the accumulated wisdom of ages that are past, will have more to give to posterity in solid knowledge than any half dozen centuries that have preceded it, and particularly in the matter of diagnosis."

Dr. Horne did not give the date or place of publication of the foregoing remarks, but he paid an even more delicate compliment to the editor of this Journal, for we find that he adopted the abstract quotations as given in the address of Prof. Hamilton, as his own, even to the Shakesperian quotation with which the address closed. As the quotations themselves are good enough to bear repetition, we reproduce some of them as follows:

Prof. Hamilton's Address, June, 1892.	Dr. Horne's Book, 1894.
Salvianus mentions a lunatic who by accident had the skull broken and was "excellently cured," and another who "breaking his head with a fall from on high, was instantly recovered from his dotage." (Burton). Gordonius recommended "the head to be shaved and bored to let out fumes, which without doubt will do much good. I saw a melancholy man wounded in the head with a sword, his brain pan broken; so long as the wound was open he was well, but when his wound was healed his dotage returned again." Guianerius cured a nobleman in Savoy by boring alone, "leaving the hole open a month together, by means of which, after two years melancholy and madness, he was delivered." (Burton).	Salvianus mentions a lunatic who by accident had the skull broken and was "exceedingly cured," and another who "breaking his head with a fall from on high was instantly recovered from his dotage." (Burton). Gordonius recommended "the head to be shaved and bored to let out fumes, which without doubt will do much good. I saw a melancholy man wounded in the head with a sword, his brain pan broken; so long as the wound was open he was well, but when his wound was healed his dotage returned again." Guianerius cured a nobleman in Savoy by boring alone, "leaving the hole open a month together, by means of which, after two years melancholy and madness, he was delivered." (Burton).—Horne, page 26.
* * * *	* * * *
Celsus followed the Hippocratic method, which for four hundred and sixty years had been practiced almost without change; and we are thus able to see that the ancients anticipated us in these operations on the bony walls of the brain.	Celsus, A. D. 30, followed the Hippocratic method, which for four hundred and sixty years had been practiced almost without change.—Horne, page 26.
Dr. Andrew Smart reports that Prof. Chiene trephined for basal hemorrhage in a woman lying at the point of death, and saved his patient. There was an antecedent injury, and Prof. Chiene at first trephined at the right parietal eminence, but finding the result negative, again applied the trephine lower down, and forward. The exact position is unfortunately not stated. There was free hemorrhage from the membranes, but the breathing became normal, and after incising the dura there was evident relief to the cerebral pressure and tension.—(*Brain*, London and New York, 1891, pages 287, 288).	Another case recorded of trephining for basal hemorrhage and a most interesting case it is, by Prof. Chiene on a patient of Dr. Andrew Smart. The Professor gave us a résumé of the case at the Bournemouth meeting. I operated on a person comatose, etc., etc. In this case there was an antecedent injury, and Prof. Chiene at first trephined at the right parietal eminence, but finding the result negative, again applied the trephine lower down, and forward. The exact position is unfortunately not stated. There was free hemorrhage from the membranes, but the breathing became normal, and after incising the dura there was evident relief to the cerebral pressure and tension.—Horne, page 74.
Dr. Laplace of Philadelphia, by a brilliant operation, removed clots from the base of the brain, and the patient recovered. The patient was a boy of ten years who while at play had fallen on a broken fencing foil. The steel had penetrated the left orbit between the inferior orbital ridge and the eyeball. The child became unconscious, with deepening coma, right hemiplegia, left facial paralysis, complete aphonia, respirations 30, pulse 140, temperature 104.5 degrees. The wound was explored without result, and thirteen days later trephining was performed low in the temporal fossa. Laplace devised an instrument for the removal of the clots. I quote from his report: "To reach the center of the base of the brain for the removal of the suspected clot, a miniature egg beater, consisting of four loops of platinum wire, had been improvised. This was perfectly malleable, and could be insinuated between the dura mater and the skull without wounding the cerebral structure. Having reached the cavernous groove, the instrument could be pushed no farther. It was then turned on its axis for the purpose of catching coagula in its loops. This was effectually accomplished, and about a teaspoonful of clotted blood removed piecemeal. While dragging more out, considerable venous hemorrhage took place. The trephined opening was then immediately plugged with iodoform gauze, and the usual dressings were applied. The wound was entirely healed in three months, and in six months afterward the patient had equal use of both extremities." Dr. Laplace emphasizes "the safety of trephining near the base of the skull, the ease of arresting violent hemorrhage from the sinuses of the dura mater, and the importance of drainage in all cases of cerebral injury." (*Medical News*, Philadelphia, Dec. 5, 1891).	Dr. Laplace of Philadelphia, by a brilliant operation, removed clots from the base of the brain, and the patient recovered. The patient was a boy of ten years, who whilst at play fell on a broken fencing foil, which penetrated the left orbit between the inferior orbital ridge and the eyeball. This was followed by unconsciousness, with deepening coma, right hemiplegia, left facial paralysis, complete aphonia, respirations 30, pulse 140, temperature 104.5 degrees, The wound was explored without result, and thirteen days later trephining was performed low in the temporal fossa. To reach the center of the base of the brain for the removal of the suspected clot, a miniature egg beater, consisting of four loops of platinum wire, had been improvised. With this he was able to remove a teaspoonful of clotted blood. Whilst dragging more out, considerable venous hemorrhage took place. The trephined opening was plugged with iodoform gauze, and the usual dressings were applied. The wound was entirely healed in three months, and in six months the patient had equal use of both extremities. Dr. Laplace emphasizes the safety of trephining near the base of the skull, the ease of arresting violent hemorrhage from the sinuses of the dura mater, and the importance of drainage in all cases of cerebral injury.—Horne, page 74.
In regard to the treatment of epilepsy, Dr. Sachs in the *New York Medical Journal* for Feb. 20, 1892, says: "What can we expect from the surgical treatment of epilepsy?" Simple trepanation seems to be more successful in these epilepsies associated with infantile palsies than in the traumatic forms, probably because of the still greater frequency of cysts in these cases than in the traumatic forms. Forty-four per cent. of all cases of infantile paralysis develop epilepsy. Of all cases of epilepsy a very fair proportion were developed in connection with infantile palsies. As soon as epileptic symptoms appear, the paralysis has the value of a focal symptom. In children excision of a center is a less serious affair than in the adult, for in the former, other parts of the cortex are capable to a greater degree of assuming the functions of the destroyed part. Under favorable conditions the surgeon may be able to cure a few cases of epilepsy. He will be able to improve many.	Dr. Sachs, in answer to the implied question, "What can we expect from the surgical treatment of epilepsy?" says: "Simple trepanation seems to be more successful in these epilepsies associated with infantile palsies than in the traumatic forms, probably because of the still greater frequency of cysts in these cases than in the traumatic forms. Forty-four per cent. of all cases of infantile paralysis develop epilepsy. Of all cases of epilepsy a very fair proportion were developed in connection with infantile palsies. As soon as epileptic symptoms appear, the paralysis has the value of a focal symptom. In children excision of a center is a less serious affair than in the adult, for in the former, other parts of the cortex are capable to a greater degree of assuming the functions of the destroyed part. Under favorable conditions the surgeon may be able to cure a few cases of epilepsy. He will be able to improve many."—Horne, page 87.
It will be seen that while there has been a distinct gain in many branches of cerebral surgery there is yet very much to be perfected, but all this wonderful advance is directly due to the great discovery of Pasteur, and the practical genius of Lister. Antiseptic methods have alone made advance on the old lines possible. The Rip Van Winkle of the profession may well rub his eyes and quote the lines of "Macbeth": "The times have been; that When the brains were out, The man would die and There an end; but now they rise again."	These have been removed by the introduction of antiseptic surgery and the investigation of the relations of interual and external parts. Surgery now interposes where it formerly held aloof, and looking back on the marvelous results of recent years, the limit of its power seems to be still far off. And may we not now say in the words of the immortal bard in "Macbeth": "The times have been; that When the brains were out, The man would die and There an end; but now they rise again." —Horne, page 131.

[1] Journal American Medical Association, June 11, 1892.

Sydney Smith, in his review of Seybert's Annals of the United States, in 1820, said: "In the four quarters of the globe, who reads an American book?" We are of opinion that our esteemed friend, Dr. Horne, might answer this question with some emphasis.

NECROLOGY.

E. F. Latta, M.D., of Unadilla, Neb., January 29.

C. D. Smith, M.D., of Raleigh, N. C., February 5.

J. T. Doyle, M.D., of Wilkesbarre, Pa., February 9, aged 57.

Walter Noyes, M.D., of Butte City, Mont., died of pneumonia February 29.

J. C. Armentrout, M.D., Professor of Physiology in the Keokuk Medical School, February 7.

B. F. Spann, M.D., died February 2 suddenly of heart disease, at Anderson, Ind., aged 65 years. He was a prominent physician, and had held many State offices, and was at the time of his death one of the Trustees of the Indiana State Normal School. During the war he was appointed by Governor Morton to look after the sick and wounded Indiana soldiers in the hospitals at Nashville.

Deaths of Eminent Foreign Medical Men.—Dr. Krahmer, Professor of Pharmacology in the University of Halle. Dr. Mergit, formerly Professor of Medical Physics in the Bordeaux School of Medicine. Dr. Lellman, Professor of Chemistry in Giessen, from influenza, while in the prime of life. He was a pupil of Lothar Meyer, and was first Privat-Docent and afterwards Extraordinary, in Tubingen, which he only left in 1892 on his appointment to Giessen. His paper on the "Principles of Organic Synthesis," which was published in 1887, is well known amongst chemists.

James W. Pittinos, M.D., who died in Philadelphia on February 2, was one of the last representatives of a family identified with that city almost since its foundation. He was a graduate of the Philadelphia Medical College, and lectured on chemistry and materia medica. In the early days of the war he became connected with the Army Medical Corps, and spent four years in hard service, making quite a reputation as a surgeon. The Army Medical Museum at Washington gives evidence of the character of his service. In 1864 he had charge of the hospital at Camp Parole. He there contracted chronic bronchitis, which was ultimately the cause of his death. The past few years he has been out of practice entirely.

J. F. Hartigan, M. D., U. S. Consul at Trieste, Austria, formerly a resident of that city, died recently in Trieste. Dr. Hartigan was for many years Coroner's Physician for the District of Columbia, and was a member of the Grand Army of the Republic. He had yellow fever while a prisoner of war at Newbern, N. C., in 1864, and in 1888 was sent by Surgeon General Hamilton as an Inspector of the Marine Hospital Service to Florida towns to investigate their condition. In the performance of this duty, his health at no time robust gave way, and he was appointed Consul at Trieste, partly in the hope that the warm climate of that place would be beneficial to him. He had never given up the idea of returning to Washington and engaging in practice, and was on intimate terms with many members of the medical profession in Trieste. He had been for many years a member of the AMERICAN MEDICAL ASSOCIATION.

Robert Bentley, M.R.C.S., Eng., F.L.S., died on the 24th ult., at his residence in London, from pneumonia. After he became qualified he devoted himself to the study of botany and materia medica. In 1863 he was chosen Dean of the Faculty of Medicine at King's College, and continued in that position for twenty years. Botany was his favorite study, and he contributed many papers on this subject. He was intimately associated with the Pharmaceutical Society as Professor of Botany and Materia Medica, as a Fellow of the Linnean Society and a member of the Council, and as Vice-President of the Royal Botanic Society, before which for many years he delivered an annual course of lectures. Mr. Bentley's most important contributions to botanical science are his "Manual of Botany" and the "Medicinal Plants," published in collaboration with Dr. Trimeu. The former was first published in 1861, and it is distinguished from all other botanical text-books by the extent and value of its information on the economic products derived from the various natural orders, especially those connected with pharmacy. The "Medicinal Plants" was printed in four large octavo volumes, with colored plates, and will always be regarded an invaluable work of reference.

ASSOCIATION NEWS.

The Journal of the American Medical Association points out that it leads all the weeklies in the number of papers published, etc. The *Medical News* quotes the same figures to show that it is next, while the *Medical Record* thinks quality is better than quantity.—*American Lancet.*

Who Constitute the Membership of the American Medical Association?—It is widely claimed that the AMERICAN MEDICAL ASSOCIATION represents directly or indirectly every county in the United States, and that every grade of the profession is actually present at the annual meetings. We understand that its actual membership is just now over four thousand—we have not the exact figures at hand.

In a late issue of the *Railway Age*, our friend, Dr. R. Harvey Reed makes the statement that if there be abstracted from the profession the railway surgeons, the Army, Navy, and Marine Hospital surgeons, the insurance and pension examiners, the hospital staffs and "like distinguished personages," so few will remain that "it will require a military band to muster them close enough together to be seen with a fifth-objective microscope." According to this, the membership of the ASSOCIATION and the entire profession is practically composed of those holding distinguished offices of honor and profit.

We are told by Polk's Medical Directory of the United States that there are over a hundred thousand doctors in the United States, and we are rather staggered to be informed that aside from those holding official positions of honor or emolument, there are not enough doctors to occupy the field of a fifth-objective microscope. Our good friend informs us that the Code Committee of the ASSOCIATION is wrestling to determine whether the railway surgeon is entitled to honorable membership in that body. The source of his information he does not reveal, and we have no other knowledge concerning it. His point is that if the Committee finds the railway surgeons and their allies unworthy of membership, there will be no material left to form an ASSOCIATION. From the facts at hand it would seem as if there were many tens of thousands of doctors at present neither members of the bodies he mentions or of the ASSOCIATION. Certainly there would remain abundant material for a magnificent organization if every person in the profession holding an official position of any sort were transported to another land.

It is expected that the Committee referred to will report such a study of existing conditions surrounding the medical profession as will make it practicable for all honorable, educated physicians to work in greater harmony for the attainment of the best interests of the entire nation.—*American Lancet.*

Obstacles to Medical Ethics.—The Code of Medical Ethics is founded upon a so much higher principle than anything that has been offered by those physicians who are constantly making some attempt to induce the profession to disown it, that a fair-minded person can only conclude that they are endeavoring to lower it to a plane with themselves for the sake of personal aggrandizement. No one, not even the most extreme anti-Code man, can deny with an honest eye, that what disrespect is shown to the Code by the press and laity is due to the fact that its teachings are violated by the members of the profession themselves. The work is acknowledged to be a classic but, like all other just documents, it interferes with the practices of that class which cares little for the profession, except as an instrument to increase their own gains. While they have assailed openly the clause which relates to consultation, that is not the only one which they disregard at every opportunity. They attack the Code at what they consider its most vulnerable point, but if they

once broke through, sad havoc would be played with the grand old work. Unfortunately, a few monkeys have broken into the higher ranks of our profession and, emboldened by their temporary success, are endeavoring to teach us some antics. Knowing that our facial contour is not adaptable to the usual grimaces, they have begun with the somersault act. Some have taken to the trick quite naturally and have even commenced the facial distortion. But there is a majority in the medical profession that this doesn't suit, and they will never condescend nor submit to any such knavery.

We have always favored and labored for a united medical profession, but we now see that the warfare carried on by the anti-Code men is in an underhanded manner, they losing no opportunity to stab the upright members of the profession in the back and in dark places. Beaten on every occasion, they realize that they *can not* conform to fair and square laws and, with the determination born of despair, seek to do by stealth and secrecy what they see they can accomplish in no other way.

Knowing of this guerilla warfare, the members in good standing in the profession should meet it with military sternness. There are members of our profession in high standing who see that the Code is being violated, and feel that they are being injured by conforming to its teachings strictly, while giving the outlaws every advantage. They may say, as we have heard them, that in this way the Code works harm to the upright. We understand their feelings, but say that it is not the Code that does it but the men who violate that instrument. Here we have only to deal with those who are violating and endeavoring in every way to break down medical ethics, and suggest this manner. The homeopath is known by his sign, and for that reason is not in a position to do so much harm as the traitor. Then, as soon as these men become known, which must be sooner or later, brand them and place them with the goats. If they will not be governed by the laws of the profession, let them form into a body of their own and make laws to suit their own necessities. But in our dealings thereafter with them we should refuse to use the courtesy we do to our professional brethren, prescribed by the Code. Then they will have no advantage. It would soon be seen who had the best of the fight, and they would quickly cry for quarter or settle on a lower plane. The trouble with medical ethics has been not that the Code was wrong, but that its supporters have allowed themselves to be placed on the defensive, instead of carrying the war into the enemy's territory.

We have felt that their puny efforts would only hasten their own destruction, as like

> "The feeble sea-birds, blinded in the storms,
> On some tall lighthouse dash their little forms,
> And the rude granite scatters for its pains
> Those small deposits that were meant for brains.
> Yet the proud fabric in the morning sun
> Shines all unconscious of the mischief done;
> Still the red beacon pours its evening rays
> For the lost pilot with as full a blaze,
> Nay, shines all radiant o'er the scattered fleet
> Of gulls and boobies brainless at its feet."

But the matter is one of more seriousness. Corporations, in their crack at the balance of creation, have aimed a blow at the medical profession and seek on every occasion to batter down the breastworks furnished by the Code. Of course the means at their command have found those willing to serve their interests even at the sacrifice of professional courtesy to their brother practitioners, though the corporation physician expects on other occasions to have this courtesy extended to him. We are glad to say that there are some corporation physicians and surgeons who refuse to be dictated to by these officials, but we regret that the number is becoming gradually less. Where they do lose sight of professional courtesy to others they too should be branded and treated on all occasions with the same kind of medicine. We are strictly for the profession in this matter, and, if necessary, are willing to take up the cudgel and show who are derelict.

This is a question that has arisen since the Code was adopted, and needs some discussion and likely some alteration. A great part of the gall manifested by those who are fighting against medical ethics is instigated and shown in response to the patting on the back by these moneyed powers.

We will not deny that as new customs arise there may be occasion for changing, slightly, the Code, but this *must not be done* by its enemies. The name "anti-code men" may express their views, but medical anarchists is a more appropriate name, and the profession is not yet ready to accept anarchy.—*Medical Progress*, February.

SOCIETY NEWS.

Association of American Medical Colleges.

Meeting held at the Grand Pacific Hotel, Chicago, Wednesday Afternoon, Feb. 7, 1894.

[Reported exclusively for the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.]

Abstract of proceedings of the meeting of the Committee of the Association of American Medical Colleges, appointed to consider the practicability of adopting a four years course of medical study.

There were present, the following: Dr. Perry H. Millard of St. Paul, representing the University of Minnesota; Dr. E. L. Holmes of Chicago, Rush Medical College; Dr. Victor C. Vaughan of Ann Arbor, the University of Michigan; also Hon. Hermann Kiefer of Detroit, member of the Board of Regents; Dr. N. S. Davis, Jr. represented the Chicago Medical College; Dr. H. O. Walker of Detroit, Detroit Medical College; Dr. A. R. Baker, Medical Department University of Wooster, Cleveland, Ohio; Dr. John C. Shrader, University of Iowa; Dr. Flynn, Medical College of Indiana; Dr. Hall, College of Physicians and Surgeons, Minnesota; Dr. Marie J. Mergler, Woman's Medical College, Chicago; Dr. Wm. E. Quine of Chicago, College of Physicians and Surgeons; Dr. C. B. Stemen, Fort Wayne College of Medicine; Dr. P. S. Connor, Dandridge Miami Medical College, Cincinnati; Dr. Dudley S. Reynolds, Central University of Kentucky; Dr. Bayard Holmes of Chicago, and others.

The meeting was called to order by the Secretary of the Association, Dr. PERRY H. MILLARD of St. Paul, who said: A word in regard to the object of this meeting. As Secretary of this body, I received a communication on Dec. 10, 1893, from the Registrar of Rush Medical College, stating that at a Faculty meeting held Dec. 7, 1893, the Faculty by unanimous vote passed a resolution to the effect, that all students who begin their studies in 1895 with a view of graduating in 1899 will be required to attend four full courses of lectures in a medical college of not less than six months each. Providing that graduates of universities and colleges which give a suitable scientific course may be admitted to the second year in the medical college, and also that graduates from schools of pharmacy that require three years of study and an adequate preliminary education, and graduates of dental schools requiring two years of study and adequate preliminary education, will be admitted to the second year in the college.

The above resolution is an amendment to Section 5, Article 3, of the Constitution of the Association of American Medical Colleges. The present wording of Section 5, Article 3, of the Constitution, is as follows:

"Candidates for the degree of Doctor of Medicine shall have attended three courses of graded instruction of not less than six months each, in three separate years."

It will be observed that the adoption of the proposed amendment will require of all matriculates of 1895, an attendance upon four full courses of instruction before receiving the degree of M.D. As the result of this most important action by the Faculty of Rush Medical College, after consultation with the officers of the Association, it was deemed prudent to call together representatives of the College Association in conference, to decide whether we shall, at this time, with the submission of this amendment which is proposed by Rush Medical College, submit, at the meeting to be held in San Francisco, a minimum of curriculum suitable to a four years' course. It is recognized that our Constitution at present is defective. We really have no minimum requirements adapted to a three years' course. I find, likewise, as the result of a series of investigations conducted in the last year, that we have colleges, members of this Association, that are not living up even to our present requirements. I will say, however, that this is confined to very few schools, and schools that have not been heartily in sympathy with this Association since its organization. It was thought best not to call a special meeting of the College Association, because it would not be proper to take definite action upon our Constitution and By-Laws except at a regular meeting. What is done here to-day will be submitted in legal and proper form to the meeting to be held in San Francisco on June 6, of this year; and in appointing an informal committee and inviting you to meet with us to-day in conference, the chairmanship of this committee has been assigned to Dr. E. L. Holmes, who has taken an active part in this measure, and is a representative

of the school that has taken the initiative in the proposed amendment.

Da. Holmes then took the chair. He said: I do not know that it is necessary for me to make any remarks introductory to the proceedings of this conference. The purposes have been set forth clearly by the Secretary, as well as by the published announcement in our various medical journals, and I presume the sooner we introduce and adopt a resolution bearing upon this subject, the more quickly will we finish our work. I would like to say, however, that while I am heartily in favor of the four years' course, and while I am in favor of the proposed minimum curriculum, we have found in our own college, in former times, that the plan of instruction for a four years' course is going to take one or two years for us to perfect. We can formulate certain definite ideas and live up to them, I think, but, at the same time, we are confronted with certain difficulties in arranging the courses of instruction properly for each year, so as not to bring confusion and to interfere with each other; so that the studies shall be carried on in such a way that at the end of the fourth year, students will not have forgotten what they have learned during the first year. That will necessitate a review of the studies, and we are planning courses of recitation by which every student as he passes through from year to year will have a review of what goes before. For instance, when a student has seen a certain number of cases of typhoid fever in the college clinics or hospital, as he studies them he will recite from the text-book, so that the text-book is not going to be a dry recitation for a person who knows nothing of the subject, but it will be needful for a student who is advanced, who has seen a sufficient number of cases to understand the general principles that he reviews in his recitation. He will be required to recite upon the anatomy of the parts involved, physiology, and materia medica, so that in this way we hope to devise a plan by which there will be a constant review of every organ, its anatomy, physiology and the remedies that are used in the treatment. Bnt we find certain difficulties in planning such a curriculum.

Then there is another point in regard to the minimum study required for the examination. I do not know as that comes in at all in this meeting, but we have found some difficulty in formulating a plan which every college can easily live up to. I will take no more of your time, but whatever you have to offer we will discuss.

Dr. N. S. Davis, Jr.—In the notices sent out, I believe there were a series of topics to be discussed, and I think it would be well to take them up, one by one, so as to cover the whole ground systematically.

Dr. Millard—In response to the circular-letter, sent out by myself, I have received information or advice from twenty-eight colleges in regard to their wishes or desires for the four years' course, and I can state definitely that twenty of these colleges are in favor of the adoption of the four years' course at this time, or at the San Francisco meeting, to be held in June next; that two colleges are endowed, and four or five colleges are opposed to it at this time, deeming it impracticable so shortly after adopting the three years' course, one college making the proposition that they will support it if we make it apply to 1896 instead of 1895.

In talking with Dr. N. S. Davis, Sr., the Chairman of the Association, it would seem that the program required by the Constitution would be about as follows: The proposed amendment already submitted to be official by Rush Medical College, would come before the Association for definite action in San Francisco in June. Now, the object of this conference to-day is to formulate a minimum of requirements, a course of study adapted to a four years' course, which would come before the Association as a separate amendment from the one submitted by Rush Medical College. At this conference, it is my opinion there are certain matters of great importance to the Association that should be acted upon. For instance, our By-Laws need immediate attention, and we should informally select a committee to re-arrange our By-Laws and submit them to the San Francisco meeting for adoption. The By-Laws governing the Judicial Council have not yet been acted upon definitely. The committee to be appointed at this conference can go over our present By-Laws and make such changes as may seem necessary to be submitted at the June meeting.

Dr. Vaughan—I desire to make a few general remarks before we get at the discussion proposed in the circular. It seems to me that we have reached a point in medical education in the United States, when those who have been engaged in it for a long while ought to be able to say what subjects should be embraced in the course of medical study. I find the greatest diversity in the various medical colleges regarding subjects that are taught, and others not taught. I do not see any need of having a four years' course unless we teach certain things. What shall we teach? What subjects must be taught in our schools by members of this Association? How shall those subjects be taught, and how much minimum time shall be given to them? Shall we teach bacteriology? Let us decide the question. If so, how shall we teach it? How long shall we teach it? In this way, it seems to me, we can get at something definite. We ought to know just what is necessary in order to fit a man for the practice of medicine. We have been teaching (some of us) a good many years, and we ought to be able to decide that question. I think it is the most important thing that can come before us. I hope to see the time when the best medical colleges in America will have practically the same curriculum, and that a student can take one semester in one college and get credit for that semester in going to another college, and take another semester if he wants to, and so on, and that he will not be compelled to spend three or four years at a given medical college. It seems to me that most of the curricula of medical colleges are now gotten up for the express purpose of compelling a student to stay there for the whole of his three or four years. I look upon this as being a little too narrow and beneath the dignity of the teachers of medicine in this country. In order to do that, we must agree upon what subjects must be taught and agree upon the minimum of teaching of those subjects, and how this minimum shall be taught. It seems to me the best method of getting to work this afternoon would be to decide what subjects shall be taught? I do not know, but I think that is the best way of getting at it. Then we can take up *how* long the subjects shall be taught, and *how* they shall be taught. As it now stands, we can not accept the year's work that a student has done in the University of Pennsylvania, for instance, because the work he has done there during his first year is entirely different from the first year's work he may do in some other college; as, for example, the medical department of the University of Michigan. During his four years, however, he may do just as good work as the students in our institution. There is no general plan upon which these curricula are laid out, and my idea is that this would be the best way of getting at it. The University of Pennsylvania begin teaching therapeutics the first year. We do not do that, and if a student, who has studied therapeutics the first year in the University of Pennsylvania, comes to the University of Michigan, we can not accept him because we do not consider him fit to study therapeutics, as he knows nothing about anatomy and physiology, and we think it is radically wrong. The teachers of the various medical colleges ought to be able to decide this point, which I think is of more importance than trying to compel all the colleges to have a four years' course. We should decide what subjects shall be taught and, if possible, when and how they shall be taught.

Dr. Reynolds—I regret very much that Dr. Vaughan has not submitted a curriculum embodying the ideas he has expressed. We have nothing to act upon. His remarks have been very clearly and wisely expressed, and I desire to indorse every word of them. It would have been better, however, if he had submitted them in writing so as to give us something to act upon.

Dr. Vaughan—The schedule of studies we have we think the best, but we are perfectly willing to be governed by the majority. There may be some changes made in the schedule. We teach during the first year in lectures and recitations in the first semester, osteology and descriptive anatomy, general chemistry and bacteriology; in the second semester, descriptive anatomy, physics, organic chemistry and histology; laboratory work the first year includes anatomy, chemistry and bacteriology. There might be some discussion as to whether these are the proper things to teach during the first year, and I am not altogether satisfied.

Dr. Reynolds—That is about what we teach, but we do not teach physics.

Dr. Vaughan—We accept the diplomas of students from reliable high schools. The physics taught in the majority of high schools is a failure. A student knows very little about the laws of refraction, of heat, light, magnetism, etc. We find that many of our students must have this instruction before they can study ophthalmology properly, and we give such instruction during the second semester of the first year. We do not compel all our students to take that course. Those who have had the proper course in the high schools, colleges and universities, are excluded from it. We find it impossible to teach ophthalmology successfully to the great

mass of students, who come to us, and more particularly to give them instruction in physics. I shall be glad to have the committee take up one of these subjects and discuss whether they should be taught, and in what way they should be taught. We may have some things that should not be taught at all, and others that should be taught at some other time and in some other way.

THE CHAIRMAN—If the gentlemen will excuse me for making some further remarks, I will say that what Dr. Vaughan has said, coincides with my own ideas. We find it difficult to arrange a curriculum of studies for different years. I think the same fault applies to the average high school in the West. When a boy leaves the high school, then works to get money to pay his tuition in a medical college he has forgotten what he has learned in physics, so that he can not state definitely the leading principles of a double convex lens on a ray of light: and so with hydrostatics, electricity, etc. I think it would be useful for us if we could formulate a plan of study and instruction by taking the four years' course that Ann Arbor has tried, and make such modifications as might be beneficial.

DR. MILLARD—To get the work in tangible form, I move that the entrance requirements, as now provided by the College Association, remain in force. These should come before us. Let us consider if we can make any change in the requirements. The subject of uniform entrance requirements is attracting considerable attention. I have received three communications from different Deans, and I have requested Dr. Quine, who is President of the Board of Health of this State, to give the matter some consideration and to submit something to-day. Seconded.

DR. WALKER—Will you please state the entrance requirements?

The Secretary then read from Article 3 of the Constitution of the Association of American Medical Colleges, the following:

SECTION 1.—Members of this Association shall require of all matriculates an English composition, in the handwriting of the applicant, of not less two hundred words; an examination by a Committee of the Faculty, or other lawfully constituted Board of Examiners, in higher aritbmetic, algebra, elementary physics and Latin prose.

SEC. 2.—Graduates or matriculates of reputable colleges or high schools of the first grade, or normal schools established by State authorities or those who may have successfully passed the entrance examination provided by the statutes of the State of New York, may be exempt from the requirements enumerated in Section 1.

SEC. 3.—Students conditioned in the branches enumerated as requirements for matriculation, shall have time until the beginning of the second year to make up such deficiencies provided, however, that students who fail in any of the required branches in this second examination shall not be admitted to a second course.

DR. CONNOR—What is really meant by these requirements? Let us take, for instance, the subject of Latin. We require a certain amount of knowledge of Latin. There ought to be some indication as to what that amount really is. There is an enormous difference in this matter. There should be some definite statement as to what amount of knowledge is required, or how far the individual must have gone in his Latin study. So in regard to mathematics and algebra. The requirements, as I have understood them as read by the Secretary, are very indistinct, and they practically cover nothing. The trouble has been all the time since this question of requirements was first raised, that there has been no definite statement as to what is demanded. It is all well enough to say that a man must have a knowledge of this thing and that thing, but it is not an easy matter to say *how* much of the ground he shall cover. This not only relates to one, but to all of the subjects of preliminary examination. There are seventy-one colleges connected with this Association, and there are seventy-one different opinions as to what these requirements mean. There are colleges that have not lived up to the agreement, that are wilfully and persistently violating the requirements, and yet some of the members of those colleges belong to the Association and are going to vote for an increased curriculum. I know the increased requirements will not be lived up to, just as the requirements already demanded have not been lived up to. Let us adopt something definite.

DR. REYNOLDS—I am delighted to hear my neighbor, Dr. Connor, speak so plainly. Those of you who were present at Washington when the matter was discussed will doubtless remember how anxiously I tried to prevent the introduction of the Latin language, and the subjects which we have met to discuss this afternoon are of vital importance to the Association of American Medical Colleges. We are here to consider the practicability of extending the requirements to a four years' course of graded instruction. The preliminary requirements I regard as of secondary importance, for, as Dr. Connor has said, there will be great diversity of opinion in regard to them. I live in an atmosphere that enables me to breathe more freely and fully the varied sentiments of the profession on this subject than some of you gentlemen do, and I know that if the Association of American Medical Colleges at its forthcoming session should determine to require four courses of graded instruction instead of three, the so-called Southern Medical College Association will take a new life; it will acquire new membership from neighboring territory, and although its members are pledged to the adoption of the three years' course, they are not pledged to the adoption of the graded system. With about fifteen hundred medical students in Louisville, seven or eight hundred in Nashville, and something like that number in Atlanta and the Tulane University of New Orleans, which is one of the most magnificently equipped medical colleges in the world, not complying with our present exactions as yet, it seems to me very unwise to do anything which would tend to reduce our membership.

DR. SHRADER—In regard to the indefiniteness of some of the requirements which have been read by the Secretary, the Constitution says that students may be "conditioned in one or more of the branches enumerated as requirements for matriculation." Does that mean they will be conditioned in all of them?

DR. REYNOLDS—My understanding is that it means any one of them.

DR. SHRADER—I wish to say a word or two in regard to the extension of time. The medical department of the State University of Iowa has instructed me through its Faculty to report here that we are fully in accord with the advances that are being made, but we prefer to have this change made, that where colleges desire it, they may put in twenty-four months of study in three years, of eight months each, instead of extending the time to four years of six months each. Our collegiate year extends to about eight and one-half months, commencing the first of October and lasting until the middle of June. This is the sense of the Faculty, and I was so instructed to report at this meeting. We prefer to do this.

Medical students in the West have not any too much money to undergo four years of instruction, and it would cost them much less money to continue for two or three months longer the courses of lectures. They would save their traveling and other expenses. We can arrange our curriculum accordingly. Our Faculty is not quite ready to vote for a four years' course at this time, but it may be at the San Francisco meeting.

In regard to the preliminary requirements, we have found the same difficulty that has been pointed out by the preceding speakers. We appointed a committee of three on preliminary requirements, and no two of this number could agree as to how much Latin was required. Some time ago, in order to avoid diversity of opinion in this regard, we appointed an instructor in Latin, and a large number of our students took the Latin course, and it proved a very enthusiastic one. We believe that it has cleared up the matter of requirements of Latin, and we are in favor of retaining the instructor.

DR. WALKER—I belong to an institution whose faculty are in favor of adopting a four years' course, if other institutions are willing to do so. To extend the time to four years of six months each seems to me to be a waste of time. Send a student to a medical college for six months in a year, then let him leave, and in the majority of instances he forgets largely what he has already learned. If he takes such a course as is adopted by the University of Michigan—four years of nine months each—there is no such likelihood of his forgetting what he has previously learned. But the question arises, whether the medical colleges of this country are in a position to accept the proposed change. There are colleges connected with this Association, whose representatives come here and accept everything and even more, and go home and do nothing. That is the situation we are in. There is nothing compulsory about it. If we belong to this Association and adopt a four years' course of six or nine months each, as the case may be, and other institutions do the same, let us live up to it. The institution with which I am connected is progressive and is willing to do anything that this Association does, but we do not want to do anything that is suicidal. I am authorized to say that our col-

lege will do just what other institutions will do. Regarding the preliminary requirements, we have specified in our catalogue the amount of Latin we require; the same with botany, zoology, etc.

Dr. Quine—Mr. Chairman, I have not up to this time been able to discover what question, if any, is before the Association for consideration. Although the remarks that have been made have been highly interesting and instructive, it has seemed to me that they have been somewhat aimless. I agree fully with the sentiments expressed by the Secretary of this meeting, to the effect that the most important failing of all in respect to a medical education is to start right, and it seems to me important that this Association should settle the question of entrance requirements before it proceeds to the consideration of a minimum schedule of educational requirements. I am opposed to the entrance examination. I know it to be a sham; I know it to be an imposition upon the credulity of those who repose any faith in it. I believe that every medical teacher of experience can cite numerous instances wherein applicants for admission to one institution have been denied and have immediately thereafter gone to a neighboring institution and have triumphantly passed the entrance examination. I am in favor of abolishing the entrance examination; of taking it out of the hands of medical colleges altogether. I am in favor of requiring of every applicant for admission to a college that he present credentials equivalent in grade to a second grade teacher's certificate. If he have not such credentials at the time he presents himself to a medical college, let him go to the Superintendent of Schools and get such credentials. I may say in reference to this phase of the question that the Illinois State Board of Health has already adopted a requirement to this effect; that it has refused to recognize any entrance examinations conducted by any representative of any medical faculty; and it stipulates that every medical student who has a diploma or certificate from a recognized institution of learning shall present himself to some county superintendent of schools and sustain before that functionary a legalized examination to obtain a second grade teacher's certificate. If we have honest requirements, the adjustment of other medical questions will be in my opinion comparatively easy.

The Chairman—The motion is, Shall the requirements, as laid down in the Constitution, be confirmed?

Dr. Vaughan—I desire to offer a substitute, that we take up the requirements *seriatim* to see whether any changes are to be made or not. Seconded.

The Secretary accepted the substitute.

Dr. Vaughan—I should dislike to see Dr. Quine's idea carried out. I know many medical colleges in this country that have not been influenced in conducting their preliminary examinations. Those colleges which are influenced in conducting such examinations are the sufferers themselves. There is nothing that can kill a medical college quicker than by accepting students who are unfit. Such colleges may thrive for a time, but in the long run they will suffer. While there are members of this Association that are not, perhaps, living up to the present requirements, so far as admission is concerned, they are the great sufferers themselves.

After further discussion on the requirements for admission, participated in by Drs. Reynolds, Connor, Stemen, Davis, Walker, Baker, Mergler, Bayard Holmes, Flynn and the Secretary, the Committee discussed Sections 1, 2 and 3, as laid down in the Constitution, and agreed upon the following pre-requisites to admission to the seventy-one colleges forming the Association:

1. English composition in own handwriting of not less than two hundred words, said composition to include spelling, punctuation, paragraphing and construction.

2. Examination in arithmetic, algebra through quadratics, and elementary physics.

3. Latin to the extent of one year's study, as indicated by Harkness' Latin reader.

4. Graduates or matriculates of reputable colleges and high schools of the first grade, or normal schools established by State authority, or who have successfully passed the examination provided by the State of New York, may be exempt from the requirements named.

5. Students deficient in one or more branches named as requirements shall have until the beginning of the second year to make up such deficiency, provided, however, that students who fail in any two of the requirements in this second examination shall not be admitted to the second course.

Dr. Quine offered the following resolution:

Resolved, That the management of entrance examinations and the determination of the value of the entrance credentials be intrusted to a committee of this Association, consisting of five members appointed by the Chair, which committee shall have the authority to arrange for entrance examinations in every city in which a medical college connected with this Association is located.

Seconded.

The above resolution, after being thoroughly discussed by Drs. Stemen, Connor, Vaughan, Bayard Holmes, Reynolds, Baker, the Secretary, Flynn and others, was lost.

Dr. Vaughan then offered the following:

Resolved, That this committee recommend to the Association of American Medical Colleges at its next meeting in June, to be held in San Francisco, that no medical college shall be permitted to remain or become a member of the Association that does not provide, either for a three years' course of eight months study, or a four years' course of not less than six months each, to take effect in 1895.

Seconded by Dr. Walker and carried.

The Secretary moved that a committee of five be appointed to prepare a curriculum of studies, providing for the minimum of time and lectures to be devoted to each one, and that the committee report at the San Francisco meeting.

Seconded and carried.

The Chairman appointed on this committee Drs. Davis, Connor, Quine, Stemen and Vaughan.

There being no further business before the committee, the meeting adjourned.

Congress of American Physicians and Surgeons.—Preliminary program of the Congress of American Physicians and Surgeons, to be held in Washington, D. C., May 29, 30, 31, and June 1, 1894.

President.—Alfred L. Loomis, M.D., New York City.

Vice-Presidents, ex-officio.—Dr. George C. Harlan, President of the American Ophthalmological Society, Philadelphia, Pa.; Dr. Gorham Bacon, President of the American Otological Society, New York City; Dr. B. Sachs, President of the American Neurological Association, New York City; Dr. William T. Lusk, President of the American Gynecological Society, New York City; Dr. Robert B. Morison, President of the American Dermatological Association, Baltimore, Md.; Dr. D. Bryson Delavan, President of the American Laryngological Association, New York City; Dr. Andrew H. Smith, President of the American Climatological Association, New York City; Dr. Reginald H. Fitz, President of the Association of American Physicians, Boston, Mass.; Dr. George Chismore, President of the American Association of Genito-Urinary Surgeons, San Francisco, Cal.; Dr. A. M. Phelps, President of the American Orthopedic Association, New York City; Dr. Henry P. Bowditch, President of the American Physiological Society, Boston, Mass.; Dr. Harrison Allen, President of the Association of American Anatomists, Philadelphia, Pa.; Dr. J. Ewing Mears, President of the American Surgical Association, Philadelphia, Pa.

Chairman of the Executive Committee, Landon Carter Gray, M.D., New York City; Treasurer, John S. Billings, M.D., Washington, D. C.; Secretary, William H. Carmalt, M.D., New Haven, Conn.

PROGRAM.

The meetings of the Congress will all be held in Metzerott's Music Hall, corner of Twelfth and F Streets, N. W.

Tuesday—May 29.

3 P.M.—Congress opened by the Chairman of the Executive Committee.

3:30 to 5 P.M.—General Session of the Congress under the direction of the Association of American Anatomists.

Wednesday—May 30.

3 to 3:30 P.M.—General Session of the Congress under the direction of the American Climatological Association.

3:30 to 5 P.M.—General Session of the Congress under the direction of the American Dermatological Association.

7 P.M.—Dinner to the Guests of the Congress at the Arlington Hotel.

Thursday—May 31.

2 to 3:30 P.M.—General Session of the Congress under the direction of the American Association of Genito-Urinary Surgeons.

3:30 to 5 P.M.—General Session of the Congress under the direction of the American Gynecological Society.

7:30 P.M.—Address by the President of the Congress, Dr. Alfred L. Loomis, Professor of Pathology and the Practice of Medicine in the University of the City of New York, on The Influence of Animal Experimentation on Medical Science. To be followed by a Reception.

FRIDAY—JUNE 1.

1:30 P.M.—Business Meeting of the Congress.

2 to 3:30 P.M.—General Session of the Congress under the direction of the American Laryngological Association.

3:30 to 5 P.M.—General Session of the Congress under the direction of the American Neurological Association.

SUBJECTS FOR DISCUSSION.

By the Association of American Anatomists: "Morphology as a Factor in the Study of Disease." Opened with a paper by Dr. Harrison Allen of Philadelphia, and discussed by Dr. Thomas Dwight of Boston, Dr. Frederic H. Gerrish of Portland, Me., Dr. Frank Baker, Georgetown, and Dr. Burt C. Wilder of Ithaca, N. Y.

By the American Climatological Association: "Sewer Gas." The Bacteriology, by Dr. Alexander C. Abbott of Philadelphia. As a Cause of Disease, by Dr. Abraham Jacobi of New York City.

By the American Dermatological Association: "The Distribution and Control of Leprosy in the United States." The Distribution, opened with a paper by Dr. J. Nevins Hyde, Chicago, and discussed by Dr. Wm. A. Hardaway, St. Louis, and Dr. James E. Graham, Toronto, Canada. The Prophylaxis and Treatment, with a paper by Dr. James C. White, Boston, and discussed by Dr. Geo. H. Fox, New York City; Surgeon-General W. C. Wyman, U. S. M. H. Service, and Surgeon-General Joseph D. Bryant, New York City.

By the American Association of Genito-Urinary Surgeons: "Nephritis in its Surgical Aspects." Opened with a paper by Dr. Edward L. Keyes, New York City, followed by a paper from Dr. George M. Sternberg on "The Bacteriology of Nephritis," and discussed by Dr. Geo. Chismore, San Francisco, Cal.; Dr. L. Bolton Bangs, New York City; Dr. Francis S. Watson, Boston, Mass., and Dr. W. N. Wishard, Indianapolis, Ind.

By the American Gynecological Society: "The Conservative Surgery of the Female Pelvic Organs." Papers will be read by Dr. Wm. M. Polk, New York City, and Dr. Wm. Goodell, Philadelphia Pa.

By the American Laryngological Association: "The Surgery of the Accessory Sinuses of the Nose." To be discussed by Dr. F. H. Bosworth, New York, Dr. J. N. Mackenzie, Baltimore, Md., Dr. J. H. Bryan, Washington, D. C., Dr. J. G. Roe, Rochester, N. Y., and others.

By the American Neurological Association: "The Influence of Infectious Processes on the Nervous System." Pathology and Etiology, by Dr. James J. Putnam, Boston. The Relation to General Nervous Diseases, by Dr. E. C. Seguin, New York. The Relation to Mental Disease, by Dr. Charles K. Mills, Philadelphia; and The Therapeutics, by Dr. F. X. Dercum, Philadelphia.

New York State Medical Society.—The eighty-eighth session of the New York State Medical Society was held in Albany February 6, Dr. Herman Bendell of Albany, presiding.

Dr. Bendell asserted that the number of physicians in the State is increasing, while the number of quacks and those without education is decreasing.

He alluded to the change in apportionment and claimed all parts of the State should be fully represented. During the year there were 327 examinations of medical students; of these 267 were admitted. The State Medical Library should be enlarged. The principal part at present is the 5,000 presented by the Albany Medical College. The law of 1861 should be amended by making an appropriation of a sufficient amount to care for it. The President recommended the holding of every third meeting elsewhere than in Albany.

He named the prominent members of the Society who had died during the year: Dr. Hewitt, Dr. Johnson, Dr. Green, Dr. Douglass, Dr. White, Dr. Fordyce, Dr. Peters, Dr. Melius.

Dr. Eugene Beach presented a resolution that the Committee on Legislation are requested to take such action as they may deem necessary in obtaining such legislation as will tend to the restoration of medical control subject to proper State supervision; adopted.

Dr. Wey moved that the President's address be referred to Dr. W. W. Potter, Dr. L. Pitcher, Dr. Beach, Dr. C. R. Heaton and Dr. Brush; carried.

The following Board was appointed by the President to suggest the names of four persons to the Board of Regents from whom they shall select two to whom to grant a degree: Dr. D. B. St. John Roosa, A. Jacobi, A, Vanderveer, Dr. A. W. Suites, Dr. B. F. Sherman.

Dr. Fletcher thought the Society should name the Board. His remarks caused debate and he afterwards withdrew them.

Papers presented. It was decided to limit the reading of papers to twelve minutes. Several essays of interest to the profession were read and the Society adjourned until afternoon.

In the afternoon the following Nominating Committee was appointed: Dr. W. J. Morton, Joseph Hasbrouck, Dr. D. V. O'Leary, Dr. John E. Burdick, Dr. J. H. Glass, Dr. H. D. Whey, Dr. Albert L. Beahan, Dr. W. D. Eli and Dr. William H. Bailey.

Dr. Abraham Jacobi of New York, offered a resolution in regard to the office of Coroner. It advocated a certificate of graduation as practicing physician, as the necessary eligibility to a nomination. The resolution was adopted, after brief remarks.

Dr. M. J. Lewi, from the State Examining Board, read his annual report. It showed eight examinations during the past year, at which 326 candidates were examined. Two hundred and ninety-six possessed the necessary qualifications—being over 21 years of age, of good moral character and having completed a three years' course in a reputable medical college. Twenty were rejected. Under the existing laws, quacks are prevented from gaining any foothold in this State. The fees collected during the year were $245, and the expenses $7,800. Any attempt to reduce the examination fee from $25 to $5 would be a step towards nullifying the law. The committee had selected Dr. William C. Wey, President, and Dr. M. J. Lewi, Secretary, for the ensuing year.

Dr. D. B. St. John Roosa from the committee to select names to be sent to the Board of Regents, recommended the following: Dr. W. W. Potter, Buffalo; Dr. W. S. Ely, Rochester; Dr. M. J. Lewi, New York; Dr. J. W. Roosevelt, New York; Dr. E. Van Slyke, Albany; George C. Seymour, Utica; adopted.

Syracuse Academy of Medicine.—The Syracuse Academy of Medicine met February 6, Dr. H. D. Didama in the chair. Dr. John Van Duyn was to have presented a history of the Syracuse Medical Association of which the Academy is an outgrowth, but as he had not finished the paper he merely outlined its contents and will submit the finished history at a future meeting. It will be a comprehensive and thorough work and will be a valuable part of the archives of the new organization. Dr. J. C. Carson, Superintendent of the State Institute for Feeble-minded Children, presented a very interesting treatise on juvenile insanity, explaining the methods of treatment employed at the Institute. Dr. Gregory Doyle, gave some general observations on fractures and their treatment. He was followed by Dr. F. W. Marlow, Professor of Ophthalmology in the Medical College, who reported a number of cases of injury to the eyeball. Each of the papers was followed by a general discussion by the members. Dr. H. D. Didama, President of the Academy, made an address in which he spoke of the many benefits which are to come from the Academy and bespoke the hearty coöperation of all the members.

The following resolution was carried:

Moved that a committee of three be appointed by the chair to report at their convenience on the organization, methods and work of the City Board of Health with such reflections as they may see fit to make; that Dr. Donohue, on account of his position as President of the State Board of Health be chairman of this committee.

The chair appointed Drs. Donohue, Van Duyn and Halstead.

The Academy's room is now completely furnished, and a library has been started.

Rome, Ga., Medical Society.—The Rome (Ga.) Society of Medicine held its annual meeting January 31. The following officers were elected: Dr. H. H. Battey, President; Dr. W. A. Johnson, First Vice-President; Dr. J. N. Cheney, Second Vice-President; Dr. R. P. Cox, Secretary; Dr. L. P. Hammond, Treasurer. None of the old officers were reëlected.

Dr. Robert Battey was elected President of the Society when it was organized one year ago, and under his able administration it has prospered and accomplished a great deal of good. He was the unanimous choice of the Society for its highest officer this year, but owing to his pressing duties he was unable to accept and declined reëlection.

Denver and Arapahoe Medical Society.—At the fifth annual meeting of the Denver and Arapahoe Medical Society, Jan. 9, 1894, the following officers were elected for the ensuing year: President, Dr. Wm. P. Munn; Vice-President, Dr. I. B. Perkins; Recording Secretary, Dr. H. H. Bucknum; Reporting Secretary, Dr. Chas. H. Manley; Treasurer, Dr. E. J. Rothwell; Board of Censors, Drs. E. R. Axtell, W. J. Rothwell, J. N. Hall, Robt. Levy, J. C. Herrick.

Illinois State Medical Society.—The Executive Committee of the Illinois State Medical Society, held a meeting in Chicago February 14 for the purpose of perfecting the arrangements for the annual meeting of the Society to be held in Decatur, May 15, 16 and 17. The President, the Permanent Secretary, the Secretary of the Committee of Arrangements and the chairmen of the several committees were present

Jamestown, N. Y. Medical Society.—The Jamestown Medical Society met February 6. President William Marvin Bemus, M.D., was the host at a dinner which preceded. There were present, Dr. Laban Hazeltine, Dr. Morris N. Bemus, Dr. R. N. Blanchard, Dr. L. H. Snow, Dr. H. P. Hall, Dr. J. H. Wiggins, Dr. S. Z. Fisher, Dr. C. J. Phillips, Dr. E. C. Lyman, Dr. Mary Armstrong, Dr. J. W. Morris, Dr. Lundgren, Dr. Parks, Dr. Parker, Dr. Wellman, Dr. A. H. Bowers, Dr. Eastman, Dr. Sharpe of Lakewood and Dr. Smith of Falconer.

President Bemus made an address; and also Dr. Hazeltine. Before adjourning, the Society by vote acknowledged the hospitality of the President.

Corning Academy of Medicine.—The annual meeting of the Corning Academy of Medicine, New York, was held February 5. The session was spent in the discussion of a paper read by Dr. Carpenter. The following officers were elected for the ensuing year: President, Dr. H. M. Bourne; Vice-President, Dr. C. W. Hayt; Secretary and Treasurer, Dr. W. S. Cobb; Censors, Drs. Tillotson and Smith of Corning, and Carr of Caton.

MISCELLANY.

New Port Physician.—Dr. Walter D. Green has been appointed Port Physician of Philadelphia.

Dr. O. H. Fretz of Quakertown, has been appointed Clinical Assistant in the Eye Department of Jefferson Medical College, Philadelphia.

Typhus Fever.—A telegram of February 9, states that typhus fever in its most malignant form is prevailing at Sherwood, Iron County, Texas. If it is typhus fever it must have been brought from Mexico.

Professor Crile.—Dr. George W. Crile of Cleveland, has been appointed Professor of the Principles of Surgery by the Faculty of Wooster Medical College, and Dr. Fred. C. Taylor was elected Secretary.

Monument to Charcot.—Professor Brouardel has been elected chairman of the committee to collect subscriptions. M. Pasteur is the Honorary President of the committee. The sum of $600 has been collected by the *Progrés Medical.*

University of Utrecht.—Of a total of 800 students now on the register of the University of Utrecht, 326 belong to the medical faculty. In 1893 the degree of Doctor of Medicine was conferred on five candidates.

Dr. Lassar, the dermatologist, who, it will be remembered was General Secretary to the International Medical Congress in Berlin in 1890, has had the title of Professor conferred upon him.

Dr. Harrison Allen has been elected Professor of Laryngology and Rhinology; and Drs. A. L. Vansant and Walter J. Freeman, Adjunct Professors of Laryngology, in the Philadelphia Polyclinic. Prof. A. W. MacCoy will continue to give clinical instruction in the same branch, at the dispensary of the Pennsylvania Hospital.

Cholera.—On February 2 a cablegram from Berlin announced that on information received from Thom, a town near the frontier, that cholera was prevailing in two districts of Poland near the Prussian line, and another on the 9th, from Warsaw, stating that "there has been a recrudescence of cholera here and many deaths from the disease are occurring."

Germany's Doctors.—Germany, whose population is about 50,000,000, had 21,621 physicians in 1893, against 20,500 in 1892; that is, an increase of 1,521. That makes about 4.37 doctors for every 10,000 inhabitants, but they are not equally divided throughout the Empire; for in some regions there are not even two doctors for every 10,000 inhabitants, while in other districts there are 30 of them for the same number of population. Germany possesses also 915 dentists and 4,988 druggists.—*New York Tribune.*

Clinical Teaching in Spain.—As a good deal of dissatisfaction has from time to time been expressed by the Spanish medical journals and by students of medicine as to the inadequate provision for clinical instruction in the medical schools of the Peninsula, the Minister of Education has commissioned Dr. Amalio Gimeno, Professor in the Medical Faculty of the University of Madrid, Senator of Spain, and lately Inspector General of Public Health, to make an official inquiry into the matter.

Midwinter Fair.—The San Francisco *Chronicle* of January 28, in a magnificent number of thirty pages tells the story of the opening of the great Midwinter Fair. The scenes are very like those attending the similar exercises in Chicago at the opening of the World's Fair. Our readers will all have the opportunity of seeing the California way of conducting the Exposition by attending the next annual meeting of the American Medical Association June 5. The Fair will not close until July 1.

The Way of the Transgressor is Hard.—A press dispatch says: Barbrick and Richards, traveling specialists, advertised medical services and surgical treatment free. Consultation was free, but medicine came high, and they realized over $300. They have been arrested for obtaining money under false pretenses. Two hundred dollars was recovered. They hustled for their bill, and finally, after paying attorneys, officials, and refunding, they were permitted to go. They showed no diplomas. Inquiry at Cincinnati brought the information that they were not registered there as claimed. They are billed for other towns.

The New York National Guard.—The medical officers of the New York National Guard met at Albany February 7. The meeting was called to order by Surgeon-General Joseph D. Bryant, in the Armory of the Tenth Battalion, and was attended by about fifty medical officers of the Guard. An organization was formed for purposes of mutual advancement and for the improvement of the service. A constitution and by-laws was adopted, and Surgeon-General Bryant was chosen President ex-officio. The following officers were elected: Vice-Presidents, First Brigade, Major Daniel Stimson, Seventh Regiment; Second Brigade, Major William Spencer, Twenty-third Regiment; Third Brigade, Major Herman Bendel, Brigade Surgeon; Fourth Brigade, Major A. H. Briggs, Sixty-fifth Regiment; Secretary, Lieutenant D. S. Burr, Assistant Surgeon Twenty-sixth Separate Company; Treasurer, Col. Henry, Assistant Surgeon-General.

It is provided that each Vice-President is to be presiding officer of the association in his brigade.

Minnesota Lunatics.—It will be remembered that the Supreme Court of Minnesota recently decided in the Blaisdell case, that the law under which the insane in Minnesota have been committed to the State hospitals for the insane was unconstitutional, and steps will have to be at once taken to secure their re-commitment under the old law, either by action taken by the friends of the patient, the probate court of the county from whence they were committed, or this failing, by proceedings instituted by the hospital authorities in the probate court of the county where the hospital is situated.

According to the *Pioneer Press* of February 8: "The board of trustees after discussing all the serious phases of the situation, instructed the superintendent to notify the judges of probate of the respective counties, from which patients were committed, and the friends of the patients to come and remove them, and, in case of their refusal or neglect, to set the patients at liberty after a reasonable time.

Notification of Infectious Diseases.—It will be seen from the following taken from the Paris correspondence of the *Lancet* of January 20, that the French have finally adopted compulsory notification of infectious diseases. The forms are very guarded, and intended to cause as little friction between practitioner and patient as possible:

"*Compulsory Notification of Infectious Diseases 'un fait accompli' in France.*—On Dec. 30, 1893, there appeared in the *Journal Officiel* the Ministerial Decree fixing the list of infectious diseases that must henceforth, once the diagnosis is made, be reported to the authorities by Doctors of Medicine, *officiers de santé*, and *sages-femmes*. Postal cards will be supplied gratuitously to each practitioner. On the card must be filled in the name of the malady and precise directions regarding the situation of the infected premises. The declaration must be dated and a delicate provision is made enabling the practitioner to avoid direct mention of the name of the malady, which will be indicated only by a number (a list of maladies with their corresponding numbers is supplied on the first page of the *carnet*). The medical man is not obliged to sign his declaration, a number printed on each leaf of the *carnet* sufficing to distinguish his identity; nor need the name and address of the patient be filled in should the informant be able to give sufficiently explicit directions for finding the house infected. A small space is reserved in the declaration sheet for the (optional) mention by the medical attendant of the appropriate sanitary measures that should in his judgment be taken. In the country districts the declaration must be sent to the mayor of the commune and to the subprefect, in chief towns to the mayor of the arrondissement and to the prefect, and in Paris to the mayor of the arrondissement and to the prefect of police. Negotiations are now being conducted between the Minister of the Interior and the Minister of Commerce as to the free postage of the declarations. Each book supplied to practitioners will contain twenty double declaration forms. The list of declarable diseases is as follows: typhoid fever, typhus fever, smallpox and modified smallpox, scarlet fever, diphtheria (including croup), sweating sickness, cholera and choleraic diseases, pest, yellow fever, dysentery, puerperal fever (excepting when professional secrecy as to the existence of pregnancy has been claimed by the patient), and ophthalmia of the newly born. It will be noticed that measles, rubeola, chickenpox, mumps, scabies and ringworm are absent from the list."

Hospital Notes.

An Emergency Hospital has been established at Evanston, Ill.

St. Joseph's Hospital at St. Paul opened a training school for nurses February 1.

Dr. J. T. Duryea, Superintendent of the Flatbush L. I. Hospital for the Insane, has tendered his resignation to take effect February 28.

A Bill has been introduced in the Virginia Legislature providing for female physicians for the female patients in each asylum for the insane in the State.

The Memorial Hospital for Women and Children in Brooklyn was damaged by fire February 6. This hospital was occupying temporary quarters, on Prospect Place. The inmates were rescued with some difficulty, and several physicians aided the fire department in carrying the sick from the building. The loss is about $10,000.

Hospital Internes at Dinner.—The fifth annual meeting of the Alumni Association of the Internes of the Methodist Episcopal Hospital of Brooklyn, was held at the Montauk Club February 2. A dinner was served, and the meeting was afterward called to order by Dr. P. H. Sturgis, the President, who, after a few preliminary remarks, introduced the speakers of the evening. "The Alumni Association" was responded to by Dr. H. B. Delatour of the surgical staff; Dr. J. F. McCaw, late House Surgeon, responded to the toast, "The Younger Members; Dr. James P. Warbasse of the surgical staff, spoke upon "Forecasts;" Dr. H. P. De-Forest discoursed upon "Benedicts;" Dr. G. R. White spoke of the "M. E. H." from a New York standpoint; "Medicine versus Surgery," was responded to by Dr. A. D. Bogart, House Physician.

The following officers were elected for the ensuing year: President, Dr. J. P. Warbasse; Secretary and Treasurer, Dr James F. McCaw.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from February 3, 1894, to February 9, 1894.

Major ROBERT M. O'REILLY, Surgeon U. S. A., is granted leave of absence for two months, with permission to go beyond sea.

First Lieut. BENJAMIN BROOKE, Asst. Surgeon, is relieved from duty at Ft. Leavenworth, Kan., to take effect upon the arrival of First Lieut. WILLIAM H. WILSON, Asst. Surgeon, at that post, and ordered to Camp Pilot Butte, Wyo., for duty.

The following named officers of the Medical Department are relieved from duty in Washington, D. C., to take effect upon the completion of the present course of instruction at the Army Medical School, and are assigned to duty at the stations hereinafter designated: First Lieut. WILLIAM W. QUINTON, Asst. Surgeon, Ft. Riley, Kan.; First Lieut. THOMAS S. BRATTON, Asst. Surgeon, Ft. Niobrara, Neb.; First Lieut. DEANE C. HOWARD, Asst. Surgeon, Ft. Buford, N. Dak.; First Lieut. ALEXANDER S. PORTER, Asst. Surgeon, Ft. Keogh, Mont.; First Lieut. WILLIAM H. WILSON, Asst. Surgeon, Ft. Leavenworth, Kan.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending February 10, 1894.

Asst. Surgeon FRANK C. COOK, ordered to Naval Laboratory and Department of Instruction, New York.

LETTERS RECEIVED.

(A) Allan, H., Tacoma, Wash.

(B) Brooke, G. W., Ellsworth, Ohio; Bowman, A. H., Deadwood, S. D.; Ball, John & Sons, London, England; Bishop, S. S., Chicago, Ill.; Broome, G. W., St. Louis, Mo.; Brush, E. F., Mt. Vernon, N. Y.; Blose, J. W., Altoona, Pa.; Borck, Edward, St. Louis, Mo.; Bondurant, A. A., Cairo, Ill.

(C) Cochran, Jerome, Montgomery, Ala.; Cryer, M. H., Philadelphia, Pa.; Cleaves, M. A., New York City; Chambers, H. J., Denver, Col.; Cohoian, M. J., New Britain, Conn.; Cooper, E. H., Galesburg, Ill.; Clark, Earl, Iowa City, Iowa.

(D) Diehl, C. Lewis, Louisville, Ky.; Drevet, The Mfg. Co., New York City; Dunglison, R. J., Philadelphia, Pa.; Deaver, J. Blair, Philadelphia, Pa.

(F) Farley, W. K., Waterman, Ill.

(G) Grubb, J. W., Galesburg, Ill.; Godfrey, F. H., Bloomington, Ill.; Gardner, R. W., New York City; Gibbons, J. E., Baltimore, Md.

(H) Hall, G. V., Wheatland, Texas; Hall, E. A., McCook, Neb.; Hawkins, Lucy, Springfield, Mo.; Herdman, W. J., Ann Arbor, Mich.

(J) Jones, Geo. W., Boulder, Col.; Johnson, L. O., Ann Arbor, Mich.

(K) Kirkland, R. J., Grand Rapids, Mich.; Kegan, Paul, Trench, Trübner & Co., London, England; Knight, C. H., New York City; Keiper, Geo. F., La Fayette, Ind.; Kirkley, C. A., Toledo, Ohio.; Kerr, J. P., Pittsburg, Pa.

(L) Lofland, W. A., Linden, Ind.; Lord & Thomas, Chicago, Ill.; Leland, Lena C., Rockford, Ill.

(M) McKelway, G. I., Philadelphia, Pa.; Moutgomery, E. E., Philadelphia, Pa.; Mitchell, C. L., Fort Meade, Fla.; Marshall, T. E., Union City, Tenn.; Mason, D., Spokane, Wash.; Moore's Newspaper Subscription Agency, Brockport, N. Y.; Mackintosh, M. A., Paterson, N. J.; McBride, M. A., Leesville, Texas.

(N) Neer, H. C., Park Ridge, N. J.

(O) Owen, W. C., Newburg, Mo.; O'Neil, J. W., Chicago, Ill.

(P) Penfield, R. C., Philadelphia, Pa.; Perpoena Chemical Co., New York City; Putnam's, G. P. Sons, New York City.

(Q) Quin, R. A., Vicksburg, Miss.; Quine, W. E., Chicago, Ill.

(R) Rauch, J. R., Lebanon, Pa.; Rowley, J. F., Des Moines, Iowa; Rohr, Geo. W., Rockford, Ill.

(S) Stephens, Mrs. M. A., Minneapolis, Minn.; Smith, A. J., Galveston, Texas; Stuver, E., Rawlins, Wyo.; Schiller, L., Milwaukee, Wis.; Steele, D. A. K., Chicago, Ill.; Spring, N. W., Columbus, Ohio; Simmons, G. L., Sacramento, Cal., 2; Smith, W. S., St. Clair, Minn.; Smart, Chas., Washington, D. C.

(T) Turner, B. S., Chicago, Ill., 2; Trueheart, P. P., Starling, Kan.; The A. Hawkins Co., New Orleans, La.; Tuttle, A. H., Cambridge, Mass.; Toner, J. M., Washington, D. C.; The Ruggles-Gale Co., Columbus, Ohio; The Troy Buggy Works Co., Troy, Ohio; The Western News Co., Chicago, Ill.

(W) Wick, D. M., Cedar Falls, Iowa; Weaver, W. G., Wilkesbarre, Pa.; Warner, J. W., New York City; Ward Brothers, Jacksonville, Ill.; Wilkenson, George, Omaha, Neb.; Wall, John P., Tampa, Fla.; Whetzel, F. F., Milwaukee, Wis.; Wood, E. N., Buchanan, Va.; Wenzlick, Wm., Chicago, Ill; Westermann, B. & Co., New York City.

The Journal of the
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ORIGINAL ARTICLES.

MEDICAL EXPERT TESTIMONY.

BY HENRY M. LYMAN, A.M., M.D.
CHICAGO, ILL.

At a recent meeting of the Practitioners' Club in this city, an hour was devoted to a discussion of the subject of expert medical testimony. There appeared to be a feeling that the method of eliciting such testimony now in vogue in the law courts of the country is imperfect, and unjust to both the accuser and the accused. An ideal picture was presented for admiration, in which judges, jurors and lawyers were depicted at the feet of an impartial and omniscient medical expert (appointed by some rather nebulous power dimly visible in the back-ground), calmly engaged in registering his decrees in all cases of medical jurisprudence. Undoubtedly, this would be the best way in an ideal society, where medical experts were omniscient and every one else was eager for the truth, the whole truth, and nothing but the truth. Unfortunately, however, we do not live under such a dispensation of Providence. In an Utopia such as we delight to contemplate, crimes would be unknown, and medical experts would be unneeded. We must look to a lower sphere—such an one as we now occupy—for the opportunity to deploy medical expert testimony. In our human law courts one soon discovers that the truth, the whole truth, and nothing but the truth is by no means the object of research. On the contrary, the entire effort is directed to the winning of the suffrages of a jury in favor of one of two hypotheses which are laid before it. The success of a given hypothesis is the main thing in view; the conformity of that hypothesis with truth is quite a secondary consideration in the minds of the contestants. For this reason, in our American courts of law the power of the judge has been largely taken from him, so that he can not, like an European judge, intervene to any considerable extent, in the interest of truth and justice. For this reason, the majority of lawyers would resent the appointment of an impartial expert who should act as an assessor with the judge, and should instruct the jury in their course of action. So long as our judges are active politicians, selected by politicians for their availability rather than for their ability, their appointment of experts would always be liable to challenge for want of impartiality. The experiment of placing in their hands the work of appointing certain officers has been tried in past years, without giving to the public any better results than those obtained by the ordinary methods of popular election.

For these reasons it seems to me very improbable that, under existing conditions, any improvement upon the present methods of selecting medical experts can be expected. At present, each side in a court of law selects the experts in whom it feels the most confidence. Trivial cases conducted by inferior lawyers bring forward so-called experts who belong to the same level; while important cases involving great interests seldom fail to secure the services of the leaders in the professions of law and medicine. So long as the contestants are satisfied it is hardly expedient for us to complain. If the practice of law should ever rise to the level of the pursuit of the exact sciences in its devotion to truth, and its impartial search for facts, it will then be time to change the present method of selecting medical expert witnesses.

The outcry that is made against the present method of employing expert testimony has its origin, not so much with the heedless public, or with the self-satisfied lawyers, as with certain medical gentlemen who have sometimes found themselves at variance with the opinions of other physicians whose qualifications they are disposed to underrate. Such differences of opinion are seldom concerned with demonstrations of fact, but with matters of inference. For example, there is seldom any difference regarding the acceptation of proven symptoms as either genuine or fictitious. It is not often difficult to decide from an array of facts, whether a given individual is or is not of perfectly sound mind; but it is often very difficult to decide how far such an individual may or may not be responsible for his acts. Here lies the difficulty of agreement. This difficulty is increased by the fact—too often overlooked—that responsibility is a variable quantity. No one can listen to or read the autobiographic narratives of the insane without being impressed with this fact. The growth and progress of irresponsibility, the constant see-saw of conflict between opposing motives, and the final submergence of prudential considerations are the most interesting features of such histories. It is not among the chronic and violently insane patients who populate our asylums that these things are to be studied. It is among the slightly defective examples of idiocy and paranoia who still enjoy their freedom, and are yet unknown to the asylum physician, that these incipient degrees of irresponsibility must be investigated.

The difficulty of agreement among experts in the matter of insanity is farther increased by the fact that law and medicine do not approach the subject by the same paths. The physician simply endeavors to find out whether or no there is deviation from the normal standard of development or of health. If there be such deviation, he is naturally impressed by that fact, and feels that it should have weight in determining the degree of responsibility of the patient. Here lies the difficulty, and here begins the divergence of opinions. Uniformity of opinion regarding a variable quantity is out of the question; nor should its absence be urged as an argument against expert testimony, any more than the fact that

misdemeanors are lightly punished by one judge, but are severely visited by another, should be thrown in the face of an honorable judiciary. Furthermore, while the physician occupies himself with the scientific aspects of the case, the lawyer cares little for the physical condition of the malefactor—he is chiefly concerned with the results of his action and with the question of his responsibility. If, now, the lawyer were zealous only for the determination of the degree of responsibility, he would not often find himself in conflict with the physician. On the contrary, however, he assumes at the outset for the prisoner a certain arbitrarily asserted degree of responsibility; and during the course of the trial he seeks to include all testimony that is in harmony with that proposition, and to exclude everything that tends to controvert his assumption. This method of proceeding is favored by the whole process of the courts, in which the judge possesses little power beyond that of a moderator. The introduction of hypothetic questions also renders it possible to extract a favorable opinion from almost any witness who speaks about matters of inference. Additional doubt may be also created by the discord between legal and medical definitions of insanity; for it is a fact that a man may be legally sane though medically insane.

In all cases involving a question of responsibility, the medical witness must seek to avoid all show of active partisanship. He is free to demonstrate every defect, degeneration or disease that may tend to impair such responsibility, but he must not assume that all responsibility is necessarily abolished by the existence of such defect, degeneration or disease. Nor is it for him to determine, under our laws, the degree of extenuation that should be allowed in any given case of diminished responsibility. That is a question for the jury alone to decide. While we admit that in some respects our criminal law needs amendment, it must not be forgotten that the semi-barbarous social condition of our people renders the administration of even-handed justice impossible in many cases. Until we provide security that the criminal insane shall be permanently placed where they shall be permanently harmless to society, we must expect that the plea of weakened responsibility will often fall upon deaf eared jurors, and that medical experts will often seek to ascertain how much responsibility, rather than how little, can be established in any case that is submitted for their opinion. These unfortunate social conditions do undoubtedly render more difficult than it should be the task of the conscientious medical witness, but they can not be urged in justification of a practice that exists in our law courts, of introducing medical testimony merely for the purpose of raising unfounded doubts in the minds of ignorant jurors.

A medical witness should be free to comment upon testimony and, if necessary, to show its insufficiency; but he should not be licensed to befog the minds of jurors by the expression of hypotheses (guesses) for which there is no possible foundation in the evidence before him. In many instances the opinion of a medical witness can not be the expression of absolute certainty, but is merely the utterance of an inference based upon a necessarily incomplete presentation of facts. In all such cases the expert must remember that he is dealing only with probabilities, and he must take care that his inferences are the legitimate and logical consequences of accessible facts, and that they be not colored and vitiated by any inclusion of unproven possibilities. The neglect of this precaution has sometimes led to flagrant injustice.

For the reasons thus briefly set forth, I am not inclined to expect much benefit from any proposed change in the employment of medical expert testimony. Human nature and the mode of legal procedure must be improved, before any real advance can be made in this matter. Fortunately, we are not responsible for the defects of human nature, nor for the imperfection of the courts of law. Let us attend to our own affairs, and improve the quality of our experts; for in this way we may accomplish something of a substantial character for the benefit of society.

LECTURE ON DRINKING WATER.

AN ABSTRACT.

BY CHARLES SMART, M.D.
SURGEON U. S. A.

A lecture on drinking water was delivered by Dr. Charles Smart, U. S. Army, on the 5th inst., under the auspices of the Sanitary League of Washington, D. C. The lecturer spoke first of waters generally and their constituents, dividing the latter into inorganic matters, dead organic matter and living organic matter. The first of these he represented as not necessarily a sanitary impurity, for the human system required and assimilated from articles of food and drink over an ounce of just such salts daily. If a water is saline to the taste, or alkalin or chalybeate, or is so hard as to curdle the soap in washing instead of forming a foaming lather, it will probably cause intestinal disorders. Otherwise the analyst has little interest in the inorganic salts as the totality of their amount is insufficient to occasion harmful effects. The dead organic matter is of importance because it was once alive and because it is likely to be associated with that which is still alive. It is not specially dangerous in itself,—in fact it is seldom harmful unless present in quantity sufficient to give a taint or odor to the water. Nor do the living organisms ordinarily seen in the sediment of a water have much bearing on the quality of the water.

"You will observe, then, that since the saline matters and the dead organic matter are not specially unwholesome except when present in quantities appreciable to the taste, and since most of the living organisms present in a water have little influence on its quality, the question of wholesomeness becomes reduced to a determination of the presence or absence of certain organisms which we know to be the germs of disease and to be sometimes contained in water supplies. These are the germs of malarial and typhoid fevers and of cholera. It is to the microscopist and bacteriologist that we would naturally look for the detection of these, but bacteriology is yet in its infancy—a lusty infant, it is true, and giving promise of a phenomenal manhood. There may be in the distributing reservoir of a large city enough of the germs of typhoid fever to cause sickness and sorrow in many a household in the course of a year, but what chance has the microscopist of discovering them in the part of a drop which covers the field of his microscope? There may be several specimens of four-leaved clover in the meadows, but what are our chances of finding one in a handful plucked at random?

"Extravagant ideas of the powers of scientific in-

vestigators are sometimes published. Not long ago, I saw it asserted that a cholera germ had no more chance of passing along the current of the Potomac undetected by the bacteriologist, than a mad dog had of careering along Pennsylvania Avenue at midday without being discovered. Indeed, it is because of the inability, so far, of the bacteriologist to detect the germs, that an appeal for information is made to the sanitary chemist. The chemist examines the dead organic matter in the water. Malarial infection is a product of a soil in which the decay of vegetable organic matter is in progress. Waters draining from such a soil carry with them the malarial infection, and also more or less of the decaying organic matter. The presence of the latter, discovered by the chemist, suggests the likelihood of the concurrent presence of the former. When the germs of typhoid fever or of cholera are present in a water, they generally enter the water along with sewage, for it is known that these pathogenic or disease-breeding organisms are cast out of the sick person by way of the intestinal canal. Hence, when the presence of animal matter or sewage is detected by the chemist, the likelihood of the concurrent presence of the bacillus of typhoid fever is suggested. Chemistry makes no pretense of discovering the germs of disease, but merely suggests the likelihood of their presence—the presence of malaria in association with vegetable matter; the presence of the bacillus of typhoid in association with animal matter."

The lecturer then divided waters for his sanitary inquiry into: Rain or cistern waters, surface waters, subsoil or ground waters and deep or subterranean waters. The first he showed to be pure and wholesome when ordinary care is taken in their collection and storage. The second, or surface waters, are pure or impure according to the nature and condition of the shedding surface. He instanced the Rio Grande as a malarious surface water, and the cause of the malarial fevers which rendered Fort Brown, Texas, the most insalubrious of the United States military posts until a new and pure water supply was provided, when with the discontinuance of the river water the post became as healthy as an Atlantic summer resort. The epidemic at Plymouth, Pa., in 1885 was brought forward as an illustration of typhoid fever propagated by surface waters.

"Local outbreaks of typhoid fever have been traced so frequently to the use of the water of shallow wells that the health officers of most of our municipalities have interdicted their use. But on the other hand, if the soil is fresh and unpolluted by the filth that is unavoidably associated with a long continued occupancy a free supply of soft wholesome water may be obtained. Brooklyn, Long Island, is supplied in part by sub-soil water piped from a clean filtering area at some distance from the city. At isolated country houses the dangerous character of the shallow well arises from the proximity of cesspools, pits, garbage heaps and manured ground; and not unfrequently the handsome trees that throw a grateful shade over the cool waters of the well form channels of entry for unfiltered seepage along the course of their roots. The distinguished bacteriologist, Prof. Koch, attributes any unwholesomeness of such wells to unfiltered inflow from the surface, but whether the contamination is from unfiltered inflow or from the inefficiency of the subsoil as a filter, the facts remain that such waters are found by the chemist to contain much organic matter, vegetable and animal, and by medical observers to be associated with the propagation of both malarial and typhoid fevers.

"The deep or subterranean waters are those that falling on high ground sink into broken edges of some porous stratum which underlies the clay beds of the bottom lands. The waters percolate through and along the porous stratum underneath the impermeable clay which supports the subsoil water. When tapped by digging or boring they are the waters of our deep wells, originally pure, but often valueless for domestic or manufacturing purposes on account of the large amount of mineral salts which they have dissolved in their subterranean course. If the pervious layer be one of sand and gravel the water may be as pure as distilled water. The discovery of such water 350 feet below the surface of the city of Memphis, Tenn., solved the water question for that city at a time when its citizens were debating whether the million dollars which they could raise for a water supply should be expended in bringing in the clay-laden waters of Wolffe River or the sewage-polluted waters of the Mississippi. The thorough filtration to which this deep-lying water is subjected in its subterranean course freed it from all germs, whether of malaria or of typhoid."

Dr. Smart then gave some interesting practical illustrations of the methods followed by chemists in testing waters to discover the presence of various kinds of impurities.

The simplest single experiment employed by the chemist is the charring or burning of the residue after evaporation. If there is merely a slight darkening without fumes or odor the water is free from organic matter. If there is much blackening which is dissipated with difficulty and with the evolution of peaty or pyroligneous odors the matter is vegetable. If there is a strong nitrogenous odor and the carbonaceous blackening disappears with incandescent sparkles and nitrous fumes the matter is animal. This is but a rude and primitive experiment but it gives valuable information in the absence of facilities for more elaborate methods. The organic purity of a pure water may be demonstrated by it, as well as the impurity of a notably bad water.

Purification by sedimentation was then discussed, as it is by this process that the Potomac River supply of Washington is supposed to be treated. The inefficiency of the local arrangements was pointed out and the high death rate of the city from typhoid fever was attributed to this inefficiency. "The greater the care taken in the purification of a city's water supply the less is the death rate of that city from malarial and typhoid fevers. Brooklyn has an annual death rate from typhoid fever of 15 in every 100,000 of its population; New York 26; London 28; Baltimore 40; Boston 45; Cincinnati 63; Philadelphia 66; Chicago 69, and Washington, according to Dr. Billings' recent census work, 75. We do not have this high rate because our sewerage system is defective, for Baltimore has no sewerage system, nor because our houses are overcrowded and unventilated, back yards filthy and undrained and streets narrow and unclean. No. We have it because the germs of the disease are distributed along with the clay particles of the Potomac water. The inflow of the sewage into the Potomac River above the Great Falls is small, but there is enough of it to give us more typhoid fever than is found in Baltimore, New

Orleans and other cities that lack many of our sanitary advantages."

The Army engineers in charge of the water supply are aware of the defects in the system, and have excellent plans for remedying them; but money is required to carry them to completion. Dr. Smart closed by urging the expenditure.

"Think of the 75 deaths from typhoid fever annually in every 100,000 of the population, 60 deaths more than in the city of Brooklyn, and more than we would have in this city if our water was as pure as that of Brooklyn. Putting our population at a quarter of a million, we have 150 unnecessary deaths every year. Ah! but the cases! To find the number of cases we must multiply the deaths by twenty! Three thousand cases of serious sickness, each lasting from two to six weeks. Three thousand cases of disease that might be prevented by the expenditure of a little money. Think of the suffering, anxiety and sorrow involved in the history of these three thousand cases, and then say whether an appropriation having in view the purification of the city water supply is a good investment or a bad one."

DESCENT OF THE TESTICLE IN ADULT LIFE.

BY ALBERT H. TUTTLE, M.D.
CAMBRIDGE, MASS.

As such cases as the following must be of extreme rarity, and as they shed a great amount of light on the phenomena of earlier and normal descent, and at the same time perhaps instruct us somewhat as to the manner in which we should deal with cases of undescended testicle; cases where the majority of opinion has been in favor of the complete removal of the organ when it interferes with the comfort of the patient, is caught in the inguinal rings, or complicates a hernia, I have deemed this instance one worthy of consideration.

Not long ago I operated for strangulated hernia complicated with undescended testicle, and after closing the hernial sac and rings, drew the testicle, which was enclosed in the sac, into the scrotum and fastened it there with the tunica by means of stitches. This procedure necessitated the invagination in part of the scrotum. The result was perfect, but after the operation the gentlemen present, some four members of the profession, expressed as their opinion that I should have sacrificed the testicle, and questioned the result. When they said such testicles do not prove of much practical value, I could only answer that I had been consulted by patients with one undescended testicle who were willing to undergo a surgical operation in order to satiate their desire for a second testicle in the scrotum. They simply echoed the general opinion of the profession. But the time has come when we must deal more rationally with these cases, and it is already heralded by various reports in our latest journals.

E. W. L., aged 31 years, was born with a congenital hernia on the right side and an undescended testicle on the left. He wore a truss on the right side until 12 years old; it was then discarded until the age of 21, when he put on a double truss and wore it until six months ago; since, he has employed simply a suspensory bandage to keep the bowel in place.

I saw him for the first time about two years ago; an examination showed an absence of the left testicle, and a dilated condition of the inguinal rings on both sides. In the standing position the abdominal wall bulged outward at the site of the rings, and an impulse was felt on coughing. It was obvious that the sac was not a great one, and that the gut at that time would not descend far along the cord, although it had at an earlier date, according to the statement of the patient. He consulted me for an attack of gonorrhea at this time, and informed me that he had had a similar attack some six years previous. During his first attack he had a swollen testicle on the right side and sharp pain deep in the left groin. Since, he has had a swollen testicle on the right side without any apparent cause. I recognized the condition of the patient at the first visit, and recommended an operation for the radical cure of the herniæ.

He went to Europe shortly afterwards, and I saw nothing of him until a few weeks ago. I now find the testicle on the left side of the scrotum, the inguinal rings smaller than when I first examined them, and, without artificial support, the gut does not distend the abdominal wall or give an impulse on coughing to the contents of the scrotum. The patient experiences no discomfort without the truss, and only about once a week a "lump" appears in the left groin "in the evening when the muscles are tired;" this disappears on lying down, or on pressure.

The following history of the descent of the testicle is given in the words of the patient as nearly as possible: About a year and three months ago a skin, like a bag full of water, came down, and kept getting larger toward evening; the bag became about egg-size, and could be emptied by pressure; in about three months—a year ago—he was sitting writing a letter in the evening, when something was suddenly felt below (in the scrotum); he looked and found the testicle had come down. It disappeared the same evening, but returned to the scrotum a week later, when he tied it down with a piece of tape. In this manner he kept it down for a week; it then returned to the abdomen, and remained concealed three days, and when it came down stayed longer. It has kept going up and coming down, each time staying longer in its normal condition, until now it has remained in the scrotum for about four months.

When the "bag of water" first appeared, it made the scrotum red and hot and somewhat uncomfortable; it disappeared during the night, and on lying down.

He has been married for about one year. Since the attack of gonorrhea two years ago, he has had at times bloody urethral discharges with the seminal ejections, or immediately after intercourse. Examination by the microscope shows nothing abnormal in the seminal fluid except the presence of blood, which probably mixes with it somewhere in the genital tract, external to the testicle. This bloody discharge, for which he recently consulted me, is a complication of the old gonorrhea, and in my opinion has nothing to do with the lately descended testicle.

It seems possible that by care this case will obtain a spontaneous cure of the herniæ.

TRACHOMA.—(GRANULATED LIDS).

Read before the South Kansas Medical Society at Wichita, Kan., Nov. 21, 1893.

BY FLAVEL B. TIFFANY, M.D.
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Trachoma (from the Greek τραχυς, rough), is the term intended to designate a certain disease of the lining of the lids or palpebral conjunctiva; but it has been so indiscriminately used by physicians and some oculists when speaking of the different forms of conjunctivitis that there is much confusion as to its real signification. To most physicians, it means any form of granular conjunctivitis, be it simple, acute, subacute or chronic; especially if there is much roughness of the lining of the lids. In acute conjunctivitis we have a swelling of the papillæ, giving a very rough condition of the palpebral mucous membrane, but this is not trachoma.

In catarrhal ophthalmia, and especially in purulent ophthalmia, the papillæ swell enormously, also the different glands, those of Moll and the Meibomian as well as the trachoma glands; but again, this is not trachoma. Inflammation of the conjunctiva may pass through the different stages, from simple

hyperemia, acute, catarrhal, purulent, subacute and chronic even; and yet not reach that stage or condition which the word, trachoma is intended to signify. It is believed by most authorities that trachoma is consecutive to the different forms and stages of inflammation of the conjunctiva; and according to my own observations and study I am inclined to believe that this view is the proper one. It is, as a rule, a disease confined to the common or lower classes, especially to those who are exposed to irritants and subjected to bad air and other poor hygienic conditions. It is particularly a disease of the so-called scrofulous people; and of the offspring of parents of blood relation; in other words, it is often due to consanguinity.

Of the different kinds of conjunctivitis we have acute, subacute and chronic; we have also what is known as catarrhal and purulent ophthalmia, any or all of which may be precedent to trachoma; that is to say, if these inflammations are permitted to continue through the consecutive stages, they may finally reach or produce the condition of true trachoma. Acute catarrhal ophthalmia is characterized by a turgescence and swelling of the papillæ with more or less congestion and swelling of the whole palpebral conjunctiva. The papillæ may become quite hypertrophied, turgescent, red and succulent; the conjunctiva itself is thickened, especially in purulent or in pronounced catarrhal ophthalmia. In these latter diseases the conjunctiva is so swollen and congested as to be thrown into folds or rugæ, and the adenoid tissue assumes a velvety appearance. The turgescence and hypertrophied papillæ are usually more pronounced at the retrotarsal folds, especially near the canthi. Sometimes the papillæ with the mucous membrane are so enormously swollen and engorged as to be thrown into such large folds and excrescences they resemble a cauliflower; and when the lid is everted, it resembles, as Dr. Noyes has said, the everted rectum of a horse after defecation.

In the simple acute conjunctivitis there is little or no purulent discharge, although the excrescences are frequently so turgid as to be made to bleed at the least provocation.

In catarrhal and purulent conjunctivitis a similar condition exists, but the nature of the disease is different. In acute conjunctivitis there is a slight discharge, but not of a purulent character; it is more of a mucoid nature. The follicles of the conjunctiva are usually also swollen and give the appearance of fish spawn or of tapioca grains; the papillæ, however, frequently rise above the follicles and completely hide them. In subacute conjunctivitis the follicles are more pronounced and the papillæ are less hypertrophied. The granules in the subacute form are frequently more prominent upon the lower lid or may be almost entirely confined to the lower lid, where the fish or frog spawn or tapioca appearance is to be seen. The chronic form, or what is usually called trachoma, is quite a different condition from the other two; in this form we not only have a hypertrophy of the papillæ, the follicles and trachoma glands, with the glands of Moll, but we have true neoplasms of follicular infiltration. The lymphatic stomata are filled with leucocytes and follicular deposits. The infiltration of leucocytes into the stroma and the adenoid tissue of the lid assume a true granular condition with connective tissue cells or nuclei surrounded by connective tissue fibers and atrophy of the normal connective tissue. *In real trachoma we have, then, hypertrophic succulent papillæ, hypertrophic follicles, hypertrophic glands of Moll, hypertrophic trachoma glands and, besides, neoplasms of a granular character predominating. There is an infiltration of connective tissue substance throughout the conjunctiva. The normal stroma becomes atrophied and, to a certain extent, gives place to the neoplasms similar in appearance to the ordinary tubercle of phthisis.* Within these cells or nuclei of the neoplasm, have been found numerous microbes called trachoma bacilli.

Chronic conjunctivitis or trachoma is thought to be contagious. Frequently this disease develops seemingly quite independent of the acute or subacute form of conjunctivitis, and exists for many months before it is discovered.

The different forms of conjunctivitis, if not timely and properly treated, may assume a chronic condition and this condition by some has been called trachoma. Trachoma, however, is something more than this. As before said, in trachoma we not only have hypertrophy of the papillæ, of the glands of Moll, the Meibomian glands, a swelling and thickening of the whole conjunctiva; but we also have follicular infiltration into the mucous membrane and the adenoid tissue; we have a breaking down of the normal tissue, a derangement of the histologic structure with atrophy, with cicatricial tissue and the follicular neoplastic infiltrations resembling tapioca or sago grains.

Conjunctivitis in other forms can be cured by proper treatment in a short time, but it is far different with true trachoma; here the disease is most persistent, frequently resisting any and all treatment, marching on its destructive way for months, even years, before it can be subdued or scarcely checked in its course. Some authors will tell you of several forms of trachoma; but trachoma is trachoma wherever you find it. That there are different stages and exacerbations we grant. That there are different complications existing we well know. In some cases the papillæ are much more congested and hypertrophied than in others; again, in some cases the follicular infiltration is so enormous that the neoplasms stand out in such bold relief as to resemble cauliflower growth. *The chief distinguishing feature, then, of trachoma is the cicatricial formation and neoplastic follicular growths*, and this seems to be a consecutive outgrowth from the acute to the simple catarrhal or purulent, to the subacute, and thence on to the chronic. Whether there is a specific microbe that comes in now to play his part is a question. Others claim that the disease is of a specific nature due to a particular microbe, and with this bacillus or micrococcus they can inoculate the lower animals, and produce there a true trachomatous inflammation. We all well know that the conjunctival sac swarms with many forms of microorganisms, but it would be difficult to say which, if any one, is responsible for the disease. Nearly every oculist who has claimed to have found the bacillus or micrococcus producing trachoma has a microbe differing from all others. As yet, it is wholly speculative whether the disease has its etiology in any specific organism or germ.

One of the most frequent provoking causes of trachoma is some error of refraction, especially that of hypermetropia or hyperopic astigmatism. In my experience, the majority of these patients are hyperopic, and

many are astigmatic. There is another factor that comes in as a cause, and that is the use of tobacco, especially if chewed; and I have found that patients having chronic granular conjunctivitis or trachoma, can not be cured so long as they continue the use of tobacco.

It would seem that the swallowing of the juice which all chewers of tobacco do to a certain extent, poisons the lymphatic system, and so affects the lymphoid and adenoid structures, and until this poisonous nicotine is entirely eliminated from the system it is next to an impossibility to effect a cure. So confident am I that tobacco thus affects the system and prevents the cure of these cases that I absolutely refuse to take a patient using the weed who will not promise to discontinue its use in toto. I have made a careful record of all my patients, and have given special attention to this subject of tobacco, and its effect when used by the patient or having been used by his progenitors; and I have found that a large per cent. suffering from persistent trachoma either use tobacco or their immediate ancestors did before them; and I have also satisfied myself that patients who are not contaminated by the weed get well in a much shorter time than those whose system is under its influence.

I have also experienced that patients suffering for many months and years with trachoma, having received the most approved and continued treatment from the hands of competent physicians and oculists, are cured by the ordinary treatment in a very short time, as soon as they discontinue the use of tobacco.

We know that it is a fact that this disease, trachoma, is more often found among the Irish and American people than among those of other nationalities, and we also know that it is a fact that the chewing of tobacco is limited almost entirely to the Irish and American people.

That trachoma is contagious there is some question, but that it is infectious, there is no doubt.

SYMPTOMS OF TRACHOMA.

The patient complains of a gritty feeling beneath the lids as though there were sand or other foreign bodies lodged there. There is more or less dread and intolerance of light, the photophobia varying in intensity according to the stage and intensity of the disease. The secretion glues the lids together, especially in the morning after sleep, forming a yellow crust at the roots of the lashes. Frequently there is paresis of the levator palpebræ superioris, and in consequence, more or less ptosis (falling of the lid). Sooner or later the cornea is almost sure to be affected, when the ocular conjunctiva is also involved. There is turgescence of the ocular conjunctiva with, perhaps, the blood vessels of the subconjunctiva extending into and upon the cornea with more or less swelling of the margin of the cornea; and this vascular opacity of the cornea is called *pannus*. The pannus, as a rule, begins at the upper part and the vascular opacity may extend upon, midway or even across the cornea, completely obscuring the iris and pupil. This pannus is due to the friction of the rough granular lid and it begins at the upper part of the cornea where it may be confined, for it is usually the upper lid that is mostly involved, and as there is much more motion of the upper lid upon the ball than of the lower, this adds to the corneal complication. It is not infrequent, however, that both superior and inferior lids are granulated at one and the same time, but usually the upper one is far more diseased. The irritation of the rough lids upon the delicate cornea often produces ulceration here, and any existing pterygium is aggravated and may rapidly increase.

PROGNOSIS.

Acute conjunctivitis may run its course in a few weeks and spontaneously get well, but if neglected or improperly treated it may pass into a chronic form, when months and years may be required to effect a cure; and even then with much impairment, if not loss of vision, from some one or many of the complications and sequelæ of the disease. From the infiltration there is atrophy of the stroma with cicatrices; the cul-de-sac or pouch formed by the conjunctiva as it folds over from the lid upon the globe, and which is so necessary to the freedom of movement of both lid and eyeball, becomes obliterated; that is to say, instead of the conjunctiva folding back and forming the cul-de-sac the two surfaces, the palpebral and ocular, are grown together, and the membrane of the lid passes directly to the eyeball. This condition not only interferes with free movement of the lid and ball, but it also tends to contract the lid and invert its free edge, thus drawing the lashes down upon the ball, or even turning the edge of the lid with the lashes so much as to completely fold them in against the palpebral conjunctiva and upon the eyeball; in other words, produce what is termed *entropion*, which condition is most harassing and destructive to the cornea. This entropion is also further favored by atrophy of the intra-marginal space of the lid, thus allowing the ciliæ to drop down and change their normal outward curve to an inward direction. If the disease is seen before these sequelæ arise, and timely and proper treatment judiciously given, it can be cured with little or no damage to vision.

TREATMENT.

In simple acute conjunctivitis, the treatment consists in looking after the hygienic condition of the patient; after his general health; and removing or rectifying any provoking cause, as of a foreign body, or any anomaly of refraction. See that the general health is up to the standard; that food, drink and clothing are good. Tonics, if necessary, should be given; however, it is frequently the case that we find this disease among those of robust plethoric people otherwise in perfect health with ravenous appetite; in fact, the majority of my patients suffering from granular conjunctivitis are from the country, and are well nourished and full of blood. In these cases, it is best to diet them, and I have frequently found that depletion is beneficial. As a local treatment, hot water should be freely used. As a collyrium, the chlorid of zinc is my favorite, ½ to 1 grain to the ounce of water, dropped into the eye night and morning; atropin ½ per cent. to 1 per cent. used once a day, if not continued too long, does good. Other astringents, as sulphate of zinc, alum, borax, sulphate of copper, etc., may be used with equal efficacy. If the disease has assumed the subacute stage, more vigorous treatment may be necessary; here the lids should be everted and the mucous membrane bathed with a solution of nitrate of silver, 1 to 2 per cent., every other day, and in the meantime a solution of boracic acid in warm water 8 per cent. (a

saturated solution being 33 per cent.), can be used three times a day, the patient bathing the lids by means of absorbent cotton saturated with the solution, allowing some of the fluid to go into the eye. A little vaselin, plain, or with yellow oxid of mercury, 1 per cent., should be smeared on the margin of the lids at night to prevent them from gluing together. If the disease has gone on to the chronic form or true trachoma, we then have a far more formidable affection to contend with.

TREATMENT OF TRUE TRACHOMA.

Trachoma frequently baffles the most skilled and approved treatment, and goes on for months and years even before it is thoroughly subdued. At one time it was thought by some as incurable, for if once seemingly subdued, when treatment was discontinued the disease would surely return. From its rebellious character and destructive sequelæ it has compelled the profession to give it much attention. Nitrate of silver solution and sulphate of copper in crayons are the two remedies that have been found most efficient, and in ordinary cases they are most to be relied upon. Nitrate of silver may be used as strong as 10 per cent. or 15 per cent., but it is a question in my mind if such strong solutions do more good, or even as much, as weaker ones; besides, if they come in contact with the cornea, they are liable to do much damage to this delicate structure. The strength that I have found most satisfactory is from 2 to 4 per cent.; that is, 10 or 20 grains to the ounce of water, brushed on to the everted lids two to six times a week. In using the strong solution of nitrate of silver, it should be applied by means of absorbent cotton wrapped around a wooden toothpick or any applier dipped into the solution, and after the solution has remained a second or so, until the mucous membrane begins to turn white, the excess should be washed away by plain cold water. Care must be taken not to allow the solution to come in contact with the cornea, lest it provoke ulceration of this delicate bloodless structure. No solution of nitrate of silver stronger than ¼ per cent. or ½ per cent. should be dropped into the eye. If the sulphate of copper is used, it is best applied as a crayon, and the pencil must be perfectly smooth, for if not, the rough surface will irritate and do harm instead of good.

In treating trachoma, care must be taken that the application be within the retrotarsal folds as well as upon the palpebral conjunctiva. The point of the copper crayon can be passed quite into the cul-de-sac. The copper should not be used oftener than three times a week. If it is dipped into vaselin or glycerin before applying it, it is not so painful, but quite as efficacious. The sulphate of copper treatment is very painful, and in sensitive people, cocain may be used previous to the treatment; however, I have found that the reaction of cocain is bad, and if it is long continued, it is decidedly prejudicial. If there are any abrasions, ulcerations, or pannus of the cornea, sulphate of copper should not be used, as it will most likely aggravate these corneal diseases. Here nitrate of silver is far more beneficial. The yellow oxid of mercury salve, five or six grains to the drachm, is a favorite treatment of the European oculists, but I have never been able to use it so strong on my patients without the most excruciating pain, with intense irritation, causing the eyelids and ball to be all aglow; indeed, four or five grains to the ounce of vaselin is as strong as my patients will tolerate, and if I use it stronger, I have to combine cocain with it. The formula I mostly use at my clinic is ten grains each of cocain and yellow oxid of mercury to the ounce of albolene. I have the mercury thoroughly ground in a mortar until there are no particles visible, it being thoroughly mixed with the albolene, for if but a very small particle exists not comminuted in the albolene, it will prove an unbearable irritant. The salve seems to be less active after it has been made for a time than when it is first put up. I frequently use it alternately with the silver or copper treatment. Nitric acid is sometimes used, but it is dangerous and is liable to leave eschars and cicatrices, thus irretrievably injuring the lids and eye; if used at all, it should be applied by means of a pine stick dipped into the acid. After the acid has soaked into the stick, the latter may be cautiously drawn across the granules. Charlatans used this treatment frequently, subduing the granules, but as frequently permanently injuring the parts by the cicatrices left.

In pronounced chronic trachoma the most speedy and radical treatment is that of expression of the granulations either by the thumb nails, the trachoma forceps, or toothbrush. In using the trachoma forceps Dr. Knapp's pattern is best; some prefer Prince's. The patient should first be anesthetized, as the operation is so painful that cocain is insufficient. The lids everted, the forceps are applied by shoving one stirrup beneath into the cul-de-sac, the other at the everted margin of the lid, and with the forceps firmly compressed careful traction is made. Care must be taken not to tear the tissues, only sufficient force being exerted to roll out or scrape off the granules. It is the cauliflower growth, excrescences, and hypertrophied papillæ and glands that we thus remove with some of the neoplasms. I have found that it is necessary to make subsequent treatment for weeks and months after the use of the forceps, even after the most thorough use of the instrument; but certainly they cut short the disease as, by their use, a few weeks, generally with application of nitrate of silver or copper, will accomplish as much as could be gained in as many months by the usual treatment without their use.

Of very recent date I have used the stiff brush, (toothbrush). After first removing all the granulations possible by means of the forceps, I then take the toothbrush (cut down short), and with the lids everted thoroughly brush the conjunctival surface until all neoplasms and hypertrophies are removed (the lids appearing thin and pliable). There is not as much reaction from this treatment as one would suppose; but the results are not always satisfactory, for even with the brush in addition to the forceps, I have found it is still necessary to follow up this by a slight astringent and in some cases, from the brush, I have had with the cicatricial contraction, pronounced entropion. In case of pannus, which frequently persist even after the trachoma is cured, syndectomy, as my experience proves, is the most satisfactory treatment; this consists in making an incision around the cornea through both conjunctiva and subconjunctiva about three or four mm. distant from the limbus, and then dissecting the intervening portion up from the sclera to the margin of the cornea and snipping it off by means of the scissors. This girdling the cornea, as it were, cuts off all the

blood vessels of the cornea. The vascular opacity of the cornea immediately diminishes and rapidly disappears, also the neoplastic hypertrophied tissue of the cornea is quickly absorbed and the cornea gradually clears up. The conjunctiva recedes from the limbus upon the globe, the tension is relieved, thus allowing the retrotarsal folds to spring back and the margin of the lids to recover their normal position.

Jequirity.—In very chronic obstinate cases of opacity, *jequirity infusion*, after all other means have been exhausted, may accomplish still more good; but it should be used with caution, as it sometimes produces ulceration of the cornea. It can be used with more safety after syndectomy has been made, for if there be much swelling of the conjunctiva, even though it has been re-attached to the sclera, its attachment will give way and so prevent any pent up pus or strangulation of the cornea.

Inoculation—of purulent conjunctivitis is too dangerous to be recommended, except in rare cases where, perhaps, there is dense, persistent, vascular opacity with plastic infiltration of the cornea, with chronic trachoma; and even then, if the malignant inflammation caused by the inoculation is not carefully guided, it is liable to cause ulceration and destruction of the cornea; but the danger is much lessened if peritomy or syndectomy has previously been made; for as the conjunctiva becomes infiltrated with intense chemosis, the incised periphery near the cornea is loosened, thus avoiding the pent up secretion or engorged vessels, and hence lessening strangulation of the cornea. If there be strangulation, thus impairing the nutrition of this vulnerable part of the eye in its enfeebled state, it is in great peril, for the deadly specific microbe burrows and chisels its way into the cornea, thus causing abscess and sloughing of this part of the eye, for it is the weaker and devitalized tissues always that these germs prey mostly upon. And so I repeat that the operation of syndectomy or peritomy indemnifies or insures the cornea to a certain extent against the destructive force of the inoculation. The effect of the purulency by inoculation is frequently so very striking, clearing as it does, the opacity of the cornea and ridding the lids of all infiltration and granulation, that it is very seductive and alluring; but if one has ever tried it, wrestled with it days and nights, as I have, to prevent its destroying the eye and finally at last having suppuration of the cornea, he will not feel like repeating the experiment.

I remember years ago having a case of most persistent chronic trachoma with dense pannus and infiltration of the cornea which for months and years resisted all treatment. I finally screwed up my courage to try gonorrheal pus. I inoculated one eye and soon an intense inflammation followed; the lids swelled enormously, became fiery red and pus flowed out upon the cheeks; the boy, a Swede of 14, screamed with pain; soon the other eye was attacked and the lad fairly howled with agony, creating a general consternation in the neighborhood. I went to see him several times a day and during the night for a period of more than a week, expecting every hour that the eyes would burst; but my relief of mind and my joy, you may well imagine when the inflammation began to subside without any destruction of the cornea. In this case I had previously made a syndectomy, and although the conjunctiva had attached itself to the sclera and the intervening space was replaced by new tissue, during the intense swelling and chemosis, the conjunctiva gave way again all round the cornea, allowing free vent to the secretion and there was no strangulation. To this I attributed the success of conducting the suppurative inflammation to its happy issue. In this case, the cornea cleared perfectly and the lids were rid of all granulation, and the boy regained good vision with splendid looking eyes.

This was, and probably will be my only case, unless it be as a last resort, after long and faithful trial of all other means, and even then when there is no vision, where there is nothing to lose but everything to gain. However, the jequirity will accomplish nearly as much and with much less danger.

The form of jequirity to be used.—Take eight beans, crush or grind them, and macerate in an ounce of warm water for twenty-four hours. Strain, put up in blue bottles, and keep in a cool, dark place. Of the solution, instill one or two drops into the conjunctival sac, or if a more thorough application is desired, it may be made by everting the lids, and applying the solution by means of absorbent cotton. The effect of the drug thus applied is not manifested until five to eight hours when the symptoms of catarrhal ophthalmia begin. The inflammation continues to increase when it assumes more of the symptoms of purulent ophthalmia, there being more or less suppuration of a muco-purulent nature. Soon there is a false membrane formed not unlike that of diphtheria. If the inflammation thus exerted proves too severe, it may be held in check by the use of hot water; otherwise, no further treatment is necessary, except to keep the lids cleansed by means of absorbent cotton and warm water.

The jequirity infusion will spoil in a short time, especially in warm weather; therefore a fresh solution is necessary. Parke, Davis & Co. keep a solution on hand which I have found quite reliable. This solution is strong, but may be reduced by adding a few drops to as many more of water before applying. If a prolonged action of the drug is desired, one drop of the reduced solution may be instilled into the conjunctival sac daily or every other day for a week or ten days when the eye should be allowed to recover entirely from the effect, and then after an interval of a few weeks the solution may be repeated if necessary.

In treating trachoma we should look well after the hygienic condition of the patient and also to existing provocative influences, such as the errors of refraction, especially hyperopia and astigmatism, also the different forms of heterophoria. Very frequently there is some disease or obstruction of the lachrymal apparatus that has to be relieved or treated ere a cure of the trachoma can be produced. Frequently have I effected a speedy cure of trachoma that had been resisting the ordinary treatment for many months, by simply slitting up the canaliculus and passing a probe into the nasal duct, thereby securing a free drainage of the pent up diseased fluids, relieving the irritation caused by their presence.

Tobacco in all forms must be prohibited in toto; also alcoholic liquors, except when indicated as mild stimulants. General baths give tone and health to the system and are always indicated.

Blank Applications for membership in the ASSOCIATION at the JOURNAL office.

ON PRESERVING EMBRYOLOGICAL MATERIAL.

BY ADOLF MEYER, M.D.

DOCENT IN NEUROLOGY, UNIVERSITY OF CHICAGO; PATHOLOGIST OF THE ILLINOIS EASTERN HOSPITAL FOR THE INSANE, KANKAKEE.

Preparing some work on the development and the anatomy of the brain, I beg to bring the following appeal for coöperation before the members of the profession:

It is necessary to start the work on as broad a basis as possible, and for this reason it can not be done without the active coöperation of the practitioners. It is my desire to show that a large city like Chicago can, notwithstanding its short existence, make up for a long period of preparation with its youthful energy and take at once, as it did in many respects through the Fair, a place in the foremost ranks of scientific centers. This energetic progress shows itself in every line of scientific research, and I feel confident that an appeal for help in promoting our knowledge of the nervous centers will not be in vain.

Embryological material becomes of value only if a sufficient number of stages are collected and displayed in an instructive series of development. Such a museum will, I hope, be one day the pride of Chicago and furnish the best ways of instruction, far superior to book learning and drawings. The preparation of the material is not connected with much inconvenience. It is, however, necessary that certain rules should be observed, which increase the value of the specimens materially.

Very early stages which are sometimes found in the blood-clots of "very profuse menstruations" are best put into a 10 per cent. solution of nitric acid for a quarter of an hour and then into an abundant quantity of 70 per cent. alcohol. If the fixation with nitric acid is not possible, it will be quite sufficient to put the ovum at once into the 70 per cent. alcohol.

This method will answer its purpose up to the fourth month. From the fifth month, however, it will be preferable to preserve the material in Müller's fluid (bichromate of potash 2½ per cent. and sulphate of iodium 1 per cent. dissolved in water). This method is somewhat more complicated, inasmuch as it requires a little more attention. The fetus—in later stages only the head and perhaps the spine—is immersed in a large quantity of the fluid. It is best to open carefully the cranial cavity in order to give direct access to the fluid; the removal of the parietal bones or at least their partial removal will answer best the purpose. On the second and fourth day the fluid should be changed. Under all circumstances the fluid must be abundant.

Preference is given to Müller's fluid in the later stages of embryonic life and in the new-born child, because not only the surface anatomy (convolutions, etc.), is of importance in these stages, but especially the development of the medullary sheaths of the fiber tracts which takes place at different times and affords a most useful help for the study of special tracts.

With regard to the jars, preserve jars of an appropriate size can be obtained in every grocery store. It will not be inconvenient to keep a 5-gallon jug of Müller's fluid and a gallon or two of 70 per cent. alcohol ready all the time.

The specimens should be accompanied by a short note on time of last menstruation, time of beginning abortion or labor, and time of expulsion and further the time when put into the hardening fluid. All the specimens will be duly acknowledged.

It is evident that monstrosities offer much of interest with regard to the nervous system. The same would hold for pathological conditions in children and adults. With regard to the transportation, specimens may be sent for when brought to one of the Chicago down-town offices, or they may be sent to the Kankakee Hospital by express.

Kankakee, Ill., Jan. 27, 1894.

DISLOCATION OF CERVICAL VERTEBRA. DEATH—CASE RECORD AND NECROPSY.

BY G. W. BROOKE, M.D.

ELLSWORTH, OHIO.

Early on Wednesday morning Nov. 29, 1893, I was hastily summoned to visit a neighbor, Mr. Chester Allen, a strong, healthy man, age 50 years, living but a short distance from my residence. I found him in his barn, and learned that he had fallen a distance of about seven feet, through a hatchway, to the floor beneath. As near as could be ascertained, the accident occurred about three-quarters of an hour before. He was insensible for a time after he fell; how long a period he was unable to say, and when consciousness returned, he found that he was entirely helpless, and unable to make himself heard. He complained of intense pain in his neck, a few inches below the occiput, and on examination, I found complete paralysis, and loss of sensation below the seat of injury; heart's action very slow and feeble; pulse imperceptible at the wrist; extremities cold. Without waiting to make further investigation, he was immediately taken to the house, and on careful examination, the neck was found to be dislocated, the head turned considerably to the right side, and the deformity apparently about the fifth cervical vertebra, and very marked. As soon as the diagnosis was clearly made, I grasped the head firmly with both hands, and used all the strength I could command by way of extension, at the same time gently rotating the head so as to bring it in line with the body, as the extension was continued. This procedure occupied but a moment of time, and one of the friends who was bending over the patient, assisting me in the operation, says that he distinctly heard a grating sound, when the dislocation was reduced.

The moment the dislocated vertebra was put in position, the patient could see; before this he was entirely blind. He also expressed himself as feeling much relieved by the operation; extension, however, had to be continued almost constantly, or the pain in the neck would recur with great severity.

Vigorous efforts were now made to warm the patient, and bring on reaction—stimulants and heart tonics were administered liberally, the patient swallowing fairly well, and as the pain in the neck grew worse, morphin was used hypodermically. In about six hours reaction was fully established; the pulse beating 50 per minute, strong and regular, respiration from 10 to 12. The thoracic and abdominal muscles, however, were unable to participate in the respiratory movement, so that respiration was very imperfectly performed. The patient could now speak audibly. He took sparingly of nutritious liquids, which required some care in swallowing. His mental faculties were not in the least disturbed by his unfortunate condition, and he was able to transact business as intelligently as though nothing had occurred.

The case continued in this condition for about eight days, when the pulse became gradually more frequent, and weaker, the breathing more hurried, the inability to swallow greater, prostration more marked, sleep more fitful and disturbed. It is needless, perhaps, to say that the catheter had to be used. The kidneys, after the first twenty-four hours, acted freely, and so continued while he lived. His bowels moved freely, in response to cathartics and enemas, the sixth day after the accident, and continued to move, passively, after this, up to the time of his death.

On Thursday evening, December 7, the unfavorable symptoms all became more aggravated, the heart's action was exceedingly feeble, and the patient himself was conscious that his dissolution could not be delayed much longer. He died at 1 P.M. the following day.

When I first explained to him the very serious character of the injury he said to me: "I am in your hands. Do with me and for me as you may think best."

During the entire time of his existence, after he rallied from the effects of the shock, his intellect and mind were as active and bright as when in health.

I have, in the army and elsewhere, seen many cases of injury and death from violence, but never before had a patient that possessed such a remarkable fund of fortitude and patient endurance as Mr. Allen manifested under such painful and distressing circumstances.

He was one of the bravest, best and most philosophical patients that I ever had. In addition to this, his Christian profession, faith and character were from the time of the accident to the close of his life, made more manifest and more deeply intensified, as he approached the end.

At the autopsy, held on Monday the eleventh, the following named gentlemen were present: Drs. Wagner, Hughes and Brooke, Messrs. Kirk, Ressler and McNeilly, Dr. Wagner making the examination. All of the cervical, and one or two of the dorsal vertebræ, were removed. It was found that the dislocation involved the fifth and sixth cervical vertebræ, the attachment between these bones being completely torn asunder, and at the time of the injury, the vertebræ were widely separated, but *now* in proper position. The ligamentum nuchæ was lacerated a short distance from its attachment to the spinous process of the vertebra; considerable clotted blood was found near the seat of injury in the muscular tissue, adjacent to the spinal column. On examination of the cord, the membranes were found ruptured, at a point corresponding with the injury to the spinal column. The cord at this point and below as far as examined was softened, and completely disorganized. The line of demarkation between the softened cord, at and below the injury, and its firmness and elasticity above, was very distinct and well marked, showing plainly that the vitality of the cord, below the seat of injury, was destroyed when the accident occurred.

OVARIOTOMY IN THE AGED.

Read before the Mississippi Valley Medical Association at Indianapolis.

BY RUFUS B. HALL, M.D.

PROFESSOR OF CLINICAL GYNECOLOGY, MIAMI MEDICAL COLLEGE. CINCINNATI, OHIO.

To define clearly the limits of my topic, ovariotomy in the aged, I will take the Biblical division, that of three-score and ten years, and confine my remarks to patients who are 70 or more years of age. It is generally conceded as true, that any operation upon the old does not promise as good results as the same operation would upon the young, or patients in middle life. Especially is this true, in reference to all abdominal operations necessitating a hard strain upon the system from shock, or from traumatism to vital organs during the operation, as we not infrequently have in the removal of large ovarian tumors. Most writers, in reporting their operations upon the old women, and most textbooks, would have us believe that women 70 years old and upward are exceedingly bad subjects for ovariotomy. I am strongly inclined to the opinion that this is an error, and it is for this reason that I bring the subject before you at this time. Taking all of the reported cases of ovariotomy at my disposal, performed on women of 70 or more years of age, the mortality is very low. Especially when we take into consideration the complications, which necessarily had to be overcome in making the operations, with the facts that a large majority of these operations were delayed operations with many adhesions, large tumors and lowered vitality. The death rate is not greater in my judgment than usually follows the same delayed class of operations on women between 40 and 50 years of age. It has been asserted by one of the most distinguished writers upon this subject, that the last word on ovariotomy has been uttered; that the mortality has been reduced to a minimum, and the technique completed. While this may be true, I am inclined to believe that there are some points in reference to operations upon the aged, on which the profession are not united. It is possible that some operations upon the aged have not reached us through medical literature, yet we must believe that most of them have, and if we take them as our guide in making our deductions we certainly can not regard ovariotomy upon this class of patients as dangerous an operation as is generally supposed. I have had but three ovariotomies upon women above 70 years of age. In each of the first two cases, the friends of the patients hesitated to have the operation made on account of the advanced age of the patients, just as long as it could possibly be postponed. In each of these, the operation was deferred until the patient was in extremis.

Case 1.—Mrs. K., age 70, residence South Salem, Ohio. The operation was reported in full at the Ohio Medical Society in 1887, and can be found in the Transactions of that Society for that year. She had been conscious of the existence of the tumor for more than two years. Owing to an accident which occurred some forty years before the operation, injuring the patient's hip, she had led a very sedentary life, and had been considered an invalid for more than thirty years. For three months before my first visit she was unable to leave the room. When I first saw her Aug. 26, 1886, she was sitting half reclining in a chair, which position she had been compelled to keep for more than two months. Her pulse had been frequent and feeble for many years, and at that time as she reclined in the chair the radial pulse was barely perceptible. For two months she had anasarca of the legs, which were twice their natural size below the knees and from an abrasion upon each the dropsical fluid was discharged in great quantities. It was decided to tap the cyst with the hope of relieving her. This was done and four gallons of fluid withdrawn. This relieved her urgent symptoms somewhat for a short time, but at the end of four weeks she was again unable to rest in bed and was compelled to assume a sitting posture. She now insisted upon an operation which was performed Sept. 23, 1886. The cyst was firmly adherent to the whole anterior wall of the abdomen, as well as to the omentum, which had to be divided between successive ligatures. The posterior surface of the cyst was adherent to the small intestine and three separate coils of intestine of about one foot each were removed from the cyst with great difficulty. The bladder was spread out over the front of the cyst like a great fan and was very firmly adherent and had to be dissected from it. The hemorrhage was severe and a great number of vessels were tied. The tumor and contents weighed fifty-nine pounds. Her recovery was uninterrupted and on the twenty-fourth day she was able to leave her room, and is now at the age of 77 years, enjoying good health.

Case 2,—which has also been reported in full in the *Lancet Clinic*, is Mrs. C., age seventy years and six months. Aug. 31, 1891, while alighting from a street car she slipped and fell, causing a sharp pain in the abdomen, yet she was able to walk a short distance to her home. Two days afterwards she called her family physician, Dr. George Coner of Cincinnati, who found her suffering from acute peritonitis. She gave a history of having some abdominal enlargement for the past six months The Doctor had no difficulty in detecting the tumor which was irregular in outline. The abdomen was very much distended. I was asked to see her in consultation the same day, July 2, and had no hesitation

in saying, from the history of the case, that the cause of the peritonitis was a ruptured ovarian tumor. An immediate operation was advised and urged, but was refused by the patient and her friends. I was again asked to see her on July 13. The abdominal distension was not so marked, yet it was evident that the patient would not long survive unless she could be relieved by an operation. So little encouragement could be given at that time, if the operation was made, that the friends were yet undecided whether to have it made or not, but consented, on the evening of July 16, to have the operation, and it was made early the following morning. At that time the patient had a pulse of 138 and a temperature of 103 degeees. The exhaustion was very marked and she had the appearance of approaching dissolution. When the abdomen was open, a gallon or more of thick dark-colored fluid escaped. The cyst which was yet about the size of an adult's head was removed. One large cyst cavity which had an exceedingly thin wall had a long rent in it and was collapsed. A tumor of about the size of a cocoa-nut was removed from the opposite side. There was septic peritonitis for eighteen days before the operation was made. The cavity was thoroughly irrigated and drained. She made an uninterrupted recovery and was able to leave her bed at the end of the four weeks.

Case 3.—Mrs. H., age 72 was seen, in consultation with Dr. Willard A. Hall of Chillicothe, Ohio, May 15, 1893. The patient had been conscious of the existence of some abdominal enlargement for about six months. She had been an invalid for more than two years suffering from bronchitis, and attributed the abdominal enlargement to dropsy. She was quite surprised when informed by her physician of the presence of a tumor, and asked to have the tumor removed as soon as possible. The patient was a feeble woman, looking much older than she really was. The abdomen was well filled and the tumor had caused some discomfort from pressure for the past five or six weeks yet she had never suffered any pain from its presence. Ovariotomy was made May 23, 1893, and a multilocular cyst removed. There were no adhesions; the cyst and contents weighed thirty pounds. The patient recovered without a single bad symptom.

Ovariotomy, when made by men thoroughly trained in abdominal surgery, and in hospitals equipped for the work, shows the lowest mortality of any of the capital operations. Judging from the low mortality of the reported cases, and from the work of the best-known operators, I am constrained to believe that ovariotomy in old women, if the kidneys are healthy, is as safe as in middle life.

154 W. Eighth Street.

IMPROVED SURGICAL ENGINE AND NEW INSTRUMENTS FOR BONE OPERATIONS;

INCLUDING A SPIRAL OSTEOTOME FOR OPENING THE SKULL IN BRAIN SURGERY.

BY M. H. CRYER, M.D., DD. S.

PHILADELPHIA, PA.

I have read with great interest the paper on new devices for cutting bone, by Dr. De Vilbiss, in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for Dec. 30, 1893, and though not agreeing with him in all things, heartily support his advice to the profession to the effect that there should most certainly be insisted on a better mechanical education among surgeons in general.

Too often, as Dr. De Vilbiss states, the operator does not even properly understand the use of mallet and chisel, and naturally condemns a more complicated though far superior means.

Dr. De Vilbiss' paper gives me the impression, however, that he is not familiar with the most recent surgical engines and their appliances. The engine the Doctor describes is in all its essential points similar to one introduced here some ten years ago, being light and made to fasten to the operating table or stool. It is turned by a crank, and the power conducted by means of a flexible cable many times stronger than the one used in the dental engine.

There are many objections to engines of this character. They lack sufficient power, and the limited flexibility of the cable will not allow the hand-piece to be carried in all directions, or to all parts of the body. There is also more or less vibration and backlash of the instruments, when in use, which greatly interfere with delicacy of touch.

In the *Dental Cosmos* for September, 1893, there is published a paper read by me at the World's Columbian Dental Congress of Chicago, on Aug. 15, 1893, giving the essential features of a surgical engine to meet practical requirements, and the development of the instrument, from the ordinary dental engine, through various machines, to the one I had the pleasure of introducing at the surgical clinics of that Congress; and with which demonstrations were made showing its range of applicability in bone surgery, especially in that of the head.

Since that time, operations have been successfully performed with it at the Hospital of Oral Surgery by Prof. J. E. Garretson, M.D.; in the Medico-Chirurgical Hospital by Prof. E. Laplace, M.D., and at the Orthopedic Hospital, in an extensive operation for the removal of the Gasserian ganglion, by Prof. W. W. Keen, M.D., all of Philadelphia.

A machine for operations of this kind must have motive power sufficient to give its revolving instruments a high velocity, and maintain its speed under varying pressure. In my paper, alluded to, I advocated a minimum speed of from 2,000 to 3,000 revolutions of the cutting instruments per minute; later experience has convinced me that better results are to be had with a speed of not less than 4,000 to 5,000 revolutions.

The hand-piece and chuck should be light, capable of easy adjustment, and of such arrangement that the instrument used can be freely directed to any part of the body. There should be no appreciable vibration, as it interferes with tactile recognition of the character of the tissue being cut. The device for clamping instruments in the hand-piece should permit of easy and quick exchange and they must be firmly held. The hand-piece must be easily taken apart to be cleaned and sterilized. The source of the driving power is of little import, but should be under perfect control and insure steadiness and uniformity of speed.

After using various means and devices for cutting bone, the following engine (Fig. 1), embodying suggestions from the writer, was made by the S. S. White Dental Manufacturing Co., Philadelphia, Pa.

The general appearance is similar to what is known as the cord dental engine, but it includes some distinct special features; it is many times stronger and the mechanism is of the highest grade. It will be seen that the engine is driven by hand. The crank, turning a set of gear wheels, made so true that they run noiselessly. This turns the driving wheel which is proportionately heavy, giving high speed and steadiness to the cutting instruments; near it is a pulley, T, that carries the driving cord which is likewise strong, and so arranged on the pulley wheel as to bring it into contact with more than the usual amount of the periphery of the driving wheel, giving it a grip which prevents slipping without producing the defect of an extra tension on the cord. The upright shaft has an arrangement, B, for tightening the cord and in the arm at H there is an automatic appliance for maintaining the tension

of the belt while in motion. The hand-piece is large and its arrangements for carrying various instruments are very good. It has a space, P, at its point for adjustment of different guards, etc. By removing two thumb-screws, L and M, it can be taken apart to be cleaned and made thoroughly aseptic. The arrangement of the arm and the wrist gives great lati-

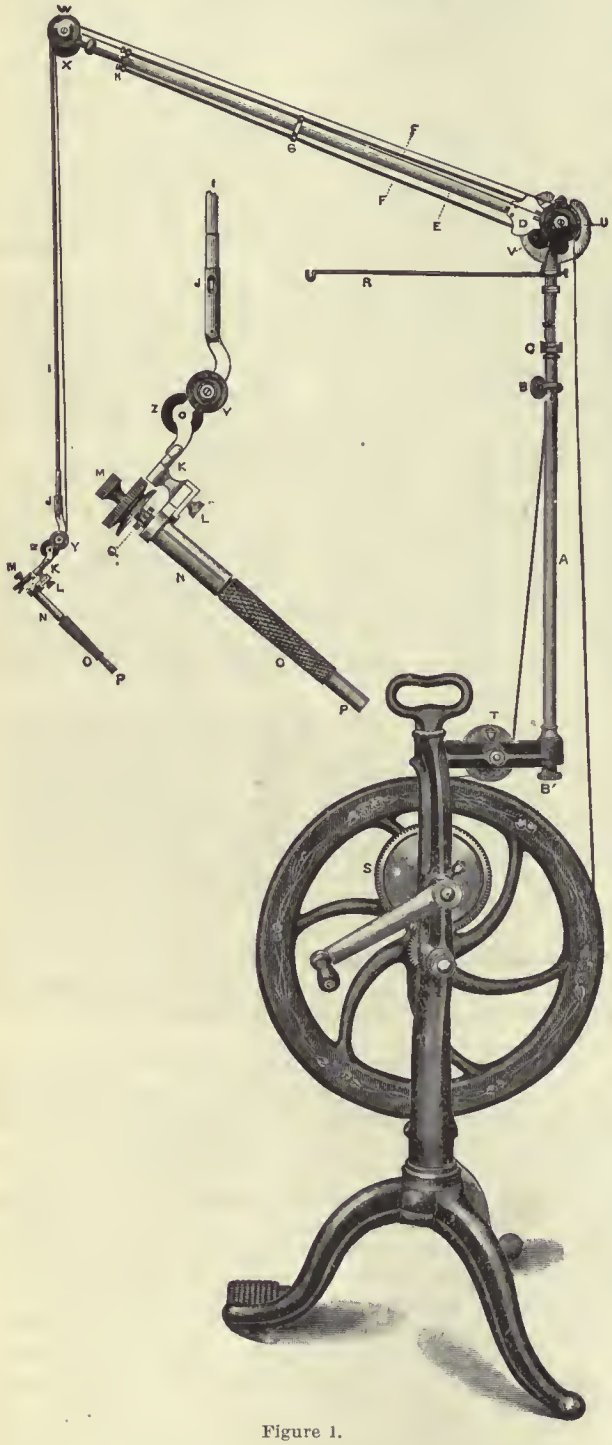


Figure 1.

tude for position and movement of the hand-piece, as great as that of the human arm and hand, while at the same time the machine may be firmly held in one position. A velocity of from 10,000 to 12,000 revolutions per minute can be attained with great steadiness and regularity of speed.

A smaller engine and hand-piece is made on the same type, and driven by the foot of the operator or that of an assistant, such an engine being all that is required for nasal or other light bone operations.

It is evident that Dr. De Vilbiss and the writer have been working toward the same end, to improve bone-cutting appliances. With an earnest desire to offer any assistance to the profession, of which I may be capable in this line, I wish to describe some of the most important instruments that have been made for the above engine.

Figs. 2 and 3 were designed about a year ago for making fenestra in the skull to furnish access to the brain in operations for removal of clots, tumors, etc., and for internal nerve resections.

The superiority of the circular saw, run at high speed by the surgical engine, over the usual method of chisel and mallet has been abundantly demonstrated. Fig. 2 represents the end of the hand-piece with circular saw one inch in diameter and one-sixteenth of an inch in thickness, inserted for use. The guard, F, is attached to the end of the hand-piece; the thumb-screws, B, are used to adjust and fix the guard to define the depth the saw is to cut.

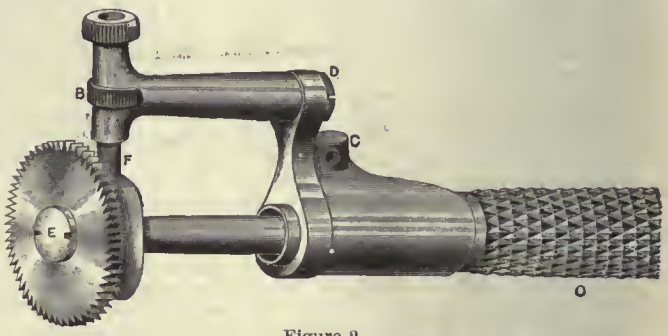


Figure 2.



Figure 3.

Fig. 3 is a guard that can be used with the saw of Fig. 2 instead of guard F. The foot-piece of the guard, in which there is a slight groove, passes below the saw; the curved shaft is thinner than the saw and passes up back of it and is attached to the point of the hand-piece through the shank at D, Fig. 2. The object of this guard when in position is for it to be passed through a small, previously-made opening in the skull, then by putting the saw in motion the guard and saw are carried in the direction in which the brain case is to be cut. The guard pushes the dura from the boneand passes between the saw and the membrane. The objection to this device is that none but nearly straight cuts can be made.

The first of these appliances, Fig. 2, was used successfully last October by the writer, in making the initial bone section in an extensive operation performed at the Orthopedic Hospital by Prof. W. W. Keen, for the removal of the Gasserian ganglion.

The advantage gained by the use of this saw was the rapidity with which it cut, yet perfection seemed lacking, in that the mallet and chisel had to be called into requisition for supplementary work. This case, as well as a series of carefully conducted experiments upon the cadaver shows, however, that all danger of wounding the dura is not absolutely eliminated, even by the use of the guard which is attached to the mandrel of the saw to prevent the penetration of its cutting edge beyond a previously determined depth. The danger exists in the fact that brain-cases vary in thickness, and even the individual skull is thicker in some parts than others, thus making it impossible to accurately fix the guard.

A number of experiments have been carried out by the writer, with the hope of overcoming the danger of wounding the membranes, either with the saw or in the final cutting of the bone with the chisel and mallet, the latter adding materially to the shock, and not being free from the possibility of puncturing the brain.

The following instrument, "Spiral Osteotome," was described by the writer in the *Dental Cosmos* for January, 1890, and the *Medical News*, Jan. 6, 1894, substantially as follows:

After many trials of variously constructed burs, the following arrangement was hit upon, which seems to completely fulfill the requirements. The cutting portion of this "spiral osteotome," (Fig. 4) is one-half inch in length, one-eighth inch in diameter, and tapers slightly from base to point. By three spiral grooves, each having a turn of 120 degrees through the half inch from base to point of the cutting end, it is divided into three blades, giving it an appearance somewhat similar to a twist-drill. The effectiveness of these blades is enormously increased by a spiral screw, forty-four threads to the inch, cut around the blades of the instrument. This device necessarily adds twenty-two teeth to the edge of each cutting blade. The individual teeth are so arranged with reference to one another that the cut made by one tooth is overlapped by that of the one next following, while the spiral arrangement of these teeth, in connection with the three spiral grooves, makes the bur perfectly self-cleaning, the *debris* being rapidly thrown out backward by the revolution of the instrument. The point of the bur when in use is guarded by a rounded button-like attachment, connected with the nose of the hand piece by means of a shank and collar, as shown in Fig. 5 at A. The free end of the bur is dowelled into a seat in the guard, B, in which it revolves, which steadies the whole arrangement when in use, gives an added rigidity to the bur-shank, and holds the bur and guard in permanent relationship to each other.

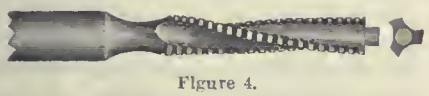


Figure 4.
Twice the size of cutting-tool.

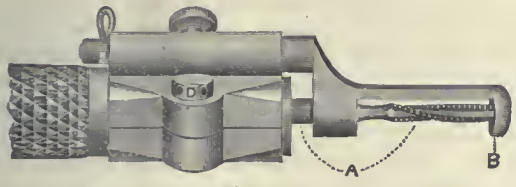


Figure 5.
Full size of instrument.

It will be seen that the principle involved in the instrument described is simply that of a saw arranged to cut in a line with the axis of the shaft of the bur, and not at right angles to it, as in the circular saw. Such an arrangement allows of cutting in any direction and upon curved lines. This feature is especially valuable in resections of the brain-case, inasmuch as fenestra of any desired shape or size may be speedily made.

In operating for the removal of a portion of the brain-case with the spiral bur after division of the soft tissues by the scalpel, a small opening is first made with a trephine, Fig. 6, mounted in the engine handpiece; this trephine has a diameter of five-sixteenths of an inch, and is passed completely through both tables of the skull, and the button of bone removed. There is no danger of injuring the dura with the trephine if it be carefully used. The opening thus made affords a means of entrance for the cutting bur, which, with its protecting guard, is next inserted in the opening, and the section made along the lines previously determined, by running the engine at high speed and forcing the bit laterally in the direction desired.

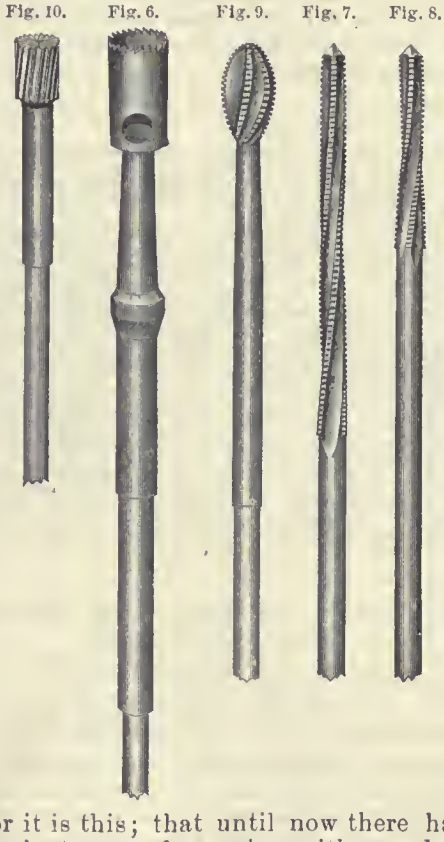
The button like guard at the point of the bur absolutely prevents injury to the dura, which is pressed or dissected away by it from its attachment in the line of the cut as the instrument progresses.

The detailed description here given is of an instrument that I have called a "spiral osteotome," and is designed for the special operation of opening the brain-case. Simple modifications of this instrument have been made for other operations upon bone. The same instrument as Fig. 4 with a rounded end and longer shaft, made in pairs of right and left, are excellent for removing diseased or nodulated bones from the nasal cavities. The great advantage of these side cutting instruments, especially in the nose, is that they do away with the to-and-fro movement of the saw and obviate the danger of cutting or injuring other tissue. The to-and-fro movement of the saw, driven by an engine through the connection of a pitman wheel and bar, was used by the writer some twelve years ago, but this character of a saw was not found to be satisfactory.

Figs. 7 and 8 are for resection of long bones, as of the femur in any part of its length, or even at the head while in the acetabulum. This form of instrument makes very fine drills. Burs of various sizes and shapes (Fig. 9) are made by increasing the number of spiral tooth blades in definite relation to the size of the cutting instrument required.

Fig. 10 represents a bur five-sixteenths of an inch in diameter. The cutting end is somewhat convex, and sides parallel, which prevents the instrument from binding. Smaller instruments of the same character are also used in mastoid trephining; when the opening made is not wide enough it can be enlarged by the side cutting portion of bur.

In the last paragraph of Dr. De Vilbiss' paper he says: "It is true, in making the mastoid operation the use of the drill has been condemned, but the



reason for it is this; that until now there has been no convenient way of running with speed a drill large enough, with precision as to depth, to make a sufficient opening." Prof. Garretson has used an engine before a large class in his clinics, and in his private practice, for at least fourteen years, which drives various sized drills and side-cutting burs up to the size of three-eighths of an inch in diameter, at the rate of from 8,000 to 10,000 revolutions per minute. Guards have also been used with some of the drills, but they are usually in the way. A few weeks ago the writer removed a diseased portion of the mastoid process of the temporal bone down to the membranes of the brain, depending only on tactile recognition. For opening into the frontal, maxillary, or any other sinuses, or, in case of osteomyelitis, guards would be very much in the way, and as no two bones are of the same thickness the guards are practically useless.

The secure fixation of the cutting instrument in the hand-piece is an obvious necessity, as any failure in this respect during an operation might possibly lead to disastrous results. In the improved surgical engine here described, the instruments pass completely through the hand-piece and are fastened in by the thumb-screw, Fig. 1 M. These chucks are made of two kinds, one to hold instruments of the size of the ordinary dental burs; the other, and the more important one for surgical work, holds instruments that are many times larger and longer in the shafts, and are held absolutely secure.

To accomplish the drilling or trephining through bones into cavities, without injuring the tissue below, the hand-piece of the engine must be free from all vibration or interference of any kind. Then the educated hand of the surgeon will distinguish the depth and character of tissue being cut.

The writer would discard all mechanical guards for drills, burs and trephines, and would indorse the following from Dr. De Vilbiss: "The surgeon must educate his hands how to execute that which he theoretically knows."

A number of the *Medical News* (April 23, 1893,) contains an article upon

"Closure of the Ear by Growths of Bone; Removal of Bony Obstructions; Cure of Otorrhea and of Deafness. Three Cases; Description of Operations, Instruments, etc." By Robert Barclay, A.M., M.D., St. Louis, Mo., in which, speaking of past and present methods for the surgical treatment of these cases, he says:

"To those afflicted with the disease in former days, grave must have been the prognosis declared, to compel, as it did, their submission to the intense and prolonged agony inevitable upon the surgical operation before the days of anesthesia and perfected mechanical arts.

"Consider, on the other hand, the manifold advantages of our modern method of dealing with such aural bony growths by means of the dental engine. In operating with this instrument, the hand-piece may be held and guided like a pen, skill and attention being addressed principally to directing the reamer or bur, inasmuch as this operates with but slight manual pressure, mainly by the rapid revolution of its cutting edges. A little experience in the use of the dental engine and drill is sufficient to educate the operator in determining by touch and resistance the nature or condition of the tissue upon which the tool is operating, thereby affording another and more reliable indication as to the desirability of extending or terminating the process of operation at that particular spot. With this there is a minimum of risk of injury to contiguous or neighboring healthy parts through direct or through transmitted force. In careful hands this instrument can not slip away or plunge. No concussion, no cracking, no roughness, no projecting spiculæ, no splinters of bone,—only a smooth, clean cut surface marks its trail."

THE DIAGNOSTIC VALUE OF EHRLICH'S DIAZO REACTION.

Inaugural Thesis read before the Minnesota Academy, Nov. 1, 1893.

BY CHAS. L. GREENE, M. D.

PROFESSOR OF SURGICAL ANATOMY IN THE UNIVERSITY OF MINNESOTA.

More than ten years have elapsed since Ehrlich announced the discovery of an urinary test which should determine the presence or absence of typhoid fever; yet up to this time the members of the medical profession of our country have not determined its proper place in our diagnostic armamentarium.

The importance of such a discovery, if genuine, makes this apathy seem at first glance almost inexplicable, but reference to the literature upon the subject offers a ready and sufficient explanation. It would seem a very easy matter for scientific observers to arrive at harmonious results in the performance of a simple experiment terminating in a definite color reaction, yet we find in the published accounts of these observations, statements so contradictory and confusing as to lead one to believe that scientific accuracy in this department at least is little better than a name. Carelessness in diagnosis and utter disregard for the instructions of Ehrlich, as to the manner of making a test, account in a considerable measure for the discrepancies of statement, but it is perhaps the failure to insist upon the appearance of the proper color in the reaction which has caused most of the error.

The discovery of this reaction was in a measure accidental, Ehrlich being engaged at the time (1882) in an effort to isolate some of the unknown aromatic bodies of the urine by the use of the diazo compounds, substances so named by Peter Griess, their discoverer, who obtained them by treating amido derivatives of the hydro-carbons with nitrous acid in a nascent state. These bodies, extremely unstable, enter readily into combination with a large number of substances. The chemical chosen by Ehrlich as being cheap and easily obtained was sulfanilic acid, which when treated with nitrous acid in a nascent state, forms in solution diazo-benzine sulphonic acid. The following are the formulæ at present recommended:

Solution 1.	Hydrochloric acid C. P	50.
	Aqua distillata Q. S.	1000.
	Sulfanilic acid ad. sat.	
Solution 2.	Solution sodium nitrite	½%
Test solution.	Solution No. 1	40
	Solution No. 2	1.

Mix.

This last solution should be freshly made each day. Solution No. 2 should be kept in a black bottle and in a cool place, being renewed at intervals of thirty days.

Ehrlich's original instructions have been modified somewhat and he now directs that, before testing, the urine should be diluted with absolute alcohol in the proportion of one volume of the former to five or six of the latter, then filtering and adding test solution to filtrate, lastly adding an excess of ammonia. For delicacy and greater rapidity of work, however, the method of Chas. E. Simon is much to be preferred, and has been used in most of the tests described in this paper. It is applied in the following manner:

Equal parts of the test solution and urine are thoroughly mixed in a small test-tube, then 1 or 2 c.c. of ammonia water are allowed to flow gently from a pipette down the sides of the tube so as to overlay the mixture. If the reaction be present, there appears at the zone of contact a beautiful colored band, and this color is apparently the rock upon which most observers have split. It is best described as carmine or blood red. Please note, particularly, that it is not yellow nor yet orange, nor should there in the opinion of the writer, be any material admixture of these colors, for were this rule adhered to order would arise from chaos, and we would not find an observer like Rutimeyer stating that the reaction is almost invariably present in a certain disease, and wrecking his observation by adding that the characteristic reaction in such cases is a yellow color. Another possible source of error arises in the presence of an excess of phosphates, the addition of a few drops of acetic acid often bringing out strongly a color reaction previously indistinct.

As to the diseases in which the reaction occurs, one can only say that the reports of the most careful and scientific observers including Ehrlich, himself, show the reaction to be present in typhoid, pulmonary tuberculosis and the exanthemata, while other observers have reported it as being present in practically every disease known to the medical profession. In view of these discrepancies of statement, therefore, this paper will be based absolutely upon the writer's own experience; as shown by the accompanying list of cases in which careful and painstaking tests were made with the sole object of ascertain-

ing the value or worthlessness of the reaction in diagnosis. The urines of about two hundred and fifty cases have been carefully examined with fairly uniform results as the following tables will demonstrate. Care has been taken to use only *fresh specimens* and a fresh and reliable test solution exactly measured. No oranges or yellows have been recognized, a well-defined carmine or blood red band being insisted upon in all cases. So, also, doubtful diagnoses have been excluded. What, then, is the result and what the inference to be drawn? We may properly dwell

TABLE I.

	Cases.	Plus.	Minus.
Albuminuria—Pregnancy	6	0	6
" Chronic nephritis	12	0	12
" Cystitis	2	0	2
" Urethritis	5	0	5
" Oxaluria and lithemia	6	0	6
Pleurisy	2	0	2
Tetanus (fatal)	1	0	1
Malarial intermittent	1	0	1
Acute rheumatism	4	0	4
Pyemic abscess of lung	1	0	1
Lobar pneumonia	2	2	0
Broncho pneumonia	1	0	1
Tuberculosis pulmonary	25	23	2
" of prostate	2	0	2
" of hip joint	2	2	0
Necrosis of long bones	2	0	2
Measles	1	1	0
Rotheln	1	0	1
Scarletina	3	3	0
Erysipelas	2	2	0
Syphilis—second stage	6	4	2
" —third stage	5	1	4
Septicemia puerperal	2	2	0
Chronic rheumatism	4	1	3
Chronic constipation	6	0	6
Alcoholic neuritis	2	0	2
Hysteria	4	0	4
Epilepsy	2	0	2
Leg ulcers (varicose)	4	0	4
Fractures long bones	5	0	5
" skull	2	0	2
Burns, severe	2	0	2
Gunshot wounds aseptic	2	0	2
Morphin poisoning	1	0	1
Sciatica	2	0	2
Cirrhosis	2	0	2
Simple enteritis	3	0	3
Angio neurotic edema	2	0	2
Vulvitis and vaginitis	2	0	2
Orchitis gonorrheal	1	0	1
Valvular heart disease	6	0	6
Quinsy	2	0	2
Typhoid, first to middle third week	19	18	1
Normal urines	20	0	20
	187		

for the most part upon its relation to typhoid fever, and I wish to emphasize the fact that in nineteen early cases diagnosed by general symptoms as typhoid the reaction is found to be present in eighteen. In the one case remaining, the diagnosis was changed to malarial fever. In eighteen out of nineteen cases, therefore, the reaction was present, and allowing for possible error in diagnosis we may fairly claim that Ehrlich's reaction is uniformly present in this disease. It was found as early as the fourth day and as late as the end of the third week. Its intensity apparently keeps pace with the virulence of the infection and it will probably be found to reappear in true relapse. It is quite possible, therefore, that its intensity and persistence may give a hint as to our prognosis. You will note, also, that in twenty-five cases of pulmonary phthisis it was present in twenty-three.[1] It must be stated, however, that these cases were for the greater part advanced in the third stage. In such advanced cases, therefore, the reaction may be said to be constant; the two cases of hip joint disease were far advanced and there was considerable septic intoxication. It may easily be that the same element of sepsis was acting in the cases of advanced phthisis before referred to. In two well marked cases of tuberculosis of the prostate in which diagnosis was confirmed by the demonstration of bacilli in the urine the reaction was absent. The relation of the reaction to tubercular diseases must be predicated upon a far more careful and extended series of diagnoses and examinations than are available at the present time. Proceeding to the exanthematous diseases we note its constant presence; also its occasional presence in tertiary syphilis and its still greater frequency in the secondary stage. Here, in fact, an almost typical reaction was obtained in every case examined, though only four of the six were admitted to the table as being absolutely above suspicion.

It is interesting to note the presence of the reaction or one indistinguishable from it in diabetes mellitus, due to action of the acid upon glucose.

Its absence in a well marked and fatal case of tetanus was somewhat surprising and the fact that the cases of malaria, acute rheumatism, and the simple diarrheas failed to show it is certainly of diagnostic importance. Septicemia does, and lobar pneumonia may give, the reaction.

In view of these facts, let us discuss at this time more particularly the value of this test in the diagnosis of typhoid; that disease of which Jaccoud has spoken as "being to-day one of the most difficult of medical problems." We seem really to have made but little advance since the day of Louis so far as our means of diagnosis are concerned. Consider, for a moment, a few of the prominent symptoms which we now hold to be diagnostic; first, the prodromal symptoms; often difficult to elicit, inconstant and indefinite to the last degree; then that "characteristic" temperature chart, so beautifully demonstrated in the text-books, but of which a typical case will rank almost as a curiosity in the wards of our Northwestern Hospitals; or, take the abdominal tenderness and gurgling symptoms which may exist in any diarrheal affection; the enlarged spleen, not always so easy to demonstrate as the text-books would lead us to imagine in a disease so frequently associated with tympanites and, moreover, common to malaria, tuberculosis, pyemia and typhoid; a rash which does not appear until the eighth or ninth day, somewhat variable and elusive in its manifestations and lacking in 20 per cent. of our cases. Even the characteristic bacillus fails to give us that positive aid in diagnosis which we might reasonably expect, for even Sternberg admits that none but bacteriologic experts can, even with reasonable certainty differentiate it from its compatriots, either by the simpler method of staining and direct microscopic examination or by more elaborate culture methods. Indeed, no better evidence of the paucity of our diagnostic resources could be produced than is to be found in recently published articles in our medical journals upon this topic. Montifusco considers a local rise of temperature in the region of the right iliac fossa, spleen and kidneys to be of the utmost diagnostic importance, Filipovitch and Skib-

[1] See supplementary remarks.

nevski have noted as peculiar to this disease a certain induration and yellowish tint on the exposed plantar and palmar surfaces, while Baruch believes that diagnosis may be predicated upon the resistance of the rectal temperature to a bath of 75° F. continued for fifteen minutes with friction. Probably almost any medical man reading these articles would be inclined to put these statements to the test when occasion might offer, yet it is unlikely that they have a fractional part of the importance of the diazo reaction. Are we then so well equipped as to rightly throw aside a means of diagnosis which seems to be the equal of any we now possess in positive value, and superior as a practical negative sign? For while the writer would not claim that Ehrlich's reaction is pathognomonic of typhoid, he nevertheless feels safe in saying that any case in which this does not appear should not be called typhoid, and if further experimentation shall continue to show that the reaction is absent in malarial fever, simple febrile diarrheas and acute rheumatism, its claim as a valuable aid to differential diagnosis will be established.

Please note, also, that the reaction may precede the roseola by full five or even seven days, a point of the utmost importance to patient and physician.

One is prepared to hear the reaction denounced as valueless because it is found in a considerable number of diseases, but such a criticism is both weak and unfair, for no other antemortem sign of typhoid fever is peculiar to it alone, and we should not deny the value of the diazo because it in a measure follows this general rule of our symptomatology. No other sign is more definite and constant. Shall we deny the importance of albuminuria as a symptom, because it is incident to a variety of pathologic conditions? We should not insist that our reaction must differentiate typhoid fever from all other diseases, before admitting its value as a clinical sign; on the contrary we ought to give it due credit for the large amount of assistance which it bids fair to give us.

We may fairly hope that it will be of great service in differentiating typhoid from malaria, acute rheumatism and the simple fevers with diarrhea. Opportunities for testing the reaction of appendicitis have not yet presented themselves to the writer.

To sum up, then, this much neglected reaction gives us in typhoid fever much positive, a considerable amount of differential, and a very large amount of negative information. It is not in accord with the high standing of our practitioners in this Section that this method is not at the present time on trial in all of our hospital wards, and without asking that you accept these views as your own, the writer would earnestly urge all present to make use of the test, feeling confident that their trouble will be well and fully repaid. Materials are cheap and easily obtained, the formulæ are practical and simple, but to obtain good and uniform results the following rules should be strictly observed: 1, *Freshly passed specimens of acid urine must be used*, decomposed urine being discarded, and all alkaline or neutral urines acidified.

2. No color but red should be accepted.

3. The test solution should be freshly prepared for each day's use and measured with extreme care.

4. Sodium nitrite solution should be renewed frequently and kept from light and heat.

5. Finally, and most important of all, the exact method of procedure must be carefully followed out *in every detail* on the lines heretofore laid down. One might add, be absolutely certain of your diagnosis before you criticize the test. For it has again and again proven the error of a hasty diagnosis. The experiments of which this paper is the record have but the limited value of a preliminary report; they should be extended and multiplied, and the results carefully analyzed, before we may pass finally upon the merits of the test. The writer can only speak for himself, when he states positively that the test has been and is now of very considerable value to him, personally, in his clinical work, and having previously been a skeptic it is possibly with the added fervor of the proselyte that he urges its more general adoption.

SUPPLEMENTARY REPORT OF THE RESULTS OBTAINED BY A MODIFICATION OF EHRLICH'S METHOD OF TESTING THE URINE IN TYPHOID FEVER.

The reading of my original paper having been postponed, I have occupied the intervening time in making new tests for the further extension of my tables, and in the hope of more sharply defining the limits of occurrence of the diazo reaction. For some time I have felt convinced that such a change in the test solutions might be made as would eliminate some of the doubtful reactions, and possibly show that in tuberculosis, etc., there were either qualitative or quantitative differences acting to obscure the results. Using a concentrated test solution with the sodium nitrite in excess, I found the reaction or one closely resembling it even in normal urine, and acting upon this hint the process was reversed, and instead of the 1:40 solution prescribed by the authorities I have used a solution containing but one part No. 2 to 100 parts No. 1, and find that by so doing the oranges and mixed reds and yellows mostly disappear. Pulmonary tuberculosis and pneumonia fail to yield a reaction, while it remains distinct and perfectly defined in septicemia, typhoid and advanced malignant disease. The following table will show the result of the modified test:

TABLE II.

	Cases.	Plus.	Minus.
Typhoid	10	10	0
Septicemia	3	0	3
Varicella	1	0	1
Typhoid relapse	2	2	0
Pseudo-relapse	1	0	1
Scarlatina	1	0	1
Phthisis pulmonalis	12	0	12
Lobar pneumonia	3	0	3
Febrile diarrheas	2	0	2
Pleurisy	2	0	2
Syphilis—second stage	3	0	3
" —third stage	2	0	2
Malarial fever	2	0	2
Carcinoma advanced	2	2	0
Chronic rheumatism	3	0	3
Simple anemia	1	0	1
Heart disease	4	0	4
Chronic nephritis	6	0	6
Tuberculosis of hip and elbow joints	1	0	1
Arterio sclerosis	2	0	2
Cirrhosis of liver	2	0	2
Oxaluria	3	0	3
Gastric ulcer	1	0	1
Acute bronchitis	2	0	2
Chronic constipation	1	0	1
	75		

You will note that by this method of testing

typhoid fever, cancer and septicemia alone give the reaction. It is probable that the severer exanthemata would also show it. In typhoid it was found present as early as the third day, and persists as long as fever is present. *It positively does not occur in lobar pneumonia or pulmonary tuberculosis*, if this method of testing be used, though present in both diseases when the 1:40 solution is used. This modification would seem therefore to add considerably to the value of the test, both in direct and differential diagnosis, and still more strongly suggests its utility in general diagnosis. You will note, for example, that it does not occur in chickenpox, while it has been invariably reported as present in variola. That it is absent in rotheln though present in measles, while its appearance in cases of malignant disease, if shown to be constant, would be of the greatest value in the diagnosis of obscure abdominal affections and the differentiation of malignant and benign growths. In typhoid relapse, as in the original disease, I have found it present as early as the third day of temperature. Before closing, I desire to emphasize the importance of verifying the color test by shaking and carefully noting the appearance of the surface foam. If the reaction be present, this foam invariably shows a delicate pink or rose-red coloration, while in doubtful or negative cases the foam is yellow. This little expedient greatly simplifies the test. I sincerely trust that further reports upon this matter will be forthcoming, and am positive that the verdict founded upon actual experience will be favorable to the test.

INEBRIETY.

BY W. P. HOWLE, M.D.
ORAN, MO.

I am just through reading a paper by R. M. Wiggington, M.D., of Waukesha, Wis. He refers to his Missouri friend, meaning me, because I do not believe with him that "the drink habit," is a *disease*. His reasons, as given in his paper, for believing that it is a disease are many, well stated and seemingly true, but he, like other men who have a theory they wish others to believe, presents only one side of the question. They never mention facts that would seem to contradict their views. I will now state a few reasons why I do not believe in this modern theory. I say modern, because, as far as I know, this theory is of recent date. Drunkenness or inebriety has for centuries been looked upon as a *vice* and all governments of which I have any knowledge have laws to prohibit inebriety and penalties for violation of said laws. Our Government is not an exception, but I do not believe there is any law to punish men for becoming ill. Every citizen has a legal right to be sick. The law-making power makes quite a distinction between the two conditions. It follows from this, that the ablest men in our Government do not consider inebriety a disease. Legislators for centuries have said by their acts: Inebriety is a vice and not a disease (as some of the learned medical men would have us believe). The Doctor says: "It is generally conceded by the scientific world that inebriety is a disease." Why, then, does the scientific world not convince the law-making power that such is true?

The senators and congressmen of our Government are thought to be our ablest men. You do not hear them saying anything about inebriety being a disease. If you were to approach one of them who goes on an occasional jag and tell him he was diseased and not fit to be a senator, but ought to be sent to some asylum for inebriates, you would see how much he believed in this modern fad. Every believer in this theory knows of one or more of his neighbors who have gone to every extreme which drunkenness will induce, and who have reformed, lived on in the same neighborhood, become good citizens, had the confidence of all, who never took a dose of medicine for this so-called disease. Will any of you please point out just what ailed these men? You assert that the drunkard is diseased in every cell and has no moral power. If so, how did these, your neighbors, reform? Can a man who has no moral power reform; and if these reformed men are diseased, why do they not show some manifestation of disease? They eat, drink, sleep and work like well men. They have normal temperature, circulation and digestion; are men mentally able to practice medicine, law, or preach the Gospel; can do any kind of business they are called upon to do. You say they are diseased. How do you know? I venture the assertion (I believe it is a fact) that more men have been reformed by moral suasion than in any other way. If moral suasion will cure disease, and especially one so serious as my opponents make inebriety to be, why will it not have at least some effect in other maladies? I believe large quantities of alcohol taken into the stomach would produce gastritis. Now will any one assert that moral suasion would have any effect on gastritis? So I might enumerate the whole catalogue of diseases produced by excessive drinking, and moral suasion would never be thought of as a remedy. Yet by moral suasion, alone, the worst drunkards on record have been reformed and restored to usefulness. No man can explain this process from a standpoint of *disease* and *cure*.

Suppose some of my opponents should claim that they were having wonderful success in curing pneumonia, and say they were using only *moral suasion*. Would they not be called cranks? There is as much sense displayed in such a claim as there is in saying inebriety is a *disease*, and moral suasion will cure more cases than any other one remedy. No one will pretend to deny that the drink habit is being cured every day by moral suasion—also by religious influence. Now, this being true, if the drink habit is a disease and religious influence will cure it, it follows that religious influence has power to change diseased cells into healthy ones, and having this power would be a sovereign remedy in disease, but the medical profession have "sat down" very hard on the christian science frauds. They hoot at *faith cures*, but if their theory is true, the faith cure gentlemen ought to have due credit for their work Christian science has a right to a top seat if inebriety is a disease. Why? Because religion cures more drunkards than medicine cures. But the facts in the case are these: The drink habit is *not* a disease and the so-called christian science is a fraud, and this argument knocks the *disease* side of the question into a "cocked hat." Now for a few reasons why this theory won't go: It is contrary to the teachings of the Bible and the justice of God. The Bible says: "No drunkard shall inherit the Kingdom of Heaven." Would the God of Heaven shut the gates against sick people? If God had not considered drunkenness a crime He would never have issued a decree against it. Ask

any man who gets drunk whether he considers it right or wrong? Ask him what the Bible says about it? Let every reader ask himself what he thinks about it, and my word for it the universal verdict will be: Drunkenness is a vice, a sin against God's commandments and against one's own present and future happiness. If the Bible teaches truly, it is evident that inebriety is a sin and not a disease.

A word or two as to heredity and I am done. A man may inherit an *appetite* for whisky, but craving an article is not possession of it. A man may want many things that he will never get. A man must drink to become a drunkard. A born drunkard is a misnomer. A man must eat to become a glutton. He must smoke to become a cigarette fiend. My opponents have the cart before the horse. They say the man drinks because he is sick. I say he is sick after he drinks, not before. They say illness caused the drinking. I say the drinking caused the illness. I do not expect to convince them of their error, but write only in defense of what I believe.

A CASE OF DIPHTHEROID CHANCRE ON THE POSTERIOR WALL OF THE PHARYNX.

BY JAMES HARVEY RAYMOND, M.D.

CHICAGO.

Instructor in Surgical Pathology in Rush Medical College; Assistant to the Clinic Department, Nose, Throat and Chest, Rush Medical College; Attending Physician at Central Free Dispensary Department, Nose, Throat and Chest.

A chancre is the primary lesion of syphilis, which makes its appearance at the seat of inoculation, usually from twenty-one to thirty days after contact with the essential cause of the disease, which at the present time is not definitely known.

The physician who has had the opportunity of observing patients suffering with the disease in its various phases, skeptical though he may be, must yield to the preponderance of clinical evidence, which favors the consideration of this being a disease caused by microörganisms or their ptomaines.

This theory is strongly supported by the fact that certain phases of the disease or its deleterious effects upon the tissues of the body, produce pathologic conditions analogous in character to other well-known diseases of microbic origin, viz.: yaws, glanders and other granulomata. While the clouds of uncertainty are hanging over us regarding this disease, the search light is still in the hands of modern pathologists who by patient and diligent scientific research, it is hoped, will soon point out and prove positively its true cause.

Reviewing the etiology of syphilis, we find foremost among those who have studied by experimental research and have expounded the theory of microbic infection, the names of Lustgarten, Doutrelepont and Schutz; Matterstock, Markuse, Andromico, Zeissl, Marcus, Disse and Taguchi; Eve and Klebs. (Senn, Surgical Bacteriology, 2d edition, pp. 243–246.)

But none of the above pathologists have satisfactorily shown the constancy of the microbe they claim as the cause, and as no uniform results have been obtained we are still in the dark, and the true etiology remains to be shown by future investigation.

A chancre may exist on any part of the cutaneous or mucous surface of the body;—the most common seat is on the penis, glans, prepuce or urethra. It is also found about the anus, lips, mouth, tongue, palatine arches, tonsils, cheek, nipples, etc. It is the *extra genital* class that is the subject of this article and that is by far of greater interest to us from a diagnostic point of view, as its somewhat varying and peculiar characteristics are too apt to be overlooked by the inexperienced or busy practitioner of medicine, or taken for a more simple ailment, the patient thereby being allowed to harbor an affection that sooner or later will claim him as a victim of its ravages and perchance cause like suffering in many others.

The macroscopic appearance and consistency of a chancre vary according to its anatomic situation; it makes its initial appearance in the form of a small papule, hard and painless, gradually enlarging and becoming more indurated, especially about the edges, until finally it presents the appearance of a hard, circumscribed mass, the center of which is somewhat depressed.

When it is found upon mucous surfaces, e. g., in the mouth, it appears as a patch, white or yellowish gray in color, circumscribed, and elevated above



Fig. 1.—Perpendicular section through edge of hard chancre of prepuce. Hamilton.
a. Ulcerative surface. *b*. Epithelial edge. *c*. Dense small cell infiltration. *d*. Lymphatics encompassing an artery, filled with small round cells.

the surrounding tissue and presenting a variable degree of induration about its edges and base. When the tissue about the center becomes favorable for the growth of pus microbes, the center becomes cup-shaped, due to the ulcerative process extending downward, and contains the histologic elements of pus.

Microscopic examination of chancre reveals a dense, small, round cell infiltration of the tissue, which by pressure from beneath towards a point of low resistance, causes the upper stratum to become greatly attenuated at the center of the lesion, the atrium of infection. About the edges the papillæ of the derma are seen to be hypertrophied, the tunica adventitia of the blood vessels is sclerosed and the lymph spaces become filled with round cells. As the process of the proliferation continues, the cells, owing to the weakened condition of the tissues at the center, work their way towards the surface and very often burst through, causing a granular excoriated or abraded appearance.

The amount of induration about the edges is due to the degree of hypertrophy of the tissue and sclerosis of the tunica adventitia of the vessels in the

papillæ, together with the concomitant round cell infiltration of the adjacent lymphatics and peri-vascular tissue. Various kinds of bacteria are found, and can be seen in great abundance, and if ulceration takes place, it is caused by the specific action of pyogenic microörganisms upon the histologic elements of the lesion, which furnish a favorable medium for their growth and multiplication.

A rare variety of the initial lesion of syphilis is the diphtheroid chancre of Dr. Morrow, in which a large portion of the glans penis is covered with a glistening grayish-white coating of a leathery consistency, simulating in all its characters a diphtheritic exudation. He states that in one case in which a patient confessed the *rôle fellatrix*, the appearance of the throat suggested a malignant diphtheria, though lacking adherent membrane. Clerc, also, has observed this form of lesion and describes it: "As a kind of false membrane presenting some resemblance to the diphtheritic patches, which characterize certain forms of syphilitic symptoms, affecting mucous membranes, but usually occupies only the center of the chancre, its edges shading off into a reddish circumference."

Cornil found in the transparent fluid on the surface of a chancre, pus corpuscles, fine albuminous or fatty granules, very small spores separate or forming rows, rod-shaped bacteria and corneous cells of the rete mucosum undergoing destruction.

The frequency with which the extra genital chancre is found in the throat, in the practice of the average physician, may be estimated from the reports made during the past few years by the following syphilologists and laryngologists. The late Sir Morell McKenzie in all his extensive experience met with but seven cases of chancre of the pharynx, and states: "The rarity of chancre of the pharynx may be estimated from the fact that of 673 examples of chancre in all situations, not one was found behind the anterior pillars of the fauces."

The primary lesion of syphilis, when situated in the pharynx, is most always found on one of the tonsils. Desnos attributes this to the structure of these glands, the lacunæ of which are likely to receive and retain the syphilitic virus when introduced into the throat.

Dr. Morrow, in his most excellent work on syphilology, of recent publication, says that chancre of this region is most frequently found on the tonsil, the posterior wall of the pharynx being most singularly exempt.

Diday met with eight cases of chancre of the tonsil.

Dr. L. D. Buckley of New York, (*New York Medical Record*, May 27, 1893, p. 645) states that in twenty years of practice more than two thousand cases of syphilis came under his observation, 5 per cent. of which were extra genital, fifteen of these being found on the tonsil.

Dr. Cæsar Boeck states that in Norway, chancre of the pharynx is next in frequency to the genital regions, attributing this to the customs of living, having observed one large family all using the same spoon, without cleansing. M. S. Usass showed at a recent meeting of the St. Petersburg Russian Syphilogical and Dermatological Society, a married woman, age 41, with chancre of the right tonsil and posterior pillar of the fauces. A. I. Budngoff also presented a recruit, age 24, and S. Serdnekoff relates two cases of chancre of the tonsil, with chancre of the right tonsil. Neuman saw but one case, of eighty-eight extra genital chancres; eight were of the tonsil. Columbini of Sienna, and Cartaz of Paris, have recently reported cases of chancre in a similar location. It is said that the majority of cases of extra genital chancre are found on the lips and tongue, next in frequency the tonsils. But the rarest of all as shown by the foregoing facts and reports is that of the *posterior wall of the pharynx*. It is owing to the fact of its great rarity in this location, that I am pleased to be able to report a case, and add the notes made while the patient was under close observation.

Mr. F. came to the Chicago Policlinic (Department Nose and Throat) for treatment; his age 31; unmarried. Had never had any disease, other than ailments incidental to childhood; had not been directly exposed to any infectious disease. Family history good. Three weeks previous felt a sensation of dryness and had a desire to hawk and clear the throat; was languid; appetite poor; had headache and considerable jactitation; felt slightly feverish. The following day he noticed a white patch the size of a nickel on the posterior wall of the pharynx in the median line, which seemed to be rapidly spreading and in less than twelve hours had extended down the pharynx into the naso-pharynx and on to the anterior pillars of the fauces.

This condition had continued three weeks, with no change of the above symptoms, except that the fever was higher, and deglutition painful, owing to soreness of throat. The appetite was very poor, voice hoarse and of marked nasal quality. Examination of the pharynx revealed the presence of a smooth yellowish-gray membrane, one-sixteenth of an inch in thickness, symmetrically covering the posterior wall of the pharynx, extending down about half an inch, and into the naso-pharynx one-third of an inch, and about a quarter of an inch on the anterior pillars of the fauces. It was quite adherent to the underlying tissues—the edges were elevated and the tissues about the periphery were greatly indurated and quite deeply congested. The tonsils were very slightly enlarged.

The membrane was removed with some difficulty and when detached gave rise to slight bleeding. When removed in toto, the floor upon which it had rested presented a faintly granular appearance, the edges of which were quite markedly indurated. There was no perceptible ulceration. The glands in the cervical region at the angle of the jaw on either side, were greatly enlarged. The temperature registered 101 3-5; pulse 92, regular, feeble. The appearance of the throat and clinical history, though not typical, seemed to justify at least a suspicion of diphtheria. The patient was isolated. The following treatment was instituted. Having used, with considerable success, in acute tonsillitis and pharyngitis pure guaiacol locally, it seemed rational to try it in this case, knowing its efficient antiseptic properties. I made the application at 5 P.M. on January 6, and saw the patient the following day at 1 P.M. The temperature was 98 6-10, pulse 90. Guaiacol was again applied and at 6 P.M. same day, pulse was 80, temperature 100. The patient had enjoyed a good night's rest—his headache had passed away and he felt very much improved. Guaiacol was continued five days, the temperature in the meantime ranging from 98 6-10 to 99; pulse 72 to 100.

℞ Ferri et quininæ citratis, ... grs. iii.
Ext. nucis vomicæ, ... grs. ss.

Was given before each meal and at bed time.

Guaiacol was withdrawn, after which the pain seemed more intense, pulse slightly accelerated and temperature elevated. At this time he complained of inability to swallow fluids readily on account of regurgitation into the nose. The nasal quality of voice seemed more perceptible and a well-marked paresis of the pharynx and palate had developed.

Antiseptic gargles, nasal douches and all other symptomatic treatment was promptly given, but from the start it seemed at best only palliative, there being no perceptible change either for better or worse.

The membrane was examined microscopically for the Klebes-Löffler bacillus; and cultivation experiments carried out—negative results. The case was examined by Dr. E. Fletcher Ingals who was of the opinion that it was very strongly suspicious of diphtheria. After having had the patient under close observation for two weeks, I noticed a

few personal peculiarities that to me were strange and suspicious. He was not effeminate in his appearance, but at times quite so in actions. About this time I noticed a friend, as he called him, his room-mate, whom I saw for the first time. He was very effeminate, both in appearance and actions and was the signal for arousing strong suspicions of the character of the patient. A typical papular syphiloderm shortly made its appearance over the entire body of the patient; one or two mucous patches were seen on the lips and mouth. The patient was confronted with the fact that his history was well known and asked at what time he had peculiarly exposed himself, according to the custom of a certain class of sexual perverts. He hesitated at first, but finally confessed that he had been addicted to these practices since childhood. Hydrargyri proto-iodid grs. ¼ t. i. d. was given, and in the course of ten days the subjective symptoms had completely subsided and the membrane disappeared.

Portions of the membrane had been prepared for microscopic examination in the following manner: After standing in dilute alcohol for a few days thin sections were made. When these were carefully teased with needles, they were found to be torn with considerable difficulty, and were quite elastic. A section was stained with fuchsine, mounted and examined with a high power, and was seen to consist

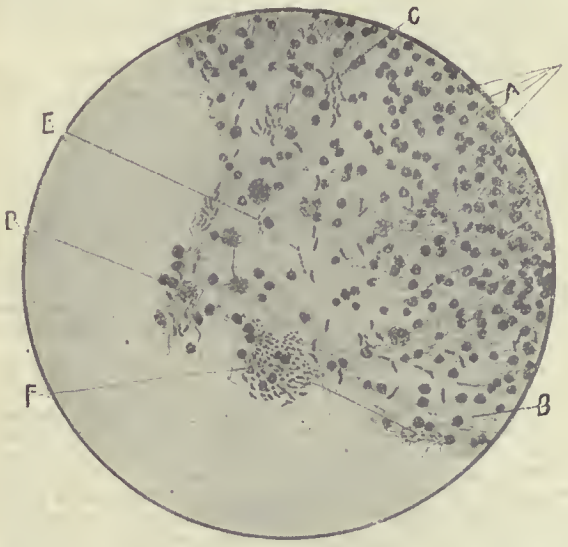


Fig. 2.—Central portion of membrane from diphtheroid chancre of posterior wall of pharynx, five weeks after its initial appearance.—J. H. Raymond.

A. Dense round cell infiltration. B. Fibrinous reticulum. C. Large rod-shaped bacteria. D. Pus corpuscles. E. Streptococci. F. Colonies of staphylococci.

of a dense felt-like mass of fibrils. Upon examination at the edges of very small fragments, obtained by teasing, the fibrils are seen to divide and sub-divide into short branching prolongations, resembling stag horns. This reticulum, fibrinous in character is no doubt fibrin. A certain amount of coagulation necrosis attends the formation of fibrinous organization wherever met, e. g. pleuritic exudate. Densely infiltrating this reticulum can be seen small round cells. A few streptococci, colonies of staphylococci, pus corpuscles and a great many rod-shaped bacteria are also present.

From the clinical facts and microscopic findings in this case, which are identical with the histologic elements of chancre as given by Cornil, Hamilton and others, and the fact that there was a prompt response to anti-syphilitic treatment, I am confident that we have been dealing from the start with a case of diphtheroid chancre of the posterior wall of the pharynx.

36 Washington Street.

REGISTRATION OF TUBERCULOSIS.

Special meeting of the College of Physicians and Surgeons of Philadelphia, held Jan. 12, 1894, the President, S. WEIR MITCHELL, M. D., in the Chair.

TO CONSIDER THE PROPOSED ACTION OF THE BOARD OF HEALTH IN REFERENCE TO THE REGISTRATION OF TUBERCULOSIS.

(*Continued from page 226*).

DR. WILLIAM OSLER, Baltimore—The question may be thus briefly stated:

1. Following a primary law of parasitism, the bacillus tuberculosis frequents chiefly that organ in its host which communicates most freely with the exterior. Just as countless thousands of ova are thrown off from the intestine of the bearer of a tapeworm, so from tuberculous lungs in a state of softening and cavity formation, countless millions of bacilli are cast out daily with the sputa.

2. The widespread diffusion of the parasite outside of the body has been demonstrated in the infectiveness of the dust and of the scrapings of the walls of rooms and wards occupied by patients with pulmonary consumption. Moreover, the greater prevalence of tuberculosis in crowded communities, the enormous mortality from the disease in prisons and institutions, and its frequent occurrence as a house malady, suggest that the conditions favoring its continuance are those which foster the growth and spread of a specific contagion.

3. In the language of parasitology the lungs constitute the chief seat of election! But, apart also from gross pulmonary lesions, the proportion of autopsies in which the bronchial glands are found tuberculous, speaks unmistakably for direct infection in the exercise of their function as dust filters.

On these grounds I believe that the registration of pulmonary tuberculosis would be beneficial—enforcing attention to those sanitary details so apt to be slighted or overlooked, and diminishing directly the danger of contagion in the community.

Infection through food is closely related also to the endemic prevalence of tuberculosis. The incidence of the disease in the mesenteric glands of infants indicates that the gastro-intestinal canal is a portal of infection only a little less wide than that of the respiratory system.

The question of tuberculosis is not, however, settled with the disinfection of the sputa of consumptive patients.

The hereditary transmission of the disease must be accepted, though an estimate of the frequency of this mode of infection must necessarily be uncertain, but for certain forms Baumgarten's theory of latency is particularly suggestive. Tuberculosis has been well called the *pébrine* of the human race. The analogy is striking, for not only as you will remember, is the parasite of the silkworm disease transmitted by direct contagion, but it also infects the eggs, which hatch and may pass through various stages of development before they are finally destroyed.

Lastly, and here is consolation, the conditions which render individuals more or less immune scarcely yield in importance to those which maintain the vitality of the tubercle bacilli in a community. So widespread is the seed that few of us escape infection, and the statistics of the Paris morgue show that in more than 50 per cent. of adults the germs not only gain an entrance, but actually effect a lodgment. As a factor in tuberculosis, the *soil*, then, has a value equal almost to that which relates to the *seed*, and in taking measures to limit the diffusion of the parasite let us not forget the importance to the possible host of combating inherited weakness, of removing acquired debility, and of maintaining the nutrition at a standard of aggressive activity.

DR. H. C. WOOD—I came here not to speak but to learn, and thus far have been quite successful. I wish to quote a letter from Dr. Billings which has been placed in my hands. He says: "I should like very much to hear the discussion, but probably should have little to say, since I am doubtful as to what the decision of the College should be on this point. I presume that there are about six thousand people in Philadelphia affected with consumption, and that a considerable proportion of these have contracted the disease in infected houses. If it were possible by a systematic notification for the Board of Health to locate a considerable number of these infected houses, what steps would it take to purify them? How would it deal with those of the poorer classes who are affected with this disease, and with their furniture, bedding and rooms? Until these questions are

answered, I do not find it possible to form a definite opinion as to whether it is worth while to put in force a compulsory system of notification. Some of the worst infected rooms are probably those occupied by the criminal class, which is especially liable to this disease. For example, the Eastern Penitentiary is certainly thus infected; but in this I presume the Board has no jurisdiction.

"It occurs to me, that if the system of notification is to be tried, it might be best to commence with a limited area of the city in which the death-rate is now high; for example, the Seventeenth or the Seventh Ward, and see what results in diminishing the proportion of cases in this area can be obtained in the course of two or three years."

This thought has occurred to me, and has not been touched upon by any of the speakers. In a case of diphtheria the Board of Health is notified. The patient dies or gets well and the room is disinfected. Suppose, however, a case of consumption; the Board of Health is notified, the house is disinfected to-day but reinfection occurs tomorrow, and the end need not come for four or five years. Unless you add the power to forcibly remove the patient and shut him up in a hospital-jail where you can confine and permanently disinfect him, I do not see how you are going to get any good results from the process of disinfection. As far as disinfection goes, unless you can prevent to-morrow's reinfection, I see little use in to-day's disinfection. If, however, the Board of Health could disinfect houses in which phthisic cases have died, something might be achieved, but the ordinary death notice is all the notification required for this.

Dr. Thomas J. Mays—In the charts which are presented to us it is to be noted that the disease is less frequent in those parts of the Fifth Ward in the neighborhood of Spruce and Pine Streets, and becomes more prevalent as we approach the poorer portion of the city. Dr. Flick's investigations extended over only a limited period of time, say twenty-five years. In that time he finds that about 25 per cent. of the houses in the Fifth Ward have become infected. I hold that if the investigations had extended over a longer period—say fifty, seventy-five, one hundred, or one hundred and twenty-five years—he would have been able to show that nearly every house in that ward was infected, according to the contagion theory, that in nearly every house in that ward a consumptive had lived and died. The same argument holds against the investigations made in New Haven. I have in my possession a book reporting similar investigations made by Dr. Riffel in two old towns along the Rhine in Germany. He investigated the death-rate from phthisis in these towns for fifty, seventy-five, one hundred, and in some cases one hundred and fifty years back. He found that in one town at least—Karlsdorf—that at some time or other nearly every house had had a case of phthisis in it. I think the same thing would hold in regard to the Fifth Ward of this city if the statistics extended back sufficiently long. But as these only cover a period of about twenty-five or thirty years this is out of the question.

Dr. Flick also refers to the diminution of the phthisis mortality in Berlin, London and Philadelphia. I think that if he had consulted the death-rate from phthisis in these cities he would have found a gradual diminution in the death-rate from consumption before the bacillus area began in 1882. I went over this subject some years ago and I found that in every large city there was a gradual diminution in the death-rate. Dr. Flick claims that the diminution in the death-rate of consumption, since 1882, in this city has been due to the disinfection of the sputum. His own figures show, however, that there occurred a larger number of deaths from this disease during the nine years following 1882 than during the nine preceding years. In what way this makes a favorable showing for the theory of disinfection I am at a loss to understand. So far as I know there has been no Board of Health regulation in this city. So far as I know there has been no Board of Health regulation in Berlin, or London, or any other city, yet their deaths are gradually diminishing in number. If the gentlemen on the other side will look backward a hundred years they will find that the very experiment which they are so anxious to try now was tested with the utmost rigor, from 1782 to about 1855, in Naples. It was decreed that every physician who neglected to report a case be fined $180; that the ceilings, walls, floors, doors, and windows of the room in which consumptives died be torn out and burned; that the bedding and furniture be also burned, and that such dwellings were not to be occupied for a year. The result was that the family with phthisis was shunned and driven to want. Houses in which consumptives died depreciated in value. The sick were neglected and left to die inhumanly away from their families and friends. Did any good result from these laws? Brehmer states: "Concerning a diminution in the rate from phthisis in Naples the medical historians of that period are ignorant." According to Uffelmann (*Berlin klin. Wochenschrift*, 1883, p. 369) Dr. de Renzi, the medical historian of Italy, states that the injury which had been inflicted on Naples by these laws was simply indescribable and denounces the Neapolitan faculty in the severest terms for participating in their introduction.

In Vol. xlv., p. 112, of the *British and Foreign Medico-Chirurgical Review* it is stated that Drs. Spatuzzi and Somma, "who have paid great attention to the mortuary returns in that city (Naples, about 1860), affirm that one-sixth or a seventh of the whole mortality is due to phthisis," and that Dr. de Renzi "marvels greatly (in 1863) that the city of Naples is fully as much liable to phthisis as either London or Paris, though the salutary condition of the climate should render it far less common."

If the death-rate from consumption was the same in Naples at the time segregation ceased, as it was in other cities in which segregation was not practiced, it is self-evident that such a measure can have no influence in diminishing the death-rate from this disease.

Dr. James Tyson—I had intended to say something this evening on this important subject, but almost every point which occurred to me has been so well treated by others that I hesitate to add anything. I admit all that has been said with regard to the contagiousness of phthisis, as determined by experiment, but as to the actual spread of consumption from one person to another as the result of association—as to the degree of contagiousness, in a word—I agree entirely with Dr. Da Costa. Admitting the correctness of Dr. Flick's studies and Cornet's observations, it still comes to this, that the physician is competent to take care of this question without the intervention of the Board of Health. Just as the surgeon is qualified to take care of the matter of antisepsis and asepsis in his management of surgical cases, so the physician is competent to take care of the disinfection utensils used by consumptives and the destruction of the germs which may be the cause of the disease, the more especially as such disinfection is acknowledged to be of the easiest kind. What Dr. Roberts has just said with regard to the situation ten years ago as to sepsis and antisepsis, could as well be alleged in favor of the position that I take—that the physician is competent to handle the difficulties. The surgeon did not call in the Board of Health to help him under like circumstances but fought the battle alone, and won it triumphantly. The question has been studied experimentally and chemically, and we know exactly where to put our fingers to check the spread of consumption as far as this is possible. We must attack the disease in two ways: 1, the contagion must be destroyed as far as possible with the means at our disposal; and 2, we must seek to change the soil on which it is known that the bacillus flourishes, by improving the general health of the individual, and thus increase his ability to repel the invader. I feel that we are entirely competent to handle this question without the aid of the Board of Health.

Dr. Arnott—I have listened with much interest to both sides of the discussion, but must confess that I am not yet quite secure in my mind as to the proper course to be pursued. I am strongly inclined to the views expressed by Dr. Billings in his letter to the President. Tuberculosis is a widespread disease with manifold expressions, and if our efforts are to be directed against it, in the full sense of the term, the problem is certainly beset with many difficulties.

In connection with the subject under discussion, the question that has constantly presented itself to me is: If the College sees proper to recommend that all houses in which the disease is located be reported to the authorities, has it any guarantee that their conditions will be improved? The object in reporting these houses is to secure complete disinfection of them, a process requiring conscientious attention to most minute details, to say nothing of a full knowledge of the requirements of the cases. If the Board of Health is in a position to assure us that these demands can and will be met, then I am in favor of the resolution. If not, then we have had a long discussion with but little result.

The ultimate object arrived at in the resolution I consider as most desirable, but will it be attained if the resolution is passed? We have abundant evidence in justification of the belief that localities occupied by persons suffering from the pulmonary form of tuberculosis, particularly, may and do become centers of infection, and it is highly desirable that such places should receive the attention that their charac-

ter demands. Much has been said here this evening concerning the prevention of the spread of this disease by disinfecting the sputum, and this point has been accentuated as if the danger ended here. The danger does not end here. Sputum collected in a receptacle may remain perfectly harmless without disinfection or any other treatment whatever. The danger lies in the sputum *not* collected, but spat upon the floor, dried, ground into dust by the feet of passers-by, and ultimately inhaled into the lungs—a condition of affairs often seen in dwellings of the poor. The predominance of pulmonary tuberculosis over other manifestations of the disease is certainly, in part, accounted for in this way. Dr. Da Costa in his remarks has said that "bacilli" are everywhere present, and if this is the case how are we to escape them, etc.? His use of the term, bacilli, in its generic sense is misleading; I can hardly think he meant that *tubercle* bacilli were everywhere present, for this is not the case. They *may be* present everywhere that tuberculous individuals are present or have been present, but to say that they *are* present in all places does not accord with the results of observation.

DR. FRANK WOODBURY—The facts collected with so much commendable diligence by Dr. Flick are susceptible of quite another interpretation. They certainly do not prove consumption a contagious disease, or that the bacillus tuberculosis is its sole cause. If he had confined himself to the task of showing that want of sunlight, dampness and other malhygienic conditions were efficient causes of phthisis his data would have been equally applicable. Or if he had intended to prove that the habitations of some of the poorer inhabitants of this city were likely to act injuriously upon the occupants, so as to predispose them to phthisis, we might have been willing to go with him almost to any extent in making application to the Board of Health to destroy these sources of disease. We might admit that by adopting such drastic measures the mortality from tuberculosis would undoubtedly be greatly reduced. The total extinction of pulmonary consumption, under present conditions of civilized life, however, is entirely impracticable.

It may be admitted, if the proposed plan of registration and inspection were rigorously carried out, that the results would apparently support the claims of the author. The number of cases reported would certainly diminish to a remarkable degree; but the real explanation, however, of the diminution would be that a large number of cases would be concealed, and deaths would be reported as from other causes. Moreover, a large number of cases would object to the solicitude of the Board of Health for their welfare and leave the city. Physicians would have their sympathies appealed to by relatives, who might wish to conceal from the patient the fatal character of the malady, and would be in a dilemma between duty to their patients and duty to the State. In fact, registration would eventually divide physicians into classes—those who reported their consumptive patients and those who did not. The physicians having the reputation of not reporting their cases would naturally have a larger clientèle than others.

The discussion of the registration of consumption manifestly brings up the question of the nature of phthisis. It is true that there are other clinical conditions which resemble tuberculosis of the lungs and which are not due to the presence of tubercle bacilli. Assuming, however, for the moment that all cases of consumption are tubercular, we may ask how large a part in disseminating the disease is played by contagion? We know that Dr. Brush calls attention to an infected milk supply as the principal source of tuberculosis in our cities. Bowditch showed conclusively that dampness of the soil is a very powerful factor in the causation of phthisis. Other authors claim that it is mainly due to inheritance. If these views may be regarded as well established, then the infection sinks to a secondary place. If tuberculosis is the *pébrine* of the human race, as has been stated, this invites a consideration of the subject from the standpoint of comparative pathology. If phthisis is analogous to the fungous diseases of the lower animals and plants, then the results of treatment in the latter may throw light upon the therapeutics of human tuberculosis. In a communication made by Dr. George B. Wood, in 1869, to the American Philosophical Society he referred to a discovery which he had made, and which, I think, has a very important bearing upon this subject. He proved by experiments upon a large number of fruit trees, which were prematurely dying by progressive decay (now recognized as some form of fungous disease), that by simply adding potash to the soil the trees were restored to their early vigor and they resumed fruit bearing; in fact, the crops were larger than ever before, "many branches breaking down with their load of peaches." This is a striking illustration of the importance of supplying to the soil some chemical agent which may be deficient, rather than devoting our time and energies to the destruction of germs. Pulmonary consumption is certainly curable. How many have been cured solely by an antiseptic or a parasiticide treatment? Not one; but many have been restored to health by hygienic methods alone.

Let me briefly quote, without comment, a case in point: It is that of a distinguished Fellow of the College, the late Dr. Joseph Parrish. Dr. George B. Wood, who delivered the obituary address before this College, thus alludes to Dr. Parrish's illness: "When about twenty-five years of age the doctor was affected with a severe and lasting cough, and considered himself in danger of pulmonary consumption, to which he believed that he had a family predisposition, having lost a brother and sister by that complaint. Under a course, however, of vigorous, exercise, and from exposure to the air, without the use of medicines, he ultimately surmounted the threatening symptoms. The existence of cicatrices in the upper portion of the lungs, discovered upon postmortem examination, proves that his apprehensions were well founded, and at the same time affords strong evidence in favor of the plan of treatment which he adopted in his own case, and always strongly advocated."

Recent investigations into the etiology of tuberculosis seem to lead us away from the germ theory, and to point to the fact that in the tissues of the phthisical patient some chemic agent is deficient, which if we can supply, the symptoms will disappear and the case will proceed to recovery. This agent may not be the same in different patients. Cases of consumption have been cured by the hypophosphite treatment advocated by Churchill; others have been restored to health by alcohol; yet others have been equally improved by drinking blood at the abattoirs, or by eating raw beef. Codliver oil, advocated by Bennett, seems to supply the needed element in some; an abundant milk-diet has been successful in others. The agent may be a simple salt-like lime hypophosphite or sodium phosphate, or organic in its nature like tuberculocidin or nuclein. Whatever it may prove to be, one thing is certain, that the results from following out this lead have been more successful than those from parasiticide treatment. They do not strengthen the argument of those wishing to class tuberculosis among contagious diseases.

In conclusion, I might point out the fact that if the Board of Health should force physicians to make diagnoses this would involve the compulsory use of all modern methods, including the microscope and culture tubes. The fact has just been announced that ex-Vice-President Morton's fine herd of Jersey cattle, recently exhibited at the World's Fair, has been found to be infected with tuberculosis. It is said that the animals presented no symptoms of disease whatever, and the diagnosis was made by the subcutaneous injection of tuberculin. Can physicians be compelled to resort to this in all suspected cases in the human subject?

DR. SOLIS-COHEN—The question to be considered is simply this: Granting all that may be said concerning the etiologic relations of the bacillus of Koch to tuberculosis, and granting all that is said as to the spread of infection from persons affected with tuberculous disease—on the whole, will the health and comfort of the community, including both the well and the sick, be better promoted by having all cases of tuberculosis registered or by not having them registered? So far as the sick are concerned, the disadvantages of registration are obvious. So far as the well are concerned, my distinguished teacher, the Vice-President of the College, has shown that the reasons advanced in support of the proposition that it is necessary to have cases of tuberculosis registered in order to protect the health of the community, can not withstand critical analysis. I believe, moreover, that registration would be a detriment to the community, for the reason that when of two measures to prevent an evil, attention is concentrated on the less efficacious, the more efficacious is likely to be neglected. If we direct our attention too strongly toward germicidal measures we shall lose sight of the more important measures that relate to the general sanitation of cities, of houses, and of individuals. Tuberculosis among men is to be prevented by increasing the vitality of the race, by preventing the marriage of tuberculous and otherwise unfit persons, and by perfecting the sanitary environment and life of the individual. The true prophylaxis against tuberculosis begins, therefore, before conception; but as society has not reached the stage of development where such prophylaxis can be generally insti-

tuted, it becomes all the more necessary to insist upon those practical measures of individual and civic hygiene which must be our greatest dependence and to oppose whatever shall tend to obscure their importance.

As has been said by Dr. Woodbury, if Dr. Flick had started out to prove that consumption flourishes in overcrowded places and where misery, poverty, filth, and vice are congregated, his statistics could not be more admirably adapted to enforce that conclusion; but to prove that tuberculosis is contracted only or chiefly by living in houses in which persons having tuberculosis have previously resided, would require that a census be taken to find out concerning every house in the city whether at any time there had been a patient with tuberculosis living or dying in the house, and if so, how many cases had followed and at what intervals, and also to determine how many cases of tuberculosis had developed among those living in houses where no one having tuberculosis had previously resided. Until statistics of this character are at hand, the case against the so-called infected houses, in districts where the city, the houses, and the lives of the people furnish so many potent cases of impaired vitality, is at least "not proven." But grant that the proof of infection in houses is conclusive. Suppose that the houses are thoroughly disinfected, and even, referring to Dr. Wood's point, guarded against reinfection—what have we gained? We are told—and I invite correction from Dr. Abbott, if I am in error—we are told by the highest authority that the bacillus of tubercle is about us everywhere. It exists, save at certain altitudes, or upon the sea, or in other specially favored regions, in the air we daily, momently breathe. Every one is at some time exposed to the danger of inhaling it, and that it is inhaled by everybody is shown by the results of autopsies upon persons having no tuberculosis elsewhere, but in whom the bronchial glands are infected with the tubercle bacillus. I believe that, according to some statistics, the proportion of persons so infected has been placed at 50 per cent. Is it not clear that, as was said by the President of the College in his Annual Address, in order to make the Board of Health laws effective, there would have to be instituted a system of espionage so that the tuberculous patient could be followed every day from the time of his rising up to that of his lying down, while seated in his house, or while walking by the way, to make sure that by no possibility should his sputum be deposited into any place where it could become dry and be carried into the air—a thing which is manifestly impossible. But if instruction only is to be given and no such rigorous supervision of individuals attempted, it is within the province and within the power of the attending physician to instruct his patients, and the intervention of the municipal officer is not required.

Therefore, because of the impracticability of this registration to effect anything positively, and because, negatively, it will have the effect of diverting attention from the fact that these streets or alleys, to which Dr. Flick directs our attention, should be cleansed and widened, the houses properly drained and ventilated, the people properly fed and clothed, and otherwise protected from exhausting and depressing influences, I consider it to be the duty of the College to place its strong word on record against the proposed legislation.

Were the proposition in favor of a municipal hospital for tuberculosis, separated from the other recommendation, and properly safeguarded, I should be glad to vote for it.

Dr. Richard A. Cleeman—One very important point has not been alluded to. Statistics show that the death rate from the disease is almost the same in every community, year after year. If there is any diminution, it is very small. This is directly opposed to the idea of the contagiousness of the disease. All other contagious diseases vary very much in their death rate at different times. There is only one explanation by which we can conceive that phthisis is contagious and the death rate always the same, and that is, that the whole of the community is thoroughly infected with the tubercle bacillus, and that in the community there is a fixed number who are susceptible to the disease. Just, as statistically, we can calculate how many giants or how many dwarfs are in a community, so can we estimate the number of persons susceptible to phthisis.

In this view of the case, with the bacillus tuberculosis spread over the whole city, measures to be effective must be of a very extensive character. The mere reporting of a case now and then—for I believe the rule will be often neglected—will have very little effect. Measures to be effective must be thorough and they are the methods of general hygiene.

Dr. James B. Walker—We must look at the practical side of this matter, and ask what will be the benefit from registration? How much has typhoid fever in this city been diminished by the fact that we report our cases? Not in the least. The disinfection of the stools which the physician has directed has lessened the number of cases, as similar attention to the sputum may in phthisis. I am against placing phthisis on the list of diseases to be reported, for many reasons. I do not believe that this would confer a single benefit upon the city or its inhabitants. The physician is capable of doing all that the Board of Health can, without the manifold evils and annoyances of public registration. The College should go on record against the registration of the disease. It should go on record also as believing that the disease is possibly contagious, and should recommend physicians to use the most strenuous efforts to prevent the transmission of the contagion.

Dr. Da Costa—I used the expression that the tubercle bacilli were everywhere. A bacillus that is on the pavements and in houses, that is wafted about in the air, that exists in milk, and on fruit sold in the markets and, as has recently been demonstrated, is on the very money that we handle, may well be described as a bacillus that is everywhere. The tubercle bacillus is so diffused that it can, indeed, be considered as everywhere present, and it is scarcely a figure of speech to so describe it.

With every word that Dr. Roberts has said, I agree. There is not a direction he has read I would not subscribe to and endeavor to enforce as an officer of an institution, or in private life. I hope, indeed, that every Fellow will go away to-night imbued with the necessity of carrying out all measures that have been brought forward with the view of destroying this scourge. But is it not better that we should do this as individual health officers, than to have it done in a necessarily perfunctory way by a Board of Health? The only way that the Board of Health could radically act to destroy the tuberculous material would be to burn every house that was supposed to be really infected, separate the tubercular husband from the wife, take every child away, and cause such an upheaval in society as no community would submit to.

Dr. Flick—Dr. Williams of Brompton Hospital, has been quoted as an opponent of the theory of contagion, but he has written a paper in which he shows that a large number of nurses of the Brompton Hospital have contracted tuberculosis. I think that he has traced some fifteen or twenty cases.[1]

As to the ubiquity of the tubercle bacillus, Koch and Cornet have disproven it. They have shown that the contagious environment of tuberculosis is limited. Cornet has made experiments with dust taken from the streets and other places at random, and was unable to produce infection by inoculation. He has, moreover, made an investigation of the health of the street-cleaners of Berlin, and has found them freer from tuberculosis than any other class. It must be borne in mind that the isolated cases of infection of fruit and other articles which have been referred to are traceable to handling by consumptives. Many of the fruit-stand dealers have consumption.

With regard to the endeavor to ascribe the occurrence of the disease in certain houses to dampness, that can be disposed of in a moment. If you will take one of the worst infected streets in the Fifth Ward, say Bay Street, you will find that at least 20 per cent. of the houses have not had a death from tuberculosis, although the sanitary condition is as bad as in the infected houses. Dampness can have no influence here.

As regards infection in hospitals, as I have said, Williams has written a paper in which he shows that fifteen to twenty nurses have contracted the disease in the Brompton Hospital. Cornet has written an elaborate history of hospital infection. He has taken the general hospitals of Germany, in which the nurses are permanent, and he finds that as high as 62 per cent. had tuberculosis. In my own class of residents at Blockley, sixteen in number, two died within three years of the disease, and I myself was believed for a time to be a victim.

It has been argued that we ought to trace the history of these houses for a longer period, say one hundred years. There is a limit to the infectious power of tubercle contagion. What that limit is I can not say; probably not very long. Unless cases occur within a few years of each other to keep up the chain of infection, the houses are no longer infected houses.

Italy has been quoted as an evidence of the non-effective-

[1] British Medical Journal, Sept. 30, 1882.

ness of preventive measures. I am surprised that this quotation is made so frequently after what has been written. Those who have seen my paper on tuberculosis in Italy will be in a position to refute this statement. I have proven in that paper, by careful quotations from contemporary authorities —and authorities that can not be doubted—that at the time when the laws were instituted in 1782 the mortality was about 10 per 1,000, and that when the preventive measures were abandoned, the mortality was so low in the extreme southern part of Italy that it was practically nil, 0.19 per 1,000. Instead of there being no result, the mortality was reduced from 10 to a fraction of 1 per 1,000. Many who have written upon the subject have overlooked the fact that it is not Naples but the Kingdom of Naples that is spoken of. This comprised the southern half of Italy and Sicily. At first the northern part of Italy opposed the view of contagion and refused to accept any preventive measures. After some years it adopted preventive measures, but even at this day the mortality in the northern part of Italy is twice what it is in the southern part. These preventive measures proved another point, and that is the local infection. The only practices that were of any benefit in the Kingdom of Naples were first, isolation; and second, compulsory disinfection. The preventive measures circled entirely about the household. The Italians did not know where the infection came from, but adopted crude measures of prevention. Yet with their crude measures they reduced mortality to a minimum, and except for the fact that Italy became a health resort for tuberculosis, it probably now would have no tuberculosis. If you will study the statistics you will find that those parts of Italy that are health resorts for tubercular patients run up the mortality. This has been as high as 4 per 1,000 in some of the resorts, but if you take the rest of the Kingdom of Naples, the mortality is a fraction above 1 per 1,000.

As to the competency of the physician to meet this question: In connection with this subject, we must bear in mind that every infectious disease is a law to itself. It is not fair to apply to tuberculosis the laws which govern diphtheria, smallpox, etc. The infecting material in tuberculosis is easily controlled. It comes from a single source. In smallpox it is difficult to control. If it were possible to sterilize all the sputa of consumptives we would not need disinfection. Such a thing is impossible, however, and therefore it is necessary that the room be disinfected. This requires great care, and unless the family is willing to undergo the expense it can not be accomplished. If the physician were to devote half of his time to bring about proper disinfection he could not do it effectively.

Dr. Cleeman has advanced an argument against contagion which, strange to say, has been made for the other side by Dr. De Forest. Dr. De Forest claims that inasmuch as the number of infected houses is limited, the mortality rate should remain the same every year, because the number of exposures remain the same. The centers of infection remaining the same, the deaths should remain the same.

Tuberculosis and typhoid fever have been compared. The reporting of typhoid fever can not bring about any results unless the lessons taught are acted upon. If the water supply were made better we should have no typhoid fever. There is no analogy between typhoid fever and tuberculosis. Tuberculosis is infectious from the point at which it exists; typhoid fever infects our drinking water. There is little danger from the room occupied by the typhoid fever patient. The cases are not at all analogous.

DR. MAYS—When this question was discussed before the County Medical Society, about four months ago, I quoted Dr. Williams, the same authority to which Dr. Da Costa referred tonight in support of the non-contagiousness of the disease in the Brompton Hospital.

I read his conclusions from his book, "Pulmonary Consumption," pp. 87–89, published in 1888, in which he emphatically states that contagion in the wards of this Hospital is absolutely unknown.

In concluding the discussion of that evening, Dr. Flick said that in a private communication, which he had not with him, but which he received from Dr. Williams since the book I quoted from was published, the latter admitted that his ideas had undergone a change in this matter, and that now he believed that about thirty or forty cases of phthisis had arisen in the Brompton Hospital through contagion, during the time over which his research extended. This seemed to me so extraordinarily strange and surprising, for, besides the conclusions set forth in Dr. Williams' book, I heard him say in one of his lectures at the Brompton, in 1883, that not a single clear case of contagion had occurred in the wards of that institution, that I determined to write him and ask for the cause of this change of opinion on his part. I received his reply last October, in which he states that he has not changed his views on the infectiousness of phthisis materially, since he summed them up in the second edition of his work on "Pulmonary Consumption," pp. 87–89 (precisely that which I quoted), and that there are certainly no records to support the statement that thirty or forty cases of infection occurred in the wards of the Brompton Hospital. In fact, he says: "The evidence of the Brompton Hospital is all against infection, but we ought to admit that infection is possible through dried sputum under very exceptional circumstances, but that the slightest attention to cleanliness precludes any chance of this infection."

In this evening's discussion Dr. Flick again refers to this private evidence which he received from Dr. Williams, but he now states that instead of thirty or forty cases of phthisis which could be traced to infection in the Brompton Hospital, during the time referred to there were only fifteen or twenty. It seems to me, therefore, that for the sake of scientific accuracy, and for the purpose of enlightenment, Dr. Flick ought not to withhold from us any longer the information which he claims to possess on these contradictory points.

DR. FLICK—The statements which I made are contained in an article by Dr. Williams, which appeared in the *British Medical Journal*, Sept. 30, 1882.

Dr. Charles W. Dulles—This is a discussion in which exactness is of great importance, and in which approximate figures and inferences must not be permitted to take the place of actual numbers and of facts. The danger of venturing on unfamiliar ground is exemplified in the comments on what Dr. Cleeman has said in regard to typhoid fever. Those who have specially investigated the sanitary condition of Philadelphia and the condition of its water supply know that what Dr. Cleeman says on these subjects can be relied upon, for he has given to them unusual and unusually conscientious study.

Although when I came here I had no idea of speaking, I think it might be said for some who have so far kept silent, that we do not tonight hear for the first time of Cornet, or of the Brompton Hospital and Dr. Williams, or of the Ventnor Hospital. The facts and theories emanating from these are all things about which we know something and about which we have already opinions.

In regard to the improbability of the effectiveness of measures of inspection instituted by the Board of Health, I agree with Dr. Walker. We have all probably had personal experience of the unsatisfactory way in which the Board of Health carries out its regulations in regard to diseases now returnable as contagious.

In passing upon the question before us, I feel sure that the College will act in keeping with its traditions of a hundred years, and give a new illustration of the fact that it is a body in which prudent and conservative counsels prevail, and I have no fear that it will hastily commit itself, as a sister society has done, under the ingenious arguments of those strongly infected with the idea of the infectiousness of tuberculosis.

A vote was then taken on the amendment offered by Dr. Flick; it was lost, and the original resolutions, as proposed by the Council, adopted, the President being requested to appoint a committee of five to present them to the Board of Health.

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

The Third Annual Meeting Held in Chicago, Sept. 12, 13 and 14, 1893.

AUGUSTIN H. GOELET, M.D., President.

(*Continued from page 168*).

SECOND DAY, SEPTEMBER 13—AFTERNOON SESSION.

The meeting was called to order at 3:10 P.M.

THE INFLUENCE OF FREQUENCY OF INTERRUPTIONS AND CHARACTER OF INDUCED CURRENT WAVES UPON PHYSIOLOGIC EFFECT.

Discussion opened by WILLIAM J. MORTON, M.D.

Some months since, when I gladly consented to open this discussion, I had made arrangements with a distinguished electrical engineer to experiment in his laboratory with periodic currents in relation to the frequency and the character of the induced current wave, but his illness has rendered this impossible.

I must content myself, therefore, at present with a very brief opening.

For convenience, at the outset, we may put the question in a simpler manner and ask, what is the physiologic effect of induced currents, referring to induced currents which have not been rectified into continuous currents, but still retain their fundamental periods, whether these be alternations or intermittences. An attempt to answer this general question is facilitated by an analysis of induced currents into two of their prominent characteristics, designated by the title of this discussion, namely: *a*, the frequency of their periods in a given time, for instance, per second; *b*, the character of the induced current wave.

The frequency of the periods of the induced current is originated in two ways:

1. By mechanical devices, as in the induction coil and in the alternating and intermitting dynamo-electric machine.

2. By a natural law of electro-physics as in the oscillating discharge of condensers:

The character of the induced current wave is identified by mechanical devices which record the rise and fall of its potential and other of its characteristics, upon the Marey registering drum or other registering apparatus.

We have, therefore, at our disposal three mechanisms, artificial or natural, or both combined, for exciting induced currents; these are: 1, the induction coil; 2, the dynamo-electric machine; 3, condensers (Leyden jars, etc.)

1. The induction coil.

The induction coil has long been in medicine a therapeutic means of exciting physiologic effect. This effect in the main has been to stimulate the motor and sensory nerves, namely, to produce powerful muscular contractions and to produce pain. In recent years physicians have given attention to improving the induction coil and we have heard much about the "long and fine wire" and the "short and coarse wire" secondary windings and their effects. But such modifications as regards the length or fineness of the wire of the secondary coil is of little account in advancing our knowledge of induction coils. For, in fact, familiar as this little instrument is to all of us, it is yet full of difficulty and unsolved problems. Elements of difficulty are the "lag" between the primary and secondary, the self induction in each, the effect of the magnetic resistance of the iron core or magnetic "lag" and the difference in the wave-curve of magnetization and demagnetization, and the irregularities of the vibrator; again, the frequency of the interruptions of the current in the primary circuit is limited by reason of the delay in magnetizing and demagnetizing the vibrator, ranging from 200 to 2,000 per second. We are furthermore ignorant of the character of the induced wave of the induction coil.

I find a record of the graphic curve of coils in the *Electrical Engineer* of Aug. 3, 1892. The experiments were made with the apparatus of Dr. Frolich of Messrs. Siemens & Halske of Berlin. The induction coil was so arranged that the core which consisted of a bundle of iron wires, could be removed at will. The two windings were precisely similar and consisted of 4,900 turns of wire, the resistance of each being 200 ohms.

CORE REMOVED.

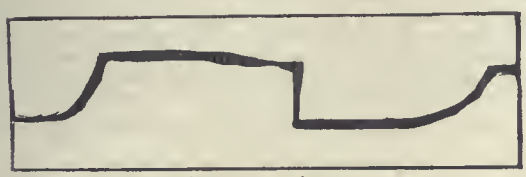


Figure 15. Primary.

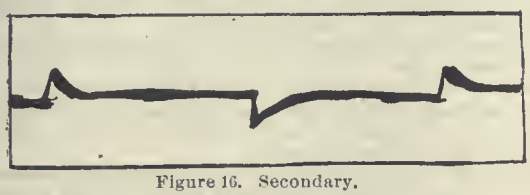


Figure 16. Secondary.

Fig. 15 shows the curve of the current in the primary winding with core removed, while the secondary current is shown in Fig. 16. In this case the primary current attains its maximum quickly while the induced secondary, changes as quickly as did the current in the case of a condenser without resistance.

CORE IN POSITION.

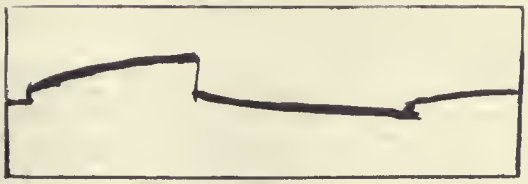


Figure 17. Primary.



Figure 18. Secondary.

Figs. 17 and 18 represent the primary and secondary respectively, with iron core in position. The effect of the core is very marked. The primary current gradually attains its maximum on making the battery current. By breaking the battery current and short-circuiting the primary coil on itself the current gradually falls to zero.

The secondary does not, as in the case without the core, suddenly fall away, but as one would expect, it gradually falls to zero.

In these experiments the time of a complete impulse was from 1-10 to 1-20 second.

It is a matter of congratulation that we shall have a paper upon induction coils presented before us by so able an electrician as Mr. A. E. Kennelly. What he has to say will fill many gaps left open in this discussion.

Medically we have apparently reached, and long ago, our limits in the effects to be expected of induction coils; we stimulate motor and sensory nerves, we increase metabolism, to the extent that muscles, caused to contract, increase it; we do not yet get pronounced sedation unless Dr. Hutchinson can demonstrate his electrical anesthesia.

To increase the precision and usefulness of periodic currents in medicine we must carefully study the form of the current wave. We must turn to other apparatus, other electrical or mechanical devices. This is what Prof. A. D'Arsonval of Paris, has done and with remarkable results, namely, the development of the sinusoidal current in new and unexpected relations to physiologic effect and its introduction into medicine.

Desiring to get a true sine curve he discarded iron in his armature and caused a magnetic field to be revolved close to a stationary wire coil without iron core; desiring to increase his frequency of alternations he was enabled to do so with the same mechanism by increasing the rate of its revolutions. He was able to reach a speed of 10,000 alternations per second.

And this is what he has taught us of the sinusoidal current of low frequency, (50 to 60 per second). The nerve and the muscle are not excited, there is neither pain nor muscular contraction, but a remarkable effect occurs, the nutritional processes of the subject are stimulated, the internal respiration or interchange of material between the blood and the tissue is increased to the extent that the amount of oxygen consumed is augmented by nearly 50 per cent. while there is likewise a correlative increase in the carbonic acid and urea excreted.

And, concerning the physiologic effects of increasing the frequency, the following interesting data were established. At 20 to 30 excitations the muscle is tetanized; the tetanization reaches its maximum at 2,500 to 5,000 excitations per second, and from this point the energy of the muscular contractions gradually diminishes up to 10,000 per second where it is *nil*.

In other words the neuro-muscular excitability, after a certain maximum is reached diminishes with the increase in the frequency.

Now this is a remarkable fact, and one which the expert electricians, interested in developing the resources and particularly the *safety* of industrial alternating currents had not been slow to observe. The fact may be expressed crudely in this way. Of two currents which are delivering exactly the same total amount of energy to a living person or animal, the one an alternating current infrequently alternating (100 to 10,000 per second), the other frequently alternating (10,000 to 1,000,000 per second); the former or

the one with long periods would instantly kill the person while the latter with short periods would be harmless, or indeed if carried to the highest frequencies would produce no sensations whatever.

It is here purely a question of *physiologic* effect for these same innocuous currents exhibit torrents of sparks, cause incandescent lamps to glow and perform other mechanical work. But the nerves and the muscles are not excited.

In one of D'Arsonval's experiments six lamps of 125 volts and 0.8 ampères, were brought to incandescence held in a circuit formed by the arms and person of the subject, the latter experiencing no sensation due to the passage of the current. The amount of energy traversing the body was 900 volts and 0.8 ampères = 720 watts.

But the facts of the experiment have led us a little in advance. Prof. D'Arsonval, as has been seen, did not cease his labors with a frequency of 10,000 per second.

His next step was to go beyond this frequency. And in taking this step he approached the labors of others, like those of Elihu Thomson, Dr. Tatum and Nicola Tesla, with a remarkable simultaneousness in time, and some of them like those of Morton, anticipatory in some essential features by thirteen years. He stepped into the region of high frequency high potential currents.

A brief glance at the historical sequence, the mechanisms and the physiologic effects of each observer will here suffice to point out the interesting and new field laid open to electro-therapeutics by the changes in the element of frequency as well also as in that of the graphic curve, could that always be ascertained.

The high frequency high potential current by aid of discharging rods and a condenser in the primary circuit was first discovered by Dr. W. J. Morton in 1880. His mechanism, then published, is the fundamental electrical mechanism necessary to produce these currents, now so thoroughly familiarized by the labors of Tesla, Elihu Thomson and D'Arsonval. In a paper read before the New York Academy of Medicine, March 3, 1881, and printed in the *New York Medical Record*, April 12, 1881, Dr. Morton described "A New Induction Current in Medical Electricity," derived from an influence machine, (Holtz machine). The current was obtained by the aid of Leyden jar condensers, one attached to each prime conductor. Rheophores and wet sponge electrodes were connected to the outer coatings of the jars and the discharging rods were approximated without quite touching. Upon actuating the Holtz machine a person holding the electrodes received a peculiar current causing widely diffused muscular contractions with a minimum of pain to excessive currents followed by a marked analgesic effect in the parts treated. These effects were carefully noted. Again in December, 1890, Dr. Morton read a second extended paper upon the same subject before the New York Neurological Society. (*New York Medical Record*, Jan. 24, 1891.)

The following diagram among many others was used to illustrate the connections to produce this high frequency high potential current:

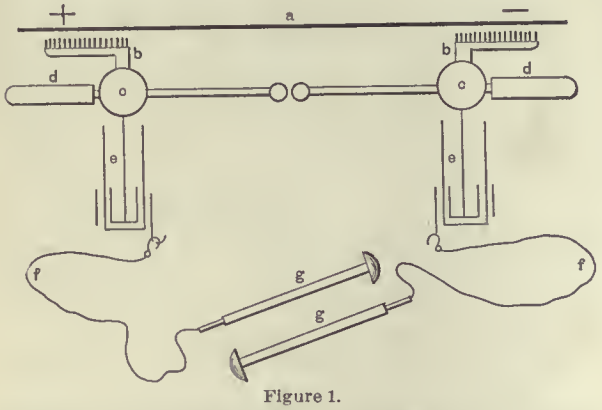


Figure 1.

"Static Induced Current." Person, condenser and circuit-breaker in same circuit, connecting-rod between condensers removed, and discharging-rods of machine serving as circuit-breaker. The make and break in the primary is accompanied with a current in the secondary.

The interesting feature of this publication is that in 1881, Dr. Morton had already discovered the method of producing a secondary current of high frequency and high potential by means of a primary circuit which included discharging rods (with air gap) and condensers in this circuit, and had pointed out peculiar physiologic effects.

Referring to the sensory effects of the current it was remarked: 1, that it fails to excite, or may even annul, to an extent, the sensation of pain and that there was experienced a peculiar sensation of lightness and buoyancy and a feeling as if the arms were made of cork, while of the effects upon the muscles it was noted that: 2, a great diffusiveness of the action, whereby large groups of muscles were simultaneously caused to contract with a minimum of pain.

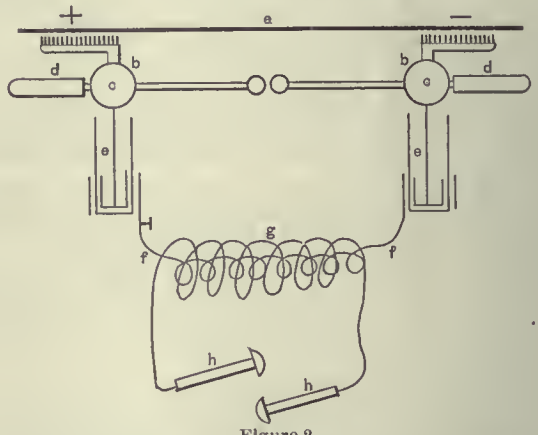


Figure 2.

Figure 2 represents one form of Dr. Morton's transformer. A primary wire extends between the two outer coatings of the Leyden jars and this primary is surrounded by the secondary. Oil insulation is used. This apparatus was constructed many years ago and in several forms by the Waite & Bartlett Manufacturing Co. of New York, but was only described publicly in a paper read at Columbia College, before the New York Electrical Society and the American Institute of Electrical Engineers, May 17, 1893. This paper has appeared in their transactions.

Dr. Morton also exhibited at the Columbia College meeting alluded to, the illumination of vacuum lamps, having one entering conductor and a second of tinfoil upon the outside of the globe.

Tesla's first publication was in the *Electrical World* of Feb. 21, 1891, under the title of "Phenomena of Alternating Currents of very High Frequency." He made this interesting concluding observation: "The writer's experiences tend to show that the higher the frequency the greater the amount of electrical energy which may be passed through the body without serious discomfort."

Mr. Tesla's mechanism consisted of a high frequency dynamo-electric machine whose current enters a primary wire, a secondary wire within whose circuit is included a condenser and discharging rods, and again a coil to which a part of the secondary wire acts as primary.

The current produced after this special method has not been tested in medicine.

Prof. Elihu Thomson at just about the same time was engaged in studying the physiologic effects of increasing the frequency of the periods. His apparatus consisted of an alternating dynamo machine having 800 armature coils and capable of producing 8,000 alternations per second. This machine was intrusted to Dr. Edward Tatum of Yonkers, N. Y., who conducted extensive physiologic experiments with it.

Dr. Tatum's report, embodied in a letter to Prof. Thomson, Dec. 29, 1890, and published in March, 1891, brought important facts to view, and deserves much higher recognition than it has received. He established:

1. That the fatal effects of alternating currents upon animals were in inverse ratio to the frequency.
2. That the cause of pain which limits voluntary toleration lies chiefly in the muscular contraction produced.
3. That the cutaneous nerves were distinctly less painfully affected at the high rate.
4. That the visual mechanism was not excited at the high rate even by a pressure of 15 volts so as to cause a sensation of flashes of light, although two or three volts similarly applied at 120 oscillations caused such flashes very energetically.
5. That the sensation of vertigo produced by the low rate was not produced by the high.
6. That sensations of taste were absent to the high rates.

7. That exposed motor nerves of frogs were less excitable to the high rate than to the low rate.

The fact that when the number of oscillations is extremely high there is no excitation of the nerves and muscles, D'Arsonval communicated to the Biological Society of Paris, Feb. 24, and April, 1891. His recent conclusions as to the physiologic effects of high rates of frequency are:

1. No effect upon the organs of feeling.
2. No muscular contraction.
3. Diminution of the sense of pain.
4. Dilatation of the blood vessels.
5. Increased perspiration.
6. Increased tissue change, manifested by increased absorption of oxygen and increased elimination of carbonic acid.
7. No increase of bodily temperature.

As to why periodic currents excite nerve and muscle in inverse relation to their frequency, we are confronted thus far, for answer, only by hypotheses. Prof. Houston believes it is because currents of this nature do not sufficiently penetrate beneath the surface of the conductor. Prof. D'Arsonval offers as explanation that the nerves and their centers, if not all the tissues, respond only to excitations of a certain frequency and that, therefore, if these currents fail to excite pain or contraction, it is because their periods do not coincide with the periods of the nerves producing pain and contraction.

Other explanations not here essential to adduce have been offered.

It will, however, be borne in mind that though nerve and muscle may not be stimulated so as to produce pain or contraction, still there take place other effects of far higher importance, viz.: stimulation of the nutritional processes of life.

Dr. Morton then exhibited a medical induction alternator devised by Mr. A. E. Kennelly at his suggestion.

This small medical alternator has twelve poles; each pole is wound with a primary and secondary winding on one spool. The exciting current in the primary circuit is less than one ampère; frequency, twelve periods per revolution; speed attainable, 6,000 revolutions per minute; frequency attainable, 1,200 periods per second; armature of laminated iron plates, running in self-oiling bearings; field frame, laminated sheet iron supported in cast iron guides.

Dr. Morton also presented a wheel, or mechanical means of securing sinusoidal interruptions from galvanic batteries, and for operating faradic machines, devised by Mr. R. G. Brown, electric engineer, for him.

The apparatus consists, as you see, of some forty contacts or segments arranged in a circle and insulated one from the other. Projecting through the center of the circle there is a shaft carrying an arm to the end of which is affixed a small, flexible wire brush, so adjusted as to rub over the face of the segments. On the end of the shaft there is a pulley wheel, and this was connected by belt to an eighth of a horse power motor making 1,500 revolutions per minute. Now, beginning at one point of the circle and numbering all the segments from one up, all those of even numbers were connected together and carried to a positive battery, while those segments of uneven numbers were similarly connected to a negative battery—each of three cells Leclanchè. One end of the primary coil was then connected to the trailing brush and the other end of the coil connected to the other end of the batteries. It will be readily seen, that as the trailer rotates over the forty contacts or segments, this primary coil will be successively charged with positive and negative currents—20 + and 20 —, and as the trailer is making 1,500 revolutions per minute, we have 40 times 1,500, or 70,000 alternations, *each* of *equal* duration, passing through this primary coil.

Another experiment was made, in which a single battery and only one-half the number of segments were employed. The segments of even numbers were connected to one pole of the battery, the intervening segments being left disconnected. With this arrangement the action is similar to that derived where an ordinary vibrator is employed, *except* that the "make" and "break" is of equal duration.

No more important question has ever arisen in electrotherapeutics than the one presented under the title of this discussion. It is natural that considerable confusion will arise and many conflicting statements be called forth in this, the first attempt to elicit a general expression of opinion upon a subject still in embryo in its physical, and equally undeveloped in its physiologic principles. We can only begin this work at this meeting.

Heretofore with a long fine wire coil, patients have obtained relief in a great variety of cases. Dr. Morton's personal experience with the sinusoidal current entirely verifies the claims made for it by D'Arsonval that in this current electro-therapeutics gains the most important addition made to it in recent years. And he believes that the sinusoidal apparatus must eventually, to a great extent, replace the induction coil.

Mr. A. E. Kennelly's paper on

INDUCTION COILS,

was then read by Mr. E. M. Smiles.

Induction coils are instruments in which electro-motive forces are generated by the variation of their permeating magnetic flux. They were first constructed by Faraday in England, and Henry in America, and are now familiar to us under numerous variations of form and design; but with little variation in their fundamental principles, which we propose to here consider with special regard to apparatus employed in electro-therapeutics.

Every magnet, or every current-conveying helix acting like a magnet, has, we know, its complete magnetic circuit. In other words, magnetic flux knows no terminus, and is arrested by no barrier, but always appears in closed paths or reëntrant channels. If a small compass needle could be advanced along the direction that it selects from instant to instant, it would in any constant magnetic system, travel round and round some loop in space, unless arrested in its passage by geometrical barriers such as the iron core of an electro-magnet. By tracing out a sufficient number of such loops or flux lines in different portions of the magnetic field, we should come to regard the magnetic circuit as resembling a bundle of numerous separate and invisible endless chains densely packed within the magnet, but spreading out beyond its ends.

An electrical conductor, e. g., a copper wire, encircling all the flux lines of such a magnetic circuit without threading through any, is apparently unaffected by their vicinity, but so soon as it passes once (or some odd number of times) through flux lines, thus becoming linked with them, its electrical condition is influenced by their presence. No change can be detected in the wire, so long as it remains at rest relatively to the flux chains, but should motion take place between them in such a manner that the wire becomes linked with more or fewer chains, or should the magnetic circuit so alter as to increase or diminish the flux lines linked with the wire, an electro-motive force becomes developed along the conductor during the motion. Increasing the linkages of flux develops an electro-motive force in one direction through the wire, while decreasing the linkages sets up the reverse. The electro-motive force will produce a current of electricity through the wire if the circuit of the latter be complete.

The magnitude of the electro-motive force developed in such cases is readily determined. Suppose a copper wire to be bent into a loop with its ends in close proximity, but not actually in contact, so that no current can be sustained in the wire. If we take this loop from some position in which it was linked with 50,000,000 units of magnetic flux (50,000,000 of unit magnetic chains), and deposit it in such a position that it is linked with 150,000,000 units, then the increase in the flux linkages to the extent of 100,000,000 units will establish an electro-motive force in the wire during the transfer. Assuming that the operation lasted for one second of time, and was so controlled that the rate of flux admission or linkage increase was uniform, then the electro-motive force in the loop would be maintained at one volt throughout the motion, for by definition the volt is the electro-motive force induced in an electric circuit when magnetic flux enters it at the rate of 100,000,000 of units (C. G. S.) per second. Had the transference been effected in the one-thousandth part of a second, the rate of linkage would either have been uniform during that time, and equal to 100,000,000,000 units per second, or variable but averaging this amount, so that the electro-motive force induced in the loop would either have been steady at 1,000 volts, or variable but averaging 1,000 volts during the same interval. But although the magnitude and the character of the induced electro-motive force thus depends upon the manner in which the transfer takes place, the total quantity of electricity that this electro-motive force can deliver through a constant resistance is unaffected by the circumstances of the motion. For if the ends of the looped wire are connected through a fixed resistance, a rapid transfer will induce a large electro-motive force, and accordingly strong current of brief duration, while a slowly executed trans-

ference would entail a small electro-motive force and a feeble current through a correspondingly longer time. For a given admission or withdrawal of flux through the closed conducting loop, a definite quantity of electricity must flow round the latter, depending only upon its resistance.

These principles may be applied directly to the analysis of the ordinary Ruhmkorf or faradic coil. We may suppose this to be of the DuBois Raymond type, in which the outer and secondary coil slides freely over the inner and fixed primary coil. To simplify matters at the outset, we may first suppose that, contrary to usual practice, currents are supplied to the primary coil in such a manner that the flux in the magnetic current rises steadily and falls at a uniform rate, and with a definite number of alternations per second. The maximum flux through the magnetic circuit of an ordinary small faradic coil is about two thousand units, so that if this flux made 500 alternations or 250 periods per second, the condition of the magnetic circuit in regard to time may be represented by the zig-zag line in upper Fig. 1, oscillating between 2,000+ and 2,000— in the five-hundredth part of a second, corresponding to a rate of change in flux of 2,000,000 units per second. A single turn of secondary conductor closely surrounding the primary coil and core at the center of length, would develop, if linked with all these flux lines, an induced electro-motive

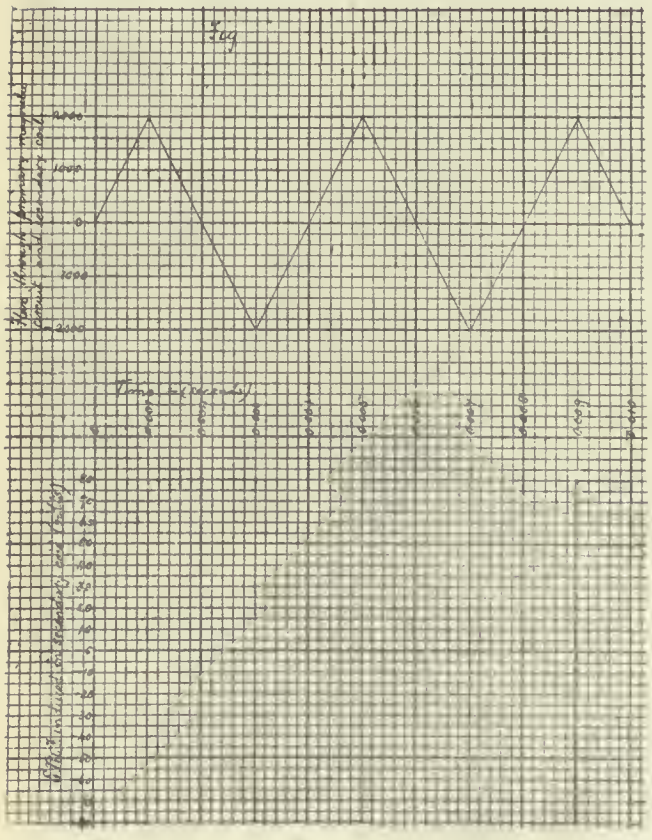


Figure 1.

force of $\frac{2000000}{10000000000} = 0.02$ volt, and suppposing that the secondary coil consisted of 4,000 turns all embracing the same flux, the total electro-motive force induced in the coil would be 80 volts, alternately positive and negative at a frequency of 250 periods. as shown in lower Fig. 1.

When the secondary coil is entirely removed from the primary, the electro-motive force induced in it must disappear, and even when placed immediately over the primary in the most effective position, the electro-motive force developed in every turn will not be quite equal. The flux through the iron core diverges in snch a manner that the turns near the ends of the secondary coil are not linked with so much flux as those at the center and inner layers. This is shown diagrammatically in Fig. 2, where P, Q, represents a longitudinal section of the iron core through its axis, and A, I, B, C, K, D, E, I, F, II, M, G, the section of a secondary coil. The turns at the outer edges, AG and BH, have a much smaller share of the total flux linkage, than turns at the center at L, K. If, then, in the preceding case the most favorably situated turns developed an induced electro-motive force of 0.02 volts each, the aggregate electro-motive force would be less than 80. volts.

It is evident, therefore, that the induced secondary electro-motive force for a given arrangement of core, primary, and winding space, depends upon the number of turns in the secondary coil. A large number of turns necessitates the use of fine wire of great length and high resistance, but these are incidental qualities only. Fig. 2 shows that with a given winding space or length of wire, there is a gain in electro-motive force, obtained by slightly piling up the turns at the center and denuding the ends of the coil, thus securing the maximum total flux linkage, but the advantage is not usually considered of sufficient importance to pursue.

We may now replace the arbitrary primary current supply with the usual battery and spring vibrator. The frequency of vibration will depend upon the length and cross section of the spring, the elastic quality of its material and the mass and form of its iron armature or head. These conditions determine the fundamental or free vibration, but we know that forced vibrations can also be produced, whose frequency depends upon the strength and graduation of the magnetic flux, the position of the contact point, the play of

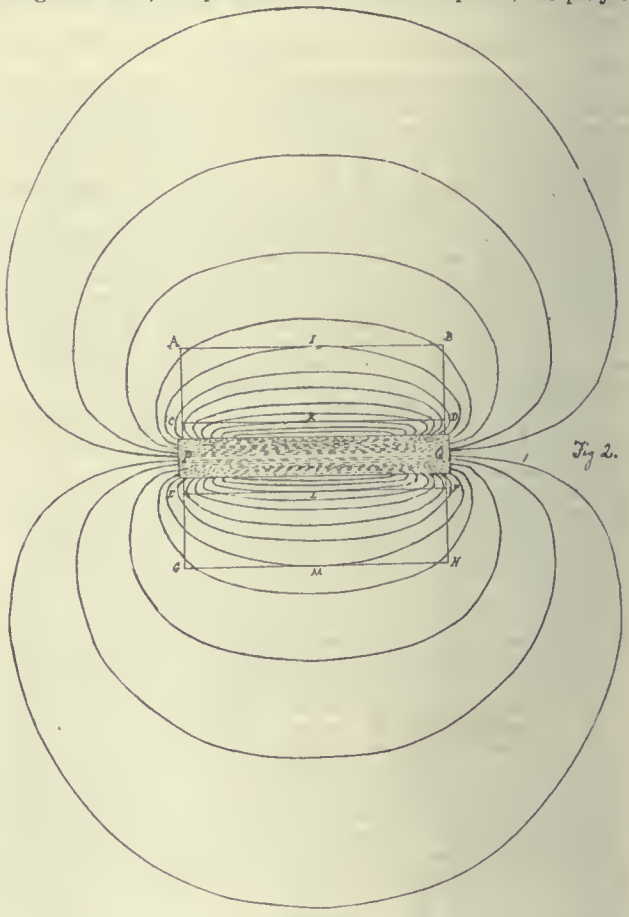


Fig 2.

Figure 2.

vibration allowed, and the tension imparted to the spring. Under any circumstances, however, the spring rests in contact with the platinum faced screw point during a certain fraction of each vibration, and the current from the battery finds access to the primary coil spring during this portion of the cycle. The primary current does not, however, instantly reach its full value, for that would entail a nearly instantaneous culmination of the flux, and a brief but enormously high induced electro-motive force in the secondary coil, contrary to observation. As soon as the primary current commences to flow, flux springs into existence in the magnetic circuit. This flux penetrates the convolutions of the primary winding, as well as those of the secondary, and consequently developes in the primary coil an electro-motive force always in opposition to that of the battery. This counter electro-motive force of self-induction retards the growth of the primary current and magnetic

flux, which then increases at a rate determined by the elec trical conditions of the complete circuit.

As soon as the vibrator spring leaves the contact point, the primary circuit is metallically disconnected. If the primary current stopped instantly, the flux in the magnetic circuit would almost instantly disappear, entailing an enormously great but brief induced secondary electro-motive force in the opposite direction to that on making contact. This fails to occur, however, because the withdrawal of flux from the magnetic circuit not only induces electro-motive force in the secondary coil, but in the primary also, and in such a direction as to sustain the battery current. A spark therefore forms at the break, and through the column of heated air the primary current is for a short interval sustained. The result is that the flux is withdrawn from the circuit not instantaneously, but more rapidly than it entered, and it is well known that the induced electro-motive force of "breaking" is much greater than that at "making."

These conditions for the case of a vibrator making 100 periods per second is shown diagrammatically in Fig. 3. The broken line ABCDEFG represents the relative magnitudes of the primary current and the circuital flux during 0.016 second or about one cycle and a half. The vibrator spring

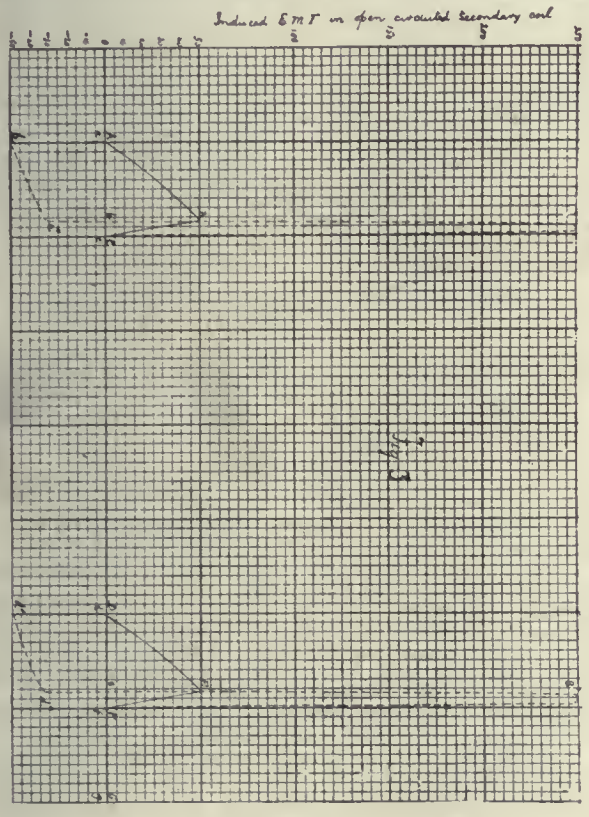


Figure 3.

makes contact between A and B during the sixth part of the cycle, and the current and flux ascend the curved line AB. The spring then leaves the contact and the current and flux fall rapidly to the zero line at C. The dotted line a, a', a" b,c,d, d' d", e,f,g, indicates the corresponding induced electro-motive force in the secondary but open circuited coil. At the moment of contact, a, the induced voltage becomes — 50, and at the moment of breaking contact has fallen to — 35. Immediately the break occurs, the electro-motive force rises quickly to about 250 volts, and after a brief interval falls again to zero. The wave of induced electro-motive force is quite unsymmetrical with respect to the zero line, but the area a, a,' a," b, is equal to the area b, b', c.

Having outlined the electro-magnetic condition of the faradic coil while the secondary coil is disconnected, we may now consider that the secondary circuit is closed through an external resistance.

Currents will now flow through the secondary circuit and circulate round the secondary coil. These currents will generate a new magnetic circuit just as though this coil were excited by those currents as an independent primary. The oscillation of this new flux will induce new electro-motive forces both in the primary and secondary circuits. In the primary the current from the battery will be correspondingly modified during the periods of contact. In the secondary the new electro-motive force known as the counter electro-motive force of self-induction, will always oppose and reduce the main induced electro-motive force, but the balance of the latter will be available for producing currents in the secondary circuit.

For a given external resistance in the secondary circuit, these conditions rapidly arrive at mutual adjustment, such that the primary current at any instant during periods of contact, follows Ohm's law, when the counter electro-motive force of self-induction, and the electro-motive force induced by the secondary currents, are deducted from the electro-motive force of the battery; also the secondary currents at any instant follow Ohm's law, when the counter electro-motive force of self-induction is deducted from the electro-motive force induced by the adjusted primary current.

These conditions, varying with the character of the external secondary circuit, however readily apprehended in the main, are difficult to determine in accurate detail, by either observation or computation. Broadly, however, the effect of loading the secondary circuit of a faradic coil by reducing the external secondary resistance, is to increase the main strength of the primary current supplied, to prolong

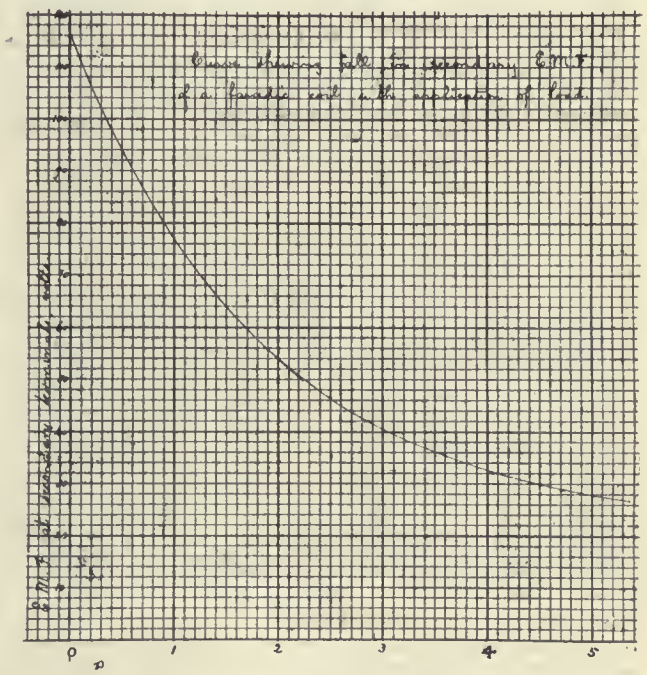


Figure 4.

the duration of the secondary current waves, and to diminish the effective secondary electro-motive force.

Fig. 4, indicates the latter influence as observed in a sample faradic coil whose vibrator made about 150 periods per second.[1] The effective electro-motive force at secondary terminals was 116 volts on open circuit, but when the external resistance was gradually reduced to 5,600 ohms, and the secondary current raised to 5 milliampères, the terminal electro-motive force fell along the curve to 28 volts. That is to say, 28 volts continuously sustained on the 5,600 ohms would generate through that resistance the same amount of heat in a given time as the very variable electro-motive force then active at secondary terminals. The fall of secondary pressure with load was here almost entirely due to the counter electro-motive force of self-induction, aided by the influence of secondary reaction on the primary circuit, for the drop of voltage due to 5 milliampères, the strongest current shown, would only have amounted to 1.4 volts, in the resistance of the secondary coil, a comparatively negligible loss.

[1] This coil had a core 9.25 cms. long and 1 cm. in diameter, formed of iron wires 0.085 cm. in diam. weighing in all 52 gms. The primary coil had 90 feet, 330 turns, 0.76 ohm, and 7.5 millihenrys the secondary coil 1,100 feet, 3,440 turns, 285 ohms, and 456 millihenrys, the mutual induction was 111 millihenrys. The battery had an electro-motive force of 1.5 volts, and a resistance with leads of 0.35 ohm.

The secondary electro-motive force of faradic coils can only be accurately measured by electrometers or electro-static methods, since the feeblest measuring current in the secondary coil exercises so powerful an influence upon apparatus of this size. It is usually more important, however, to know the effective secondary current strength rather than the effective secondary electro-motive force. The duty of a faradic coil is only to supply a certain strength of alternating current, at a given frequency, and of a certain wave character, and the electro-motive force in the coil is merely an attendant property for the production of that current. Any strength and frequency of current within the usual limits can be provided for in design, but probably no two coils give precisely similar wave characters. Short secondary windings with few turns, tend to generate abrupt and sharply varying currents, while long secondary windings with many turns, tend to deliver smoother and more slowly changing current waves, especially at high frequencies and on heavy loads. This is owing to the fact that their large number of turns entails a large linkage with their own flux, and any abrupt change in the currents they deliver sets up immediately a powerful induced opposing electro-motive force checking the variation.

The only advantages that can be gained by modifying the forms of faradic coils operated by existing types of spring vibrator, must be looked for in economy of weight or material, in convenience of operation, or in modification of current wave character. The disadvantage of the vibrator is the irregularity and dissymmetry of the currents it causes to be generated. The ordinary form of spring vibrator rarely supplies more than 250 periods per second, while ribbon vibrators in which the spring is clamped at each end, and capable of being tightened, enable frequencies of 1,000 periods to be readily attained, but the dissymetry and irregularity of current wave character must attach to both forms.

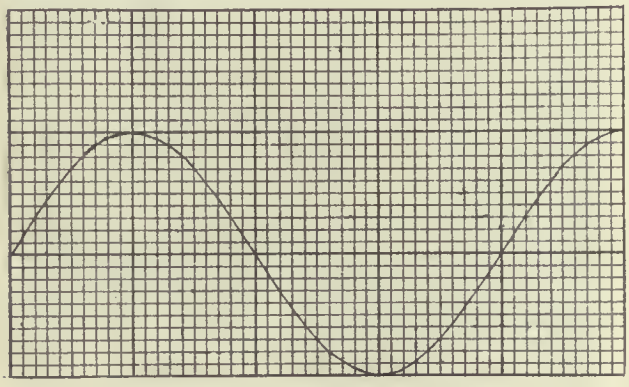


Figure 5.

For measuring the effective current strength in the secondary circuit, a sensitive electro-dynamometer calibrated for milliampères of alternating current is convenient, for the currents are usually feeble, and the resistance and self-induction of the measuring instrument should be reduced as far as possible.

The simplest form of alternating current wave type is the sinusoidal, or simple harmonic wave, represented in Fig. 5. This wave possesses several remarkable properties. It conveys, for example a given quantity of electricity, at a given frequency, with the minimum possible average abruptness or rate of change in current. It is also a persistent form and difficult to destroy. A sinusoidal electro-motive force acting upon the primary of an induction coil, will induce exact or very nearly exact sinusoidal waves of current and induced electro-motive force in the secondary circuit, thus greatly facilitating all measurements, deductions, and reproductions. If an effective current strength of 5 milliampères be supplied by the secondary of an ordinary faradic coil at a frequency of, say, 250 periods there will be considerable uncertainty as to the current wave character and as to the maximum values of current during the cycle, but if the primary coil were excited from a source of sinusoidal currents at the same frequency, all the particulars of the current delivered would be accurately determinable and reproducible. Five milliampères of a sinusoidal alternating current, as measured by a properly calibrated instrument, would always accompany a maximum current in each wave of 7-07 milliampères, but 5 milliampères of current from the ordinary faradic coil might require maxima of 10 milliampères negative, and 70 milliampères positive, in each cycle.

IN MEDICAL INDUCTION COILS, HOW DOES THE CURRENT OF THE PRIMARY DIFFER FROM THAT OF THE SECONDARY? AND WHAT INFLUENCE HAS THIS DIFFERENCE UPON THE RESPECTIVE PHYSIOLOGICAL EFFECTS?

By H. NEWMAN LAWRENCE, Esq. of London, England, was then read by the Secretary in the absence of the author.

I will assume that the currents I am asked to speak about are obtained from an ordinary well made medical coil wherein the primary and secondary helices are quite separate from each other, and the wire of the former is short and of low resistance, while that of the latter is long and of high resistance. Further, that the rate of vibration does not exceed 200 per sec.

Such coils are transformers of electrical energy and not producers of it. They transform a current of low voltage and (comparatively) large ampèrage to one of (comparatively) high voltage and small ampèrage. In this process a portion, often as much as a third or even more, of the initial energy put into the coil is lost in the act of transforming.

The primary current consists of continuous current from the charging source, be it battery or direct current dynamo, interrupted by the vibrator and also possessing the extra current of self induction. The charging current can be measured, both as regards voltage and ampèrage and thus the initial energy put into the coil is arrived at.

The secondary current is a series of alternating impulses derived by induction from the primary, and depending for the form of its resultant energy, i. e., the relative values of voltage and ampèrage, upon the number of turns it makes round the primary, the strength of the charging current and the rate of interruption of the vibrator.

The difference between the two appears to be:

a. As regards direction.

Primary—Flows in one direction, though interrupted at intervals.

Secondary—Flows as a series of impulses, alternating in direction and more or less interrupted owing to the interruptions of the primary. Quite interrupted at low speed vibrations, but wave-like or undulating at high speed.

b. As regards voltage.

Primary—Comparatively low voltage, say 50 volts.

Secondary—Comparatively high voltage, say 300 volts.

c. As regards ampèrage.

Primary—Comparatively great ampèrage say 500 ma.

Secondary—Comparatively small ampèrage say 7 ma.

Perhaps a few figures will help illustrate the transformation of electrical energy in a coil.

Assume that our coil has a maximum of 12 ohms in primary and 1,000 ohms in the secondary.

The initial energy is 500 ma. at 6 volts = 3 watts. This when transformed in the primary by self induction may become 60 ma. at 50 volts or thereabouts.

The secondary, taking the total loss of energy as a third will give out 7 ma. at 300 volts, which equals 2 watts.

Taking these figures as an example it will be seen that the arrangements of the primary current are such that increased ampèrage is obtainable almost up to the full amount in accordance with the possible reduction of a patient's resistance. In saying this, however, we must not overlook the fact that the patient is not put into the direct current but into a loop or shunt circuit and consequently only receives such ampérage as belongs to the shunt in inverse proportion to the resistance in it, i. e., of the patient, electrodes and connections.

In the secondary the resistance of the patient is not of so much importance, as the values of ampèrage and voltage are such that the maximum of the former is decidedly small and the discharge in this respect approximates to that of a static machine.

Physiological effects.

Primary—*Electrolytic* owing to its flow in one direction, but this effect must be small, owing to the interruptions. *Cataphoric* to a like extent and for the same reasons. *Muscle contracting* by reason of the interruptions, these contractions being distinctly painful owing to the sharpness of the interruptions and the strength of ampèrage.

Secondary—Neither *electrolytic* nor *cataphoric*, to any appreciable extent, owing to the alternations and the very small ampèrage. *Muscle contracting* by reason of the alternations, these contractions being less painful than those obtained from the primary, owing to the wave-like

character of the alternations and the very small ampèrage.

My experience is, that the muscle contraction may be produced by an infinitesimal ampèrage, provided it be sufficiently concentrated; and that the pain of such contractions increases with the ampèrage, other things being equal.

Speaking generally, therefore, when muscular contraction is required the primary current is the more painful to use; though at the same time, owing to its definite direction and cataphoric properties it may sometimes be found less painful than the secondary when applied to nerves.

The rate of vibration has a marked influence upon both the primary and the secondary, with their consequent effects; but it does not seem that one is affected by it more than the other, at any rate within the limit named (200 per sec.)

That effects of the electric energy of the secondary, presented as it is with an apparent superfluity of voltage and a corresponding paucity of ampèrage over and above those already referred to may exist, seems possible, but such existence is at present open to doubt.

Probably it is only by investigating the extreme of such condition, as illustrated by Teslaic coils or Dr. Morton's static induction currents, that this problem can be solved. The conditions in each case are similar, i. e., alternations, superfluity of voltage and paucity of ampèrage (these terms are here intended to refer to action upon the body only), and the difference seems to me to be merely one of degree.

In conclusion, I apologize for the sketchy nature of these remarks, but must plead that the subject is a very intricate one, both in its physical and physiological aspects; and that to do the matter justice would require a far abler pen than mine, with time and attention considerably in excess of the limits laid down for this discussion.

(To be continued.)

SCIENTIFIC OBSTETRICS IN PRIVATE PRACTICE.

Read in the Section on Obstetrics and Diseases of Women, at the Forty-fourth Annual Meeting of the American Medical Association.

BY EDWARD P. DAVIS, A. M., M.D.

PROFESSOR OF OBSTETRICS IN THE PHILADELPHIA POLYCLINIC; CLINICAL LECTURER ON OBSTETRICS AND GYNECOLOGY IN JEFFERSON MEDICAL COLLEGE, ETC.

If one were asked the meaning of the word, "scientific," a proper definition would be found in a phrase indicating the possession and dissemination of knowledge. A scientific journal is one that contains and disseminates knowledge of the subject of which it treats. Modern medicine is a science in so far as it contains valuable knowledge concerning human life and disease, and scientific obstetrics is the theory and practice of this branch of medicine, characterized by accurate knowledge.

In this one point of the possession or absence of accurate knowledge rests the difference between the obstetric practice common in the United States twenty-five years ago, and the theory and practice taught at the present day. Impressed with the ability of nature to deal successfully with the emergencies of labor, the practitioner who attended obstetric cases has been wont to comfort himself with the axiom that labor is a natural process, of which he need not seek to ascertain too minutely the details. The condition of pregnancy he regarded as naturally normal, and hence without especial tendency to disease. The lying-in period was to him a natural stage in the life of the individual, and required at his hands no especial scrutiny. An accurate diagnosis as to the factors present in a given labor was rarely made, unless some serious emergency arose.

There have been many reasons for this condition of affairs. The comparatively recent discovery of anesthetics placed at the disposal of obstetricians a means of diagnosis of inestimable value. The employment of antiseptics has rendered possible manipulations for the diagnosis and treatment of labor that formerly were impracticable. Methods of diagnosis are now commonly taught and practiced that, at the period mentioned, were only to be seen in practice in the large hospitals of Europe. Modern obstetrics has, then, great advantages in its opportunities to acquire thorough knowledge of the patient and of her labor, and this, too, without the infliction of additional pain, or the incurment of added risk to life. The characteristic of modern obstetrics is its scientific element, as shown in the accurate knowledge that it requires concerning matters formerly thought to prosper inevitably through the kind coöperation of nature.

Scientific obstetrics is the rule in the modern hospital, but it is often "more honored in the breach than in the observance" in private practice. The reasons for this are many. First, among all, is the common belief, derived largely from physicians and nurses, that, because labor is a natural process it is bound to proceed successfully without intelligent supervision. If this is true, why should a patient tolerate palpation, auscultation, or pelvimetry; or why should she take an anesthetic when the mechanism of labor is interrupted, and a thorough examination of the condition present becomes necessary? A common belief that has descended from the days of the early craniotomist, or man-midwife, as he was termed, is that any interference with labor means, practically, the use of forceps, and hence the objection to critical examination in an emergency. Again, it not infrequently happens that a complicated labor terminates spontaneously, and apparently with success to mother and child. It does not occur to the patient and her friends that complications may have arisen, by reason of the long continuance of the spontaneous labor, that could have been avoided had intelligent interference been practiced.

There is especial need for scientific obstetrics in private practice, because the practitioner is more directly responsible for the condition of his patient than when he is engaged in hospital practice. He lacks in private the experienced observation of trained nurses; he misses the intelligent coöperation of resident physicians; and experiences the great disadvantage that the absence of order and discipline, so common in a private house entails upon him. It is, therefore, especially necessary that he gain thorough knowledge of his patient by personal observation and study, and this knowledge is the essential of scientific obstetrics. The fact that the best results in obstetric practice are observed in hospitals, draws attention to the need for scientific work in private cases.

Omitting a consideration of the minor details of private obstetric practice, we urge the importance of a thorough examination by the practitioner of all pregnant patients. We are well aware of the fact that many cases are not seen by their attendants until labor is far advanced, and no opportunity has been given to examine the patient during pregnancy This is growing to be, however, less the case than formerly, and especially in first pregnancies, when the natural dread of an untried experience brings the patient to the physician comparatively early. This scrutiny of the pregnant patient should be directed especially to ascertaining the condition of the organs of elimination, and the success attending their action. The examination of the urine should be an invariable practice, and valuable information will be given by

ascertaining not only the presence or absence of albumen, but by careful microscopic study of the sediment, and also an estimation of the amount of urea excreted. In the Maternity Department of Jefferson Medical College Hospital we have for some time derived valuable information regarding a patient's eliminative powers by ascertaining the quantity of urea excreted. The presence of albumen is of itself a trifling matter, unless the microscope reveals evidence of decided structural change in the kidney.

At or after the seventh month of pregnancy it becomes the duty of the attendant physician to ascertain the mother's size, and the relative size of the fetus and the position that it occupies in the mother's pelvis. This is a procedure commonly thought unnecessary, and reserved for the lectures of those who teach obstetrics. That such is not the case is well exemplified by two fatal cases, seen by me recently in consultation, in both of which embryotomy upon the dead fetus was necessary. Two well-developed male children were sacrificed to a lack of diagnostic skill on the part of the medical attendant, and to complete the unfortunate history of those two cases, the lives of the mothers were lost on account of the stupid laziness of the physicians, who neglected to use antiseptic precautions during labor. In both cases the child had perished before the consultation, and the embryotomy was performed to spare the medical attendant from reproach and criticism for his failure to deliver the mother. These four lives could have been saved had proper precautions been taken.

The practice of general medicine, including obstetrics, in country towns or villages, often taxes to the utmost the skill and wisdom of the so-called "country doctor." As a result, he has a range of experience unknown to his city brother, and becomes by natural development more assured, self-reliant, and efficient. He is the man who, above all others, can appreciate the value of any method of practice that shall add to the positive knowledge he has of his patient. We do not ask him to provide himself with elaborate or costly pelvimeters, or instruments for diagnosis but, as is our custom in lectures at the Philadelphia Polyclinic, we do urge upon the general practitioner a knowledge and practice of palpation, auscultation, and of such a method or methods of estimating the size of the mother's pelvis and the relative size of the fetus as may be within the scope of his possibilities. No student graduates from a well-appointed medical college who is not in the possession of this knowledge, and certainly the general practitioner already established can not afford to be behind the recent graduate in his resources. The objections urged against the examination of pregnant patients, including the measurement of the pelvis, are based upon needless exposure of the patient, or rude and unskilful manipulation. We have yet to find a private patient, of whatever station in life, who offers the slightest objection when her physician asks that he be given an opportunity to acquire a knowledge that shall the better enable him to care for his patient, particularly if, by so doing, he subjects her to no exposure, nor to tedious and painful manipulation. The abdomen of the patient may remain covered by one thickness of cotton or linen, without in the least inconveniencing the physician, and medical students under my instruction are taught to make their examinations in this manner.

One of the great advantages accompanying this mode of practice is the lessening of vaginal examinations, which are a source of considerable danger to the patient. It is perfectly possible by palpation alone to follow the head of the child as it descends through the pelvic canal and impinges upon the pelvic floor. The character and efficiency of the pains of labor may also thus be accurately observed, and oftentimes, valuable assistance can be rendered by external pressure gently and judiciously applied.

When the mechanism of labor is interrupted, a thorough internal examination is at once indicated. This is often impracticable without the administration of an anesthetic. The practitioner should be prepared to interfere for the assistance of the patient. Forceps should be prepared and ready. The rectum and bladder should be emptied, and, while it is not necessary to state to the patient that an operation is to be performed, yet while she is under the influence of the anesthetic, it may be found wise to terminate the labor. It is often impossible to accurately diagnosticate a faulty position of the head without an anesthetic, the resistance and suffering of the patient being so great that sufficient of the hand can not be introduced to make a thorough examination. When, however, such an examination has been made, and before the examining hand has been withdrawn, the forceps may often be accurately applied to the sides of the child's head, and the labor brought to a successful termination. In other cases, version and extraction may be found necessary. In either event, examination of the patient under anesthesia will spare her hours of suffering, and will often save the life of an infant, and sometimes that of the mother.

The same thoroughness in treatment should obtain in the diagnosis and treatment of injuries to the genital tract. By the term, "laceration of the perineum," we understand a solution of continuity that extends more deeply than the posterior commissure or fourchet. We are aware that a laceration in the median line may extend beyond the fourchet, and still not impair the supports of the uterus to any appreciable degree. When we read and hear of large numbers of cases of labor in which no laceration of the perineum has occurred, we are impressed with the fact that those who record such extraordinary experiences either consider that a laceration of the perineum usually extends into the rectum, or else that they did not accurately examine the cases. The examiner may be readily deceived by a superficial examination by the finger only of the genital canal, soon after labor. Clotted blood often fills a torn surface, giving to the finger the same continuity of smoothness that marks the uninjured mucous membrane. It is only by the thumb and finger, one inserted in the rectum, or, better still, by actual inspection, that the condition of the genital tract after labor can be accurately ascertained. Considerable observation of labor cases, and the careful employment of the best known means for preventing laceration of the perineum, have convinced me beyond reasonable doubt that such an injury is inevitable in many cases. It is negligent not to discover it; it is lazy and dishonest not to endeavor to repair it.

Fortunately, in these matters, public sentiment is demanding the advantages of scientific obstetrics. We recently had occasion to tell a young woman that she had sustained a laceration of moderate extent that ought to be closed. She said that if such was the

case, she earnestly desired that it be at once repaired, as her sister had suffered from the neglect of her physician in not suturing a similar laceration. We are furthermore helped in dealing with these questions by the fact that experience shows us that excellent results may be obtained as late as twenty-four or thirty-six hours after the occurrence of a laceration. It is far better practice to give the patient and physician twenty-four hours' rest after a trying labor, and then, under anesthesia, or with the use of cocain, close a laceration under favorable circumstances, than to further exhaust a weak patient, and with poor light and laboring under great fatigue, to improperly perform the physician's duty. If torn surfaces are found glazed over, the simple expedient of scraping them with the blade of a pair of scissors, or with a curette, will suffice to secure union by first intention.

It is burdening you with a trite observation to speak of the importance of obstetric antisepsis or asepsis, and yet the same reasoning that enables the practitioner to assert that in his 1,000 cases he has never had a lacerated perineum, leads him likewise to claim that in his 1,000 cases he has never had a case of puerperal septic infection. He may have avoided signing a death certificate for a patient recently delivered, the certificate bearing the words, "peritonitis," "blood-poisoning," "inflammation of the bowels," or "puerperal fever"; but cases occasionally perish some weeks after labor, with "jaundice," "pneumonia," "congestion of the liver," or "malaria," that, on closer study will be found to be the results of puerperal septic infection. The faithful practice of aseptic or antiseptic precautions greatly lightens the load of responsibility that the practitioner of obstetrics must carry.

Not the least of the advantages derived from the scientific practice of obstetrics lies in the avoidance of interference by those who have no right to molest the patient. The practitioner's best efforts are often thwarted by ignorant and meddlesome persons. He can not, however, honestly forbid interference, unless he knows positively that there is no occasion to molest the patient. He will obtain the best results in obstetric practice who does the work himself, unless he can command, for certain things, the assistance of a trained nurse. Thoroughness in diagnosis, the faithful observance of antisepsis in treatment, and the protection of his patient from meddlesome interference, will give the best results. Such a method of procedure is thoroughly scientific, for it demands the best knowledge, the most careful and skilful manipulation, and, above all, an honest and fearless attempt to meet the difficulties that may arise. In the present stage of medical science, every woman has a right to demand such treatment, and if a practitioner of medicine can not give his patient such care, he must inevitably, by the inexorable law of the "survival of the fittest," give place to those who can.

PUBLIC HEALTH.

Woman's Health Protective Association.—At the recent Sanitary Convention at Harrisburg, a paper was read by the Director of Public Safety of Philadelphia, Mr. A. M. Beitler, in which he paid a handsome tribute to the recent public work of an organization, the Woman's Health Protective Association of Philadelphia, for the great interest they take in the city's cleanliness and for the success they have had in forwarding complaints to the proper bureau for registry. The Director of Public Safety believes that the women of Philadelphia, through this quite inexpensive organization, will yearly make their work tell on the city's good order and for the observance of sanitary regulations already provided; that they will be potent aids in preserving the health of Philadelphia. This city, by its plan, and its favorable building developments, of a single house to one family, should have the smallest death rate of any in the world, for in no large city are the bulk of the people so comfortably and decently housed. It only needs the education of the individual householder to do his or her part in every way, by vigilance and by voting, by setting an example both in personal care of premises and in reporting at once all nuisances in the neighborhood; an example, also, on the part of each voter in choosing loyal and business men to conduct the city's business in councils; it only needs this to have, in a few years, a transformed city, with clean water to drink, all places of pollution shown up and cleaned out, and not only the smallest death rate in the world, but the most comfortable city to live in. All of this the women may bring about if they will be ceaselessly vigilant and fearlessly outspoken.

Smallpox.—The Reading, Pa., Berks County Board of Health, reports that three new cases of smallpox occurred in that city during the two weeks ending Feb. 5, 1894. These cases occurred prior to Jan. 26, 1894. The total number of cases in that city since the outbreak in February, 1893, have been 713, with 18 deaths to date. Only seven cases are now in the Emergency Hospital, all of whom will shortly be discharged.

An outbreak of smallpox has occurred at Tyrone Forges, near Tyrone, Blair County. The inspector reports seven cases of smallpox and five cases of varioloid as existing on February 8th instant. This epidemic has been traced to Reading, Berks County. One fatal case of smallpox is reported at Puttstown, Bedford County, traced to Tyrone. One case of smallpox exists at Williamsport, Lycoming County, origin not known, and one case of the same disease is reported from Wilkinsburg, near Pittsburg, Allegheny County.

Five cases of smallpox in Pittsburg, Allegheny County, origin unknown. One case of smallpox in Philadelphia, origin unknown. Yours truly, BENJAMIN LEE,
Secretary.

Yellow Fever.—Propositions adopted by the Conference of Gulf Quarantine Authorities, held in New Orleans, Feb. 2 and 3, 1894.

Your committee to whom was referred the consideration of the several propositions relative to the regulations of the fruit trade during the quarantine season, beg to report as follows:

1. In order to secure prompt and reliable information as to the existence of yellow fever in the various ports of the West Indies and Central and South America from which fruit is shipped, it is deemed essential that medical inspectors should be stationed at said ports with the understanding that the inspectors stationed in the larger towns may have jurisdiction over smaller places within the district.
2. The duties of the inspectors shall be to report by each and every vessel, and if necessary by cable when practicable, on the sanitary condition of their respective districts; on the existence of contagious or infectious diseases within the same; on the compliance by vessels with the regulations issued for their guidance and to perform such other duties as may from time to time be required of them.
3. It is recommended that vessels engaged in this trade shall, whenever practicable, be manned by acclimated crews.
4. In the absence of yellow fever, it is considered unnecessary to place any restrictions upon the manner of loading vessels, or upon the character of cargo carried, further than to rigidly exclude household effects, personal baggage, hides, horns, bones and fertilizers.

5. After the discharge of the cargo every vessel shall be subjected to mechanical cleansing by washing, and afterwards thoroughly disinfected.

6. In the event of yellow fever occurring at any fruit port, trade with that port may be continued under the following additional precautions:

Each vessel to be required to carry a duly accredited medical officer whose duty it shall be to see that all quarantine regulations are strictly carried out. No member of the crew shall be allowed to go on shore nor any one, except an acclimated loading crew, to come on board. The loading crew to be kept isolated in a locality sufficiently remote from the infected district and while on board the vessel to be kept separate from the crew. Vessels are not to be allowed to remain at any wharf or near shore after sunset, but must anchor in the open bay at such distance from shore as may be prescribed by the medical officer in charge, and must not return before sunrise. The cargo carried shall be restricted to fruit, rubber and specie. Rubber not to be packed in any textile fabrics, and specie to be disinfected by immersion in boiling water.

7. Should a vessel having yellow fever on board and carrying a cargo of fruit arrive at a quarantine station, the fruit may be lightered by acclimated crews or by the crew of the vessel, after which the vessel shall be subjected to the usual detention and disinfection. The clothing of the laborers to be disinfected by steam heat after the discharge of the cargo shall have been completed.

8. Any vessel engaged in the fruit trade, which carries passengers, should forfeit all special privileges and be subjected to the same quarantine restrictions as other vessels carrying passengers.

9. Inasmuch as the quarantine laws and regulations of the United States as promulgated by the Secretary of the Treasury April 4, 1893, are not in accord with certain of the foregoing propositions, it is recommended that such modifications be made in said laws as shall make them to coincide with the views expressed by this Conference.

G. FARRAR PATTON, M.D.
JEROME COCHRAN, M.D.
R. W. HARGIS, M.D.

SELECTIONS.

Extirpation of the Gall Bladder.—After reviewing the history of this operation which was first attempted by Jean Louis Petit, in 1743, and which was given a renewed impetus by Langenbuschen ten years later, the author then cites two cases operated on by Helferich.

The first was that of a man 21 years of age who first appeared in the clinic Jan. 18, 1892, complaining of a severe hepatic colic to which was added a transient jaundice.

On the under surface of the liver a flat pear-shaped tumor was discovered which proved to be the gall-bladder, its walls thickened and shrunken, and containing nine to ten small faceted stones, after the removal of which the gall-ducts appeared to be intact. Convalescence was retarded by the formation of an abscess, which two weeks later was evacuated through the lower aspect of the abdomen.

The second case, a man 42 years of age, first came under observation in July, 1892. He exhibited a tumor near the under surface of the liver, which during its growth was the cause of much pain and considerable gastric disturbance. The swelling lay in the right hypogastric region, about the size of a man's fist, and disappeared on deep inspiration.

On incision the tumor seemed to consist of the distended gall bladder to which the transverse colon was adherent.

On its lower circumference there was a thimble-shaped pocket or sac, containing about one-fourth liter of a yellow purulent fluid in which were fat corpuscles and sediment. In the lumen of the cystic duct, a gall-stone about the size of a cherry-seed, was so firmly impacted that it could only be removed after first breaking with forceps. As it was so firmly held in its situation by the minute projections on its surface, and as its removal by a lithoclast would injure the duct, it was deemed advisable to extirpate the gall-bladder and duct at a point just above the site of the stone. The remaining portion of the duct was carefully closed with Lembert sutures. Convalescence was uninterrupted, no febrile reaction taking place.

The author then discusses the results of the cholecystectomies; of seventy-two cases observed by himself only sixteen resulted in death, only seven of which could be attributed to the effects of the operation.

The different reports concerning the importance of extirpation of the gall-bladder as an operative procedure, against the operation for gall-stones, have not yet been decided in favor of either.

Lauenstein, however, upon his own experience, is opposed to this operation. He has treated cases exactly like those above related, and quite as successfully, by merely opening the gall-bladder. Among thirty cases in which an operation was indicated, in only two was the gall-bladder removed, and then only on account of a secondary complication in the form of a biliary fistula.—C. LAUENSTEIN in the *Centralblatt für Chirurgie*, January, 1894. [Abstracted for the JOURNAL.]

The Use of Ether in Incarcerated Hernia.—Gussenbaur has tried Finkelstein's method of using ether in incarcerated hernias, on a number of cases from the Prague surgical clinic. Of 135 cases which came under observation, 108 required operative interference, and in only five of these the ether treatment was unsuccessful. The remaining twenty-seven, among which were sixteen inguinal, one ventral and three femoral, were all successful.

Gussenbaur recommends the practice of the American physician, H. Koch, of protecting the thighs and scrotum from the ether fumes. The danger of an explosion when artificial light is used must be borne in mind.

Among the twenty successful cases mentioned above, spontaneous reposition without taxis resulted in three of the cases. One patient succeeded in reducing his hernia himself after the application of the ether. All the others were reduced by the surgeon in from one to three hours. In only two cases was a longer time than three hours required.

Gussenbaur considers this method of ether application worthy of more notice. He believes the results would have been still better had he attempted this operation earlier than he did, as forcible taxis had already been attempted.

It should be understood, however, that the operation of herniotomy should not be entirely excluded. The ether treatment can be tried when this operation is contra-indicated, as in cases where incarceration is accompanied with symptoms of gangrene or peritonitis.—"JAFFE," in the *Centralblatt für Chirurgie*, January, 1894. [Translated for the JOURNAL.]

NECROLOGY.

A. G. Standiford, M.D. of Westville, Ind., died February 10.

J. T. Doyle, M.D. of Wilkesbarre, Pa., died February 10.

Dr. Lingenfelder, 50 years old, of St. Louis, Mo., a passenger on the North German Lloyd steamer, *Spree*, which arrived Feb. 15, from Bremen, died from a disease of the liver on the voyage. His body was sent to St. Louis.

A. Dunlap, M.D. of Springfield, Ohio, died February 17. He was a delegate from the AMERICAN MEDICAL ASSOCIATION to the International Medical Congress in London, Eng., in 1881, and one of the earliest physicians to demonstrate the operation of laparotomy, having performed over 400 operations in various parts of the United States.

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SATURDAY, FEBRUARY 24, 1894.

BRITISH CHOLERA MICROBES.

The press dispatches report that the International Sanitary Commission at Paris, has succeeded in inducing the British Government to agree to proper international quarantine at Red Sea ports, and that the Turkish Government on its part agreed to purify the "holy" well at Mecca.

For this much we should be thankful, but the great measures of sanitation should include the proper enforcement of sanitary regulations of pilgrims to and from the holy city, and beside, some really adequate hygienic measures in India.

The whole world has known for a long time that the awful responsibility of maintaining cholera centers, has rested with the Indian Government and that of Turkey, and that these countries have at last agreed to even this feeble step is acknowledgment that they recognize it.

An international quarantine at Suez has been maintained for several years under French auspices, but the British ships have frequently evaded it, and when proper inspection was submitted to, it was done with an ill grace.

When Great Britain seized the reins of government in India, she became morally responsible for the innumerable cholera centers in her stolen territory. That responsibility can not be shaken off by the Anglican practice of raising a cloud of objections to the theory and practice of quarantine, and the mandate of other nations should be, that England should no longer be allowed to afflict the globe by her indifference to the exportation of cholera microbes.

These microbes once Indian, are now British, and whether or not we agree with MR. HART that they are "waterborne," we can not fail to notice that instead of vigorous action in destroying them, she has heretofore not only placed no obstacle in the way of their exportation, but has actually tried to break down the barriers erected by other nations in self-defense.

SOME OBSERVATIONS ON THE CAUSE OF JAUNDICE.

Jaundice is a condition characterized by a more or less deep yellow, or greenish yellow color of the skin and conjunctiva and by the presence of bile or bile coloring matters of the urine. It invariably depends upon causes which either completely obstruct the flow of bile, or which modify the pressure under which the bile normally flows along the biliary ducts. When, from any cause, the pressure increases in the bile ducts, the bile coloring matter and the bile acids enter the lymphatics of the liver and are conveyed in the lymph through the thoracic duct into the blood.[1]

If the thoracic duct, and as well the common bile duct be ligatured, no jaundice results, and biliary constituents can not be detected in the urine. Dogs survive this operation, sometimes for seventeen days without apparent inconvenience, without jaundice and without bilirubin or bile acids appearing in the urine.

It therefore appears to be proved beyond the possibility of doubt, that it is only through the lymphatic paths that biliary constituents can leave the liver and enter the blood.[2]

The theoretic explanations of "Jaundice Independent of Mechanical Obstruction of the Bile Ducts," given by Dr. Murchison, in Quain's Dictionary of Medicine, and quoted by the recent writers on practice are now obsolete, and it is only within a comparatively recent period that facts have accumulated which prove that jaundice is always due to an obstruction to the normal efflux of already secreted bile. By hepatogenic jaundice is meant jaundice due to obstruction. By hematogenic jaundice is meant non-obstructive jaundice, which does not exist. Stern has shown,[3] that contrary to Harley's views, the bile acids and bile coloring matter are both formed in and by the liver. In ducks and geese, the secretion urine continues after the ligature of all vessels to the liver.

If the liver be extirpated the urine remains free from biliary constituents; Minkoski and Naunyn having discovered that ducks and geese, after the inhalation of arseniuretted hydrogen, excrete bile coloring matter with urine, they exposed them to this agent after removing the liver. In the time intervening between the poisoning, and the death of the bird, urine was excreted which contained hemoglobin, but was free from bile coloring matter.

They thus succeeded in demonstrating that in the

1 Fleischl, Kunkel, Gamgee, Physiological Chemistry, p. 359.
2 Gamgee, p. 361.
3 Gamgee, p. 365.

most typical cases of supposed hemotogenic jaundice, the excretion of bilirubin is necessarily connected with and dependent on, the liver.[4]

More recent research has proved that there is not, at present, any sound basis for the conclusion that the bile pigment occurring in jaundice has any source other than the liver. According to our view, every form of jaundice is occasioned by obstruction.[5]

THE DIFFUSION OF SMALLPOX.

In Pennsylvania there are not as many cases of smallpox as there were on January 1, and although the disease seems to be under control there were three fresh cases at Reading within the last two weeks, one at Saxton, Bedford County, one death at Pittstown, Bedford County, and seven cases of smallpox and five of varioloid at Tyrone Forges, the disease at the latter locality traced directly to Reading. A mild case of varioloid has also been found in Philadelphia in the person of a young lady who contracted the disease in Connecticut. This is the first case in that city for some time.

In New York City the number of cases is gradually increasing, and there are cases at several points throughout the State. There are still cases at Winchester and Norfolk, Conn., and on February 9 a case was found on a railroad train in that State. The disease still exists in Boston, but seems to have been stamped out at Somerville, Worcester, Holyoke, Lowell and Brookline.

Fresh cases are reported at Lewisburg, West Va., and a case of varioloid at Walliston, Anson County, N. C., one at Shelby, Ohio, one at South Bend, Ind., also at Otsego, Mich., and at Janesville and Milwaukee, Wis. Cases are also reported at Manhattan, Round Grove, and the poorhouse, Edwardsville, Ill., Duluth, Minn., and Luverne, Keosauqua, Marion, Council Bluffs, Keokuk, Fort Madison and New Hampton, Iowa. The Chicago health authorities daily find new cases.

Taking everything into consideration, the efforts to control and prevent the spread of the disease have been very successful, especially in some localities, where the infection did not spread beyond the first cases attacked. The Wisconsin and Iowa State Boards of Health have ordered the vaccination of all the school children in their respective States, and the Illinois Board has extended the scope of the vaccination order of that Board. It is undoubtedly the duty of the health authorities to secure the vaccinal protection of every one they possibly can. We shall no doubt have many more outbreaks, owing to the diffusion of the contagion over so large an area, in addition to the fact of the presence of the disease in New York and Chicago, the greatest distributing centers in the country, and the increase of the tramp element. The suggestion of DR. PROBST, Secretary of the Ohio State Board of Health, that all railway employes should be vaccinated, is a good one, and should be carried out. The low death rate by the disease is still notable, and another feature that is marked is the great number of cases that are found in general hospitals in the large cities. The latter is, no doubt, owing to the fact that the poor seek hospital shelter much sooner than usual, and thus make the control of this disease more difficult.

There are now in the United States twenty-eight suspected places, a greater number than we have had at any time since 1882. In England there are about the same number of places, but we do not have so many cases. There are now in the United States about 375 cases, while the fresh cases for the past week have been about 175.

In Paris, smallpox has been prevailing for some time and is increasing, owing to the neglect of vaccination. Vaccination matinees have been the order there, but this has not been found sufficient to check the disease, and there is now to be general and obligatory vaccination in all the communal schools, primary and secondary, and the Assistance Publique has organized a system of public gratuitous vaccination, at stated hours, at twelve of the hospitals located in different parts of the city.

THE CAUSE OF DEATH.

The cause of death and a number of other medico-legal questions, as many as would hardly, ordinarily, be raised and decided in a half dozen or more cases, are exhaustively considered by the United States Circuit Court of Appeals, Sixth Circuit, in the case of the Manufacturers' Accident Indemnity Company v. Dorgan, decided Nov. 6, 1893, and just reported in the advance sheets of 58 Federal Reporter, page 945. This was an action brought to recover for the death of a person who had gone on a fishing excursion, and was found by one of his companions, twenty minutes after he was seen playing a trout, lying in the brook, with his face downward and submerged in six inches of water, dead. The points decided of special interest to the medical profession, taken seriatim, are as follows:

While the opinion of a non-expert witness is not admissible in evidence on facts which it is possible for him to detail to the jury so that the latter can draw its own inference therefrom, a physician who performs an autopsy may be asked his judgment of the conditions which he has found in the body of the deceased person, and what they indicate as to the cause of death.

But a question is incompetent, which asks a physician, not present at an autopsy, whether in his judgment, from the testimony offered with regard to the autopsy, he would say that the autopsy was such as

[4] Gamgee, p. 365.
[5] Buugee Physiological Chemistry, p. 379-380.

to enable a physician to state with any degree of certainty the cause of death, because it asks him to make his own inference as to what the evidence of the other witnesses tends to show, and then, upon such inference to give his opinion. To properly elicit his opinion as to the character of the autopsy, and its usefulness in showing the cause of death, counsel should state the scope and character of the autopsy, as he understands it, so that the jury, in weighing the answer of the witness, can know exactly upon what facts it is based. The difference between this question and a similar one put to the physician performing the autopsy, is that here the witness is asked to weigh other men's evidence, a function peculiarly belonging to the jury, while there the witness is asked an expert opinion of bodily conditions seen with his own eyes. Had the physician, whose judgment of the autopsy is thus asked, been present at the autopsy, a question calling for his opinion as to its evidential weight in determining the cause of death would be a proper one.

A physician who has made an autopsy may testify as to whether there was any occasion for making other than those he made, as, for example, an air or water test with the heart of the deceased, where the sufficiency of the autopsy to show the normal or abnormal condition of the heart is questioned because of a failure to make such tests. He may also be asked as to the purpose and scope of his investigation. And on the same ground, his testimony that he cut open and examined the stomach to see if there was any trace of alcohol in it may be corroborated by showing that his attention had been directed to the fact that deceased had been drinking on the day of his death.

The words, "voluntary exposure, unnecessary danger, and hazardous adventure," as used in an insurance policy exempting the insurer from liability for death produced by such exposure, do not refer to such exposure as men usually are going to take—such as is incident to the ordinary habits and customs of life. In order to constitute a defense as a contributing cause, the exposure must be something beyond the ordinary, or a wanton, a piece of gross carelessness, as we would term such in our designation of a person's conduct in the usual walks of life.

An involuntary death by drowning is a death by external, violent, and accidental means.

If a person suffers death by drowning, no matter what is the cause of his falling into the water, whether disease or a slipping, the drowning, in such case, will be the proximate and sole cause of the disability or death, unless it appears that death would have been the result, even had there been no water at hand to fall into. The disease is but the condition; the drowning is the moving, sole, and proximate cause. A precedent on this point is furnished in a case where the insured was seized with an epileptic fit and fell into a stream, and was there drowned while suffering from the fit. It was there held that the death was within the risk covered by the policy, and not excluded by a provision of the policy that it should not extend to any injury caused by, or arising from, natural disease or weakness, or exhaustion consequent upon disease. This doctrine has also been approved by the Supreme Court of the United States.

On the other hand, an "accidental" death by drowning results from, and is caused indirectly by, fits, vertigo, or other disease, if the fall into the water, from which drowning ensues, is caused by such disease. And if an insurance policy provided that it should not apply to an accident to which a fit contributed indirectly, the insurer would not, under some of the decisions be liable.

The court concludes that the jury in this case might, from the circumstances, properly have found the verdict which they did find, namely, that the unconscious and helpless condition of the insured in which drowning ensued, arose, not from disease, but from indigestion or want of food, or some other temporary cause, and that judgment of the court below, on the verdict in favor of the beneficiary of the insurance policy in controversy should be affirmed.

CORRESPONDENCE.

Medical Legislation in Ohio.

TROY, OHIO. February, 1894.

To the Editor:—I desire to call the attention of the members of the AMERICAN MEDICAL ASSOCIATION in Ohio, to a medical bill now pending in the Legislature, known as the Mosgrove substitute bill. This bill provides for an examining and registry board composed of seven physicians as follows: "Representation shall be given to the different schools of practice in the State as nearly as possible in proportion to their *numerical strength in the State*, provided, however, that *no one school of practice shall have a majority of the whole board.*" The last clause of the bill destroys the apparent fairness of the first one, inasmuch as there are now engaged in active practice in the State six regular physicians to one of all other schools combined. The composition of this board under the law would necessarily be four irregulars and three regulars, the one irregular in active practice in the State would be represented by four members of the board, while the six regulars in the State would be represented by three on the board, a shameful discrimination against the majority and against the regular school. The irregulars having the majority would be able to control the board and elect a president, secretary and treasurer of their own liking; have power to establish grades determining the standing of medical colleges; countersign permits to practice and in fact practically control the business affairs of the board. The irregulars can always be relied on to stand together in a question against the regular profession and as four is a majority over three, we would be outvoted every time when a question of schools was involved.

The Code of Ethics of the AMERICAN MEDICAL ASSOCIATION, Art. IV, Sec. 1, forbids the holding of professional consultation with irregulars. Yet this bill puts these unworthy

practitioners in the State of Ohio practically in charge of the profession. The bill provides that each physician must receive a permit from the board and have the same placed in his office. It no doubt will be a pleasure for the regulars of the State to gaze on a framed certificate permitting them to practice medicine and surgery, signed by some disciple of Hahnemann as president, and some equally obnoxious physiomedist or eclectic as secretary.

What appears strange is that a bill so unjust should receive the sanction from an assemblage of doctors of all schools called together for the purpose of formulating a medical bill, a former editor of the JOURNAL presiding, and who gave his assent and now advocates its passage. God save us from our friends *in the regular profession.* There are many other features of the bill that are objectionable and not up to the standard of medical legislation in other States, nor in line with the spirit of advanced medical education. It permits uneducated midwives and doctors who are now engaged in practice under a defective law to continue without an examination, while young men who may have graduated from the best schools of the world must undergo an examination by this board, a majority of whom are irregular doctors.

I consider any legislation defective that does not require all doctors who have no diploma, as evidence of a medical education, to be examined by the board, as well as all midwives. No injustice should be done to any school of medicine; and this can be done by establishing different boards or give fair numerical representation to the difierent schools. Better let the State be overrun with quacks who are flocking here from other States which have enacted laws that "smoked them out," than to pass a law so unjust and humiliating to the regular profession as this bill proposes. It is about time the regulars woke up in the State and entered their protests against this bill. As it now stands it is evidently not in the hands of our friends.

W. R. THOMPSON, M.D.

Superfluous Spectacles.

To the Editor:—Replying to the comments in your editorial columns Feb. 3, 1894, under the caption of "Superfluous Spectacles," which is evidently designed to stimulate a so-called "healthy reaction against the one-sidedness which has of late years permeated American ophthalmological literature," permit us to say that we were not aware that any very disastrous results had followed the application of glasses in any and all cases in which they were indicated, and indeed in the majority of cases great benefit has ensued. So firmly are we of this belief that we would respond to the query, "Does every optical defect need correction, and is every case of painful vision curable by glasses?" Yes; every optical defect sufficient in degree to give rise to the disagreeable train of symptoms called asthenopia should be corrected and in all cases of refractive error, pure and simple, accompanied by painful vision we can, with the institution of the modern ideas of treatment, remove the difficulty; and while we rigidly adhere to this rule, we have never deemed an eye possessing a high degree of refractive error equal in working power to a normal or emmetropic eye, notwithstanding full correction. The mere fact that many cases of comparatively high degrees of uncorrected refractive error cause little or no visual disturbance proves nothing, as it has yet to be shown by competent statistics that the persons who have experienced little or no difficulty with their eyes despite the presence of a palpable refractive error, have been placed under the same conditions of eyestrain; and I think that if the cases recorded by Dr. Roosa were subjected to careful scrutiny it would be seen that they were eyes that had been subjected to little or no strain, so far as close work is concerned; for we all appreciate that many ametropic individuals are capable of performing genera1 all-around work which does not require constant application of the eyes, (and particularly is this true of hypermetropic cases) with comparative comfort, but no sooner are they placed under conditions requiring constant use of their accommodative mechanism prevailing during close eye work, combined with deficient illumination, close atmosphere, malposition, etc., and we have the requisite factors conducing to speedy development of asthenopia, which then demands the oculist's attention.

We note further, that out of the 100 illustrative cases, as presented by Dr. Roosa, 45 had hypermetropia of 1 D., 39 of 2 D., and 7 over 2 D., while relatively few had astigmatism of low degree (.25.D.—.50 D.), while in only four cases did the astigmatism reach 1 D. or over, which present just the class of cases that are capable of performing ordinary eye work without appreciable difficulty. Now, would the writer of the editorial, if he found a patient with a perceptible degree of ametropia, even though he experienced no difficulty, consider it good form to tell him to wait until his eyes bothered him before resorting to a glass? We infer that such would be his advice. But in view of the light that modern research has thrown upon the principles of physiologic optics, as first scientifically established by Donders, are we justified in ignoring scientific facts and basing our advice upon empiricism? The finger of scorn has been pointed at medicine sufficiently long to impress us with the urgency of resorting to scientific principles whenever applicable, and if there is in all medicine a department more worthy of the term science than ophthalmology, we are at a loss to appreciate it. Exact work in this line may be justly dated from the invention of the ophthalmoscope by Helmhotz in 1851, and we have but to glance at the ophthalmologic literature of to-day to demonstrate that its strides have been phenomenal as well as productive of great good—surgery, alone, in in all her modern phases vying with ophthalmology. Yet your correspondent with one fell swoop would obliterate all of the modern teachings of ophthalmology. And again, does your correspondent believe for an instant that a highly ametropic eye can without correction of the existing error perform the same amount of eye work that the normal or emmetropic eye is capable of performing without disastrous effects? If so, we would invite his attention to the results of pathologic investigation, showing as it has such a difference in the character and arrangement of the ciliary muscular fibers, in eyes possessing different types of refractive error, as well as to the apparent intimate connection between the refractive state of the eye and glaucomatous changes.

In conclusion, we desire to array ourselves upon the side of ophthalmologic teaching, which advises the application of a glass timely enough to militate against the establishment of pronounced nervous impressions known to be sequelæ of uncorrected eyestrain consequent upon uncorrected refractive errors, and we believe in all cases of refractive error of moderate and high degrees in applying the requisite correction, whether it takes a cylinder of high or low degree, and can but point to our cases which show benefit in all instances, and we do not feel that by so doing we are losing sight of the fact that the eye is part and parcel of the general economy.

Very respectfully,

JAMES A. LYDSTON, PH. G. M.D.

"Superfluous Glasses."

BURLINGTON, IOWA, Feb. 13, 1894.

To the Editor:—At the meeting of the Iowa State Medical Society held in this city last May, I had the privilege of reading a paper entitled: "The Broader View of the Etiology and Therapeutics of Asthenopia." In this paper I took the ground that we were undoubtedly expecting too much from spectacles as a means of relief. My position was strongly

indorsed by Dr. C. M. Hobby at that time in the discussion which followed; and is again set forth by him in his letter in connection with your remarks under the above caption.

A serious obstacle in the way of reform or greater conservatism may be found, however, in the ideas which patients before seeking medical advice, have obtained upon the subject through reading (or hearing) about the wonderful cures of obstinate headaches and other maladies by the wearing of properly selected spectacles. They almost demand spectacles.

It is hardly possible to prevent, or even exercise censorship upon, the appearance of medical articles in the public prints; but if medical journals would sift exaggerations more carefully from the articles of enthusiasts in the profession, it might be spared some reproach.

Truly yours, H. B. Young.

Fluid Drinks in Laparotomy Cases.

Youngstown, Ohio, Feb. 13, 1894.

To the Editor:—I have just finished reading the excellent article entitled, "Fluid Drinks after Laparotomy," by F. Byron Robinson, in current issue of the Journal.

Although I agree with him, that fluids are called for by the system with a special intensity after laparotomy; and that the patient is in the same condition as Tantalus, with even a greater burden to bear—that of a surgical condition is superadded; yet I think we can supply the fluid to the system in a better manner than by giving it by the mouth and stomach.

For some time I have been conducting experiments upon myself, regarding the absorption and elimination of water from the bowel.

We all know that a large enema, by distending the bowel will bring on increased peristalsis, and thus cause it to be expelled within a few moments. I have found by experimenting upon my patients and myself that if a small quantity, say eight ounces, be thrown into the bowel, it will not be expelled, but will be absorbed and eliminated through the kidneys. Not only this, but it seems to so stimulate the kidneys that not only the quantity thrown into the bowel, but a much increased amount is eliminated.

To-day at 12 M. I used in this manner eight ounces of water, and rested in a reclining position half an hour. At 2, 3:30 and 5 P.M., I urinated freely, the total amount being thirty ounces. This without any variation in my ordinary food supply, and no diuretics. Yesterday, kidneys acted in the usual manner, and I expect the same conditions to-morrow unless I repeat the experiment. I have tortured my patients just as Dr. Robinson says Tait does. I also have given fluids by the mouth, but more often with bad than good results.

Since using the above method, I have never heard the cry: "Water, water! For God's sake give me water!" so often heard by all operators who give no fluids. I usually have the nurse give an enema of eight ounces of water as soon as patient asks for a drink, and that ends the trouble for some time. In the course of an hour or so, the kidneys act freely, also the skin, thus eliminating from the system the effects of the anesthetic, and the effete matters of the blood. By this method a large quantity of water may be restored to the circulation at once, thus replacing the amount removed by depleting salines.

Although it is a supposed physiologic fact, that the seat of thirst is in the throat, yet I know by experience and expressions of gratitude from patients that the sensation of thirst is fully and freely gratified. I do not know that I ever saw this subject brought out in journals or text-books, and although I may have seen the idea at some time elsewhere, I think it worthy of consideration.

Very respectfully, J. A. Dickson.

The Hyposulphites In Infectious Diseases.

New Orleans, La., Feb. 12, 1894.

To the Editor:—My article upon the value of the sulphites and hyposulphites in the treatment of zymotic diseases, published in the Journal of February 3, has already elicited testimony of their value in the treatment of yellow fever, scarlet fever and diphtheria, as will be shown by the letters of Dr. T. O. Summers of Waukesha, Wis., and Dr. Elisha Chenery of Boston, Mass.

I shall take pleasure in sending you for our valuable Journal, dear Doctor, from time to time, any additional testimony which I may receive upon this important subject.

With great respect and high esteem, I remain, truly your friend, Joseph Jones, M.D., LL.D.

Professor of Chemistry and Medical Jurisprudence, Tulane University of Louisiana.

Waukesha, Wis., Feb. 4, 1894.

Dr. Joseph Jones, New Orleans, La.

Dear Sir:—I confess to no little chagrin, as well as surprise, at your statement in a paper on the value of the hyposulphites, that you had "no facts with which to prove" the efficacy of their use in yellow fever, and your regret that your suggestion of their use was not put to the test in the late epidemic at Brunswick. No doubt you have forgotten that in 1879, after the terrible epidemic in Memphis, I called upon you and laid before you for inspection my little work on yellow fever just then issued in which, in the chapters on prophylaxis and treatment, the use of the hyposulphites was strenuously advocated and supported by the report of hundreds of cases. This was also confirmed by my work in 1888 in Jacksonville, and extensively reported at that time. When I wrote the work on yellow fever I was Professor of Anatomy in the Vanderbilt University of Nashville, where you once held the chair of Physiology, and for this reason I thought it strange that you should have so completely ignored my work. Respectfully,

T. O. Summers, M.D.

Boston, Feb. 5, 1894.

Joseph Jones, M.D., L.L.D.:

Dear Sir:—I have just received the Journal of the American Medical Association of February 3, containing your article on the sulphites and hyposulphites of sodium in relation to some of the zymotic diseases. I was to lecture to-day on diphtheria and had only a moment to run over your points, and so was not so prepared to use your statements as I should have gladly done.

I saw Professor Polli's statement as early as 1862 or '3, I think, and began the use of the hyposulphite of sodium as early as 1863 in diphtheria. I had an urgent case in an only daughter who was scrofulous, her tonsils quite meeting together. I was at my wits' end for a remedy and resolved to try the bisulphite and sent for it but could not obtain it. The apothecary, however, sent me the hyposulphite, saying that he thought I could use it. I did so and saved my frantically delirious little girl.

Now if you can get at the files of the *Boston Medical and Surgical Journal* for June 8, 1876, you will find an article I wrote which I think will interest you. It is on page 657 and is entitled: "Diphtheria Successfully Treated."

There are some cases it does not appear to act so well in, and I suspect it may be owing to too old hyposulphite which has changed to the sulphate, or to the lack of stomach action on it to eliminate its sulphurous acid. I wish you could make some experiments to determine these points.

While isolation is a sure preventive, I regard the use of the hyposulphite invaluable in cases which can not be isolated.

I have used the medicine also in scarlet fever with remarkable success. In one family of two children one came down with scarlet fever and the other took the hyposulphite and escaped the disease. I have used it in the early stage of typhoid fever and thought it very useful in mitigating the disease. In some cases of small children I have relied

almost wholly on the salt and do not swab their throats. I think the medicine should be given pretty strong and frequently, moderating treatment in both respects if the bowels are much affected. During the course of the case or afterwards, iron and the bitter tonics should be given.

Now it has never occurred to me to have a case where I began early, where the patch afterward traveled into the larynx. It seems to me that the vigorous early treatment with the hyposulphite is as near a specific for both diphtheria and scarlet fever as we have yet found. I hope you will be able to produce more evidence in its favor, and you are at liberty to use this communication any way you see fit.

I hope the profession will soon be able to discriminate between diphtheria and its sequelæ, the septicemia. They run so closely into each other most physicians are still regarding the latter as a real part of the former. I do not so consider them and believe if we properly treat and timely treat diphtheria we shall save from the latter and so save the patients. I think few cases treated energetically at first with the hyposulphite will ever be followed by paralysis. The hyposulphite has done so well for me I have not been disposed to try the other forms. Since that article my experience has confirmed my former confidence in the medicine. I think I was the first one to use it in these cases.

Very truly, E. CHENERY.

Care of the Vaccinated.

MT. PLEASANT, IOWA, Feb. 16, 1894.

To the Editor:—Smallpox being now so prevalent and vaccination the order of the day, may it not be well to consider at this time a seemingly little matter in connection with the latter subject? Those vaccinated go about and mingle freely with others in the usual way. The latter do not know the former are vaccinated, and subject them to roughness which they would not do if they knew they had a vaccine spot on their arm or body. They seize them, grasp or stroke them at this very spot, ignorant of the damage they are doing, *and having no means of knowing it* until the person cries out, and then the pain and damage has been done—most frequently, perhaps, among school children and other young persons.

Something to distinguish and forewarn, and protect the vaccinated person from this pain and unpleasantness, and the spot from damage, should be adopted; something to be universally understood as indicating the person, and spot of vaccination. For instance, a band of colored cloth or a square piece of the same sewed on the sleeve of the coat or dress, or other index to be adopted by common consent. This would keep off many strokes and pinches which, besides the discomfort to the patient, disturb the inflammatory processes and proper formation of the pustules, and invite other results such as ulceration and sloughing where otherwise a possible good result might have been reached.

Thus might also be avoided the occurrence of doubt as to the value of the vaccination, and expense and other adverse contingencies of a renewal of the vaccination.

Very truly, H. L. GREEN.

Johns Hopkins Hospital Reports.

KASOTA, MINN., Feb. 17, 1894.

To the Editor:—I see in Book Notices of JOURNAL of February 17, the notice of the Johns Hopkins Hospital Reports, but it does not state the name of the publishers.

If published by the JOURNAL send it to me with bill, or kindly inform me where it is published.

Yours respectfully, W. R. HAND.

The book is published by the Johns Hopkins University. Please address them direct.—[EDITOR.]

ASSOCIATION NEWS.

The Association Train will leave Chicago Monday, May 28, via Santa Fe R. R., Denver & Western, and Southern Pacific, for San Francisco via Denver, Colorado Springs, Leadville, Manitou, Glenwood Springs, Salt Lake, Ogden, Truckee and Sacramento. Returning, after the meeting, the train will pass through Sacramento and Northern California to Portland, thence east by way of the Northern Pacific R. R. to St. Paul. A stop over at Yellowstone National Park for those who desire it has been arranged, and it is understood that at several places on the journey there will be short stops. President Hibberd's party in a special car join the train at Chicago, and the St. Louis party are expected to join at Kansas City. From all points east and south, concentration on this train should be effected at Chicago and St. Louis.

Section of Neurology and Medical Jurisprudence, American Medical Association.—The AMERICAN MEDICAL ASSOCIATION will meet at San Francisco, Cal., during the first week in June, 1894, and as it is desired to make the meeting of the Section on Neurology and Medical Jurisprudence of the ASSOCIATION one of unusual interest and value, you are earnestly requested to contribute to this end by the presentation of a written communication on some neurologic or medico-legal subject, or by bringing for exhibition and discussion anatomic or pathologic specimens.

If you have not yet chosen a subject, but are willing to take part in the work of the Section, please notify the Secretary at once of this intention, and as soon as possible forward the title of your contribution. It will facilitate the work of the Section to send an outline of your paper. A preliminary program will be published during March.

FRANK P. NORBURY, Secretary,
Jacksonville, Ill.

Officers of the Section.—James G. Kiernan, M.D., Chairman, 910, 103 State Street, Chicago, Ill.; Frank P. Norbury, M.D., Secretary, Jacksonville, Ill.

Executive Committee.—O. Everts, M.D., Cincinnati, Ohio; H. N. Moyer, M.D., Chicago, Ill.; C. K. Mills, M.D., Philadelphia, Pa.

SOCIETY NEWS.

Bucks County, Pa., Medical Society.—The Bucks County Medical Society held its midwinter meeting in Quakertown on January 31. Dr. Estes, Surgeon-in-Chief of St. Luke's Hospital, Bethlehem, addressed the meeting.

The Tri-State Medical Society of Iowa, Illinois and Missouri, will meet at Kansas City, April 3 and 4. All reputable members of the medical profession in the three States are eligible to membership, and are cordially invited to be present and participate in the deliberations.

Grand Rapids Academy of Medicine.—At the annual meeting of the Grand Rapids Academy of Medicine of Michigan, held in Grand Rapids Feb 5, 1894, the following named officers were chosen to serve the ensuing year: President, Austin J. Pressey, M.D.; Vice-President, Frances A. Rutherford, M.D.; Secretary, Louis A. Roller, M.D.; Treasurer, Samuel R. Wooster, M.D.

The Fiftieth Anniversary of the Lancaster County, (Pa.), Medical Society.—The proceedings of the fiftieth annual meeting of the Medical Society of the city and county of Lancaster. This was an occasion of more than ordinary interest, owing to various causes, one of them being the fact that it is the oldest in the United States, with the exception of four in cities on the Atlantic sea-board. Another interesting fact is that John L. Atlee and D. Hayes Agnew, names which have shed as much luster on American medicine as any that have adorned the profession, were among its founders. The only one of the founders present at this meeting was the venerable J. Augustus Ehler.

The writer knew nearly all of the original members and for many of them entertained the highest veneration and respect. The present membership worthily sustains the reputation of its founders, the Society being one of the most active in the State of Pennsylvania and taking a deep inter-

est in upholding the dignity and honor and promoting the advancement of the profession. The memorial address of Dr. Ziegler was interesting, well-timed and appropriate. The banquet was well attended, and with the menu and the speeches together proved a very enjoyable affair.

Those outside of Lancaster County are: Drs. Judson Deland, W. W. Keen, John H. Packard, James Wallace, Joseph Price, W. B. Atkinson, A. R. Craig, T. S. K. Morton, A. K. Minnich, William Zeigler, Samuel Latta, John H. Musser, B. F. Bear, Mordecai Price, De Forrest Willard, B. A. Randall, Clinton Foltz, and Profs. C. K. Mills, Hobart A. Hare of Philadelphia; Dr. J. W. C. O'Neal, Gettysburg; Drs. Wm. Bacon, Fry, Gotwald, Rense, Gable and Wentz, York; Dr. H. H. Whitcombe, Norristown; Dr. Detwiler, Williamsport; Dr. Alrich, Chester; Dr. Putt, Harrisburg; Dr. Guilford, Lebanon; Prof. John H. Rauch, Chicago.

At 1:30 o'clock February 14, a business meeting of the Medical Society was held at Grand Army Hall, Dr. Oliver Roland presiding, and here was read the history of the Society by Dr. J. L. Ziegler of Mt. Joy. After the transaction of some general business the members of the Society and their guests repaired to Martin's Hall, where a dinner was served. The tables were arranged in a manner to foster sociability by bringing the guests as close together as possible, three wings shooting off from one long table, one at either end and the third wing in the middle. The decorations of the table were superb, ninety covers being laid.

Dr. Alex Craig of Columbia, presided over the table as Toast Master, and the following were the toasts responded to: "Our Guests," Dr. Hobart A. Hare, Philadelphia; "Origin of Our Society," Dr. J. Aug. Ehler; "Medical Organization," Dr. W. B. Atkinson, Philadelphia: "Medical Education," Prof. John H. Rauch, Chicago; "Offspring of Lancaster County Abroad," Dr. John H. Musser, Philadelphia; "The Press," Robert B. Risk, Lancaster.

The committee having in charge the arrangements of the jubilee was composed of Drs. George R. Welchans, Geo. R. Rohrer, M. L. Davis, Lancaster; Dr. A. M. Miller, Bird-in-Hand, and Dr. J. R. Leaman, Mountville. They did their work well, and their efforts were attended by a degree of success that can not but be highly gratifying to the members of the Society. We will print Dr. Ziegler's very interesting address in an early issue.

BOOK NOTICES.

Announcement. Messrs. J. B. Lippincott & Co., of Philadelphia, announce the seventeenth edition of the United States Dispensatory as in the bindery. The work will be ready for delivery in a few days.

The Physician's Wife; and the Things that Pertain to Her Life. By Ellen M. Firebaugh. With portrait of author and 44 photo engravings of original sketches. In one crown octavo volume of 200 pages. Extra cloth, $1.25 net. Special limited edition, first 500 copies, numbered, and printed in photogravure ink on extra fine enameled paper; bound in half-leather and vellum cloth, $3.00 net. Philadelphia: The F. A. Davis Co., Publishers, 1914 and 1916 Cherry Street.

This little book is the outcome of a paper on the "Physician's Wife," read by the authoress, by invitation, before the Æsculapian Society of the Wabash Valley at its meeting held in October, 1893. She subsequently enlarged the paper, and this book is the result.

A Treatise on Headache and Neuralgia, including Spinal Irritation and a Disquisition on Normal and Morbid Sleep. By J. Leonard Corning, M.A., M.D., Consultant in Nervous Diseases to St. Francis Hospital, New York. With an appendix. Eye Strain a Cause of Headache. By David Webster, M.D. Illustrated. Third edition. Pp. 275. New York: E. B. Treat. 1894. Price, $2.75.

This book is a good companion to the work on "Neurasthenia" by the late Dr. Geo. M. Beard and published by the same house, and is worthy of the very favorable reception it has heretofore received at the hands of the profession. In this edition the author has added a chapter on the "Localization of the Action of Remedies upon the Brain," Dr. Webster confines his remarks "to those headaches which are dependent upon: 1, errors of refraction; 2, impaired accommodation; and 3, insufficiency of the extrinsic ocular muscles."

A Practical Treatise on the Diseases of the Hair and Scalp. By George Thomas Jackson, M.D., Professor of Dermatology, Woman's Medical College, New York, Infirmary, etc. New, revised and enlarged edition. Pp. 414. New York: E. B. Treat. 1894. Price, $2.75.

The first edition of this book appeared in 1887, and the studies that have been made since that time have made a new edition necessary. The bibliography has been brought down to January, 1893. The work is divided in four parts. Part 1 treats of the anatomy, physiology and hygiene of the hair; part 2 of the essential diseases of the hair, which includes grayness and other changes in color, alopecia, alopecia areata, atrophia pilorum propria, hypertrophia pilorum, trichtasis and distichiasis, and sycosis; part 3 treats of the parasitic diseases of the hair, and contains seven chapters; part 4 treats of diseases of the hair secondary to diseases of the skin, and also contains seven chapters, and the work concludes with an appendix giving the bibliography and journal literature of the subject from 1860 to 1893.

MISCELLANY.

Indian Medical Congress.—The proposal to hold an Indian Medical Congress has, it appears, every prospect of being realized. It seems to be generally agreed that Calcutta will be the most suitable place for the first meeting, and another element which augurs well for the success of the scheme is the warm interest taken in it by Surgeon Colonel R. Harvey, Inspector General of Civil Hospitals, Bengal.—*British Medical Journal.*

A Deceitful Dutch Doctor.—The old cry that the Dutch have taken Holland, was repeated in Chicago last week when a "Dr." Van Noppen began to receive Dutch diplomas in response to the following which, according to the daily press, appeared in excellent Dutch in certain Holland papers:

Wanted.—A physician who has graduated from a Holland medical college to locate in Pennsylvania, U. S. A. Free transportation will be furnished, free house and stable rent, and an income of $5,000 per annum guaranteed by the Government. In answering please send your diploma. Mr. Zuidema, No. 190 Ferdinand Street, Chicago, Illinois, U. S. A.

The Netherlands Consul, according to an interview published in the *Tribune* of the 17th, said:

"Yes, unfortunately, it is true. Thirty answers, in round numbers, have been received up to date, and more are coming every day. Only yesterday one physician sent a cablegram which must have cost at least $20. Most of these letters contain all the papers which give the sender a right to practice medicine, and in many instances they could not be replaced should they have been lost. I am returning them as rapidly as possible, with an explanation which will probably make them more careful about parting with these documents in the future."

This is one of the worst swindles that has been perpetrated for many a day. It is supposed that Van Noppen wished to sell the diplomas, but his exact purpose is as yet shrouded in mystery, as he has not been prosecuted. It is quite probable that if the aforesaid Van Noppen should be caught in Holland, he would be dropped over a dyke and drowned in a ditch.

"Antipyrin," is manufactured exclusively under the Knorr patents by the Farbwerke at Hoechst. It is estimated that not less than seventy-five tons of this preparation are manufactured and sold annually, representing, according to one authority, a value of $1,452,000, the greater part of which is clear profit.—*U. S. Consular Reports.*

House-to-House Inspection.—The Health Officer of Chicago has been urged to have a house-to-house inspection of the houses in Chicago to find out if possible, the number of cases of smallpox actually in the city at the present time. The disease is steadily, but slowly, being diffused throughout the city.

Actinomycosis.—The Chicago *Inter-Ocean* has started a crusade against meat dealers who kill "lumpy-jaw" cattle. Alderman Campbell introduced the following order at the City Council, February 19, which was passed by a unanimous vote:

Whereas, It is charged by the press that many thousand lumpy-jaw cattle are slaughtered yearly at the Stock Yards and placed upon the market for food, therefore be it

Ordered, that the Corporation Counsel be and he is hereby directed to prepare and present to this Council an ordinance providing for the killing by shooting of all lumpy-jaw cattle in the yards and turning them over to the Union Rendering Company.

The Late Professor Billroth.—Sir William MacCormac in the *British Medical Journal* for February 10, thus gives a personal reminiscence of the lamented Billroth:

"Few men more than Professor Billroth could inspire one with a greater sense of combined power and modesty. In manner and appearance he was most winning and sympathetic. His pupils and friends alike admired and loved him. I met him after the war in 1870-71, when he had already left Switzerland for Vienna, and several times in company with Langenbeck, his former master and fast friend. At that time it was thought by some in Vienna that he was still German in feeling, and would return sooner or later to take Langenbeck's succession; but this was not so, and he became in all his work and sympathy completely identified with the people among whom he lived. He was prominent amongst all his cotemporaries in Austria, and sent his pupils to fill the chairs of surgery, not in the Austrian universities alone, but, as in the case of Czerny and others, to many German universities as well.

As an operator his knowledge and boldness were only equalled by his brilliant execution and skill; and what he did and the reasons for doing it were explained to his overflowing class with a rare talent for exposition. His patients, attracted by his great fame, came from very distant parts—not rich only, but poor also, to fill his hospital beds. He loved his science and art, but he also loved other arts as well, and painting and music were his favorites, while the great masters of both were amongst his most intimate friends.

One personal reminiscence may be interesting as showing his princely hospitality. During the great International Exhibition in Vienna he entertained a party of about one hundred military and civil surgeons who had come to attend a conference on the subject of medical aid in time of war, at a banquet at Vöslau, a well-known suburban resort of the Viennese. There were the choicest wines, from the Imperial Tokay downwards; native oysters from Colchester; sturgeon from the Volga and, last and best, Strauss' band I shall not easily forget the magical effect produced when, after dinner, Johann Strauss, one of Billroth's great friends, mounted the orchestra and, waving his bâton, the band played the "Beautiful Blue Danube." The music was beautiful before, but it seemed transformed when Strauss led it. Immediately afterwards Billroth gave the only toast proposed on this memorable occasion. He said: "*Ein Oesterricher grüsse ich Sie, in Oesterich, mit Oesterich.*" The response did not want in enthusiasm. This dinner took place in a restaurant on the slope of a vine-clad hill covered with ripening grapes, which were to make wine such as we were drinking.

Our journey to this beautiful spot was by special train composed of carriages fitted up for the transport of wounded during war, a lazarette train, with everything of the most complete description for the purpose in view. It was, in fact, a large hospital on wheels.

Hospital Notes.

New Emergency Hospital.—South Omaha organized an Emergency Hospital Association February 12.

Hospital Fire.—The New Mercy Hospital on Prairie Avenue near Twenty-sixth Street, Chicago, was slightly damaged by fire February 16.

St. Joseph's Hospital, in Kansas City, has just completed an addition containing one hundred beds for surgical cases, with every modern facility, including a new laparotomy room with the finest equipment.

Must be Enlarged.—The pressure for admission to the New Lowell, Mass., General Hospital was so great that at a meeting of the Hospital authorities February 10, it was decided to take up the question of enlargement as soon as practicable.

Deaconess' Hospital.—The Deaconess' Society of Dayton, Ohio, held their annual meeting January 23. The following officers of the Hospital were elected: President, Capt. A. A. Simonds; Vice-President, Rev. H. J. Colby, D.D.; Recording Secretary, Rev. Benj. S. Stern; Corresponding Secretary, Rev. R. T. Wegener; Financial Secretary and Treasurer, Louis H. Poock, Esq. Rev. C. Mueller is the Superintendent. The completion of the new building is being urged as much as possible, but more money will be needed to pay the entire cost.

Altoona, Pa., Hospital.—The annual meeting of the Altoona, Pa., Hospital was held February 7. Mr. McKiernan was chosen chairman and made a brief address. Messrs. W. J. Denning, W. W. Murray and L. R. Levan were sworn as judges of election, and the following gentlemen were elected trustees without opposition: John P. Levan, John M. Wallis, George W. Stratton, H. J. Cornman, H. C. Dern, David K. Ramey, F. L. Sheppard, A. J. Anderson, William Stoke, Benjamin F. Custer, William Murray, Theodore H. Wigton, Albert F. Heess.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from February 10, 1894, to February 16, 1894.

Capt. REUBEN L. ROBERTSON, Asst. Surgeon U. S. A., is granted leave of absence for one month, with permission to apply for an extension of one month.

Col. JOSEPH R. SMITH, Asst. Surgeon General, is granted leave of absence for one month and ten days, to take effect upon the adjournment of the Eleventh International Medical Congress, to be held at Rome, Italy, March 29 to April 5, 1894.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending February 17, 1894.

Surgeon A. F. PRICE, ordered to the torpedo station, Newport, R. I.

Surgeon H. E. AMES, detached from torpedo station, and to the "Richmond."

Asst. Surgeon M. W. BARNUM, ordered to temporary duty on the "Ranger."

Asst. Surgeon M. W. BARNUM, upon the reporting of relief, detached from the "Ranger," ordered home and wait orders.

P. A. Surgeon G. T. SMITH, detached from Naval Hospital, Chelsea, and ordered to the "Ranger."

Asst. Surgeon M. R. PIGOTT, detached from the "Richmond," and to Naval Hospital, Chelsea.

P. A. Surgeon T. B. BAYLEY, detached from the "Machias," and to the "Richmond."

P. A. Surgeon JAS. F. KEENEY, died on board the U. S. S. "anger," Feb. 10, 1894.

LETTERS RECEIVED.

(A) Andrews, J. B., Buffalo, N. Y.; Atkinson, W. B., Philadelphia, Pa.; Allen, Dudley P., Cleveland, Ohio.

(B) Bates & Morse Adv. Agency, New York, N. Y.; Burns, R., Honesdale, Pa.

(C) Clevenger, S. V., Riverside, Ill.; Cochran Jerome, Montgomery, Ala. (2); Carstens, J. H., Detroit, Mich.; Conner, P. S., Cincinnati, Ohio; Chadwick, H. J., Hart, Mich.; Clark, A., Stockton, Cal.; Canfield, W. B., Baltimore, Md.; Coulter, J. Homer, Chicago, Ill.; Cooper, E. H., Galesburg, Ill.

(D) Dickson, J. H., Youngstown, Ohio; Dutton, C. F., Cleveland, Ohio.

(E) Ewing, F. C., St. Louis, Mo.

(F) Ferguson, E. D., Troy, N. Y.; Forbes, J. W., Cincinnati, Ohio.

(G) Greene, E. Milton, Grand Rapids, Mich.

(H) Horn, W. F. Jr., Washington, D. C.; Henderson, N. H., Chicago, Ill.; Holmes, E. L., Chicago, Ill.

(K) Keating, John William, Ann Arbor, Mich.; Keasby & Mattison, Ambler, Pa.; Keith, Wm., Chicago, Ill.

(L) Lydston, Jas. A., Chicago, Ill.; Lowell, J. P., St. Louis, Mo.; Lewis, C. H., Jackson, Mich. Emory Lanphear, M.D., Kansas City, Mo.

(M) Meyrowitz, E. B., New York, N. Y.; Milbourne Advertising Bureau, Baltimore, Md.; Moore's Newspaper Subscription Agency, Broekport, N. Y.; Magruder, G. L., Washington, D. C.; McClellan, E. S., New York, N. Y.; Murphy, A. G., St. Paul, Minn.

(N) Nickolson, W. A., Franklin, Pa.; Nutt, G. D. Williamsport, Pa.

(O) Orleans Parish Med. Ass'n, New Orleans, La.; O'Gorman, James, Baltimore, Md.

(P) Phelps, A. M., New York, N. Y.; Parkinson, Jas. H., Sacramento, Cal.; Parke, Davis & Co., Detroit, Mich.

(Q) Quine, W. E., Chicago, Ill.

(R) Rook, C. W., Quincy, Ill.; Reed, R. Harvey, Columbus, Ohio; Robb, Wm. H., Amsterdam, N. Y.; Ricketts, B. Merrill, Cincinnati, Ohio.; Reyburn, Robt., Washington, D. C.

(S) Spiegelhalter, Jos., St. Louis, Mo.; Schieffelin, W. H. & Co., New York, N. Y.; Smith, Q. C., Austin, Texas.

(T) Trueheart, P. P., Sterling, Kan.; Thorner, Max, Cincinnati, Ohio; The Æsculapian Society, Kansas City, Mo.; Thompson, W. R., Troy, Ohio; The Troy Buggy Works Co., Troy, Ohio.

(W) Wall, John P., Tampa, Fla.; Woodbury, Frank, Philadelphia, Pa.

The Journal of the American Medical Association

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ADDRESSES.

HISTORICAL ADDRESS.

Read before the Lancaster City and County Medical Society, on the occasion of the celebration of its semi-centennial, Feb. 14, 1894.

BY J. L. ZIEGLER, A.M., M.D.

MOUNT JOY, PA.

Time—noiseless, ceaseless, swift-winged time, has brought us to the fiftieth anniversary of our existence as a Society. It seems but yesterday that the venerable Dr. Samuel Humes first occupied the honorable position of President of the Lancaster City and County Medical Society.

On Feb. 14, 1844, the Society was organized by the adoption of a constitution and by-laws and the election of officers. There had been several preliminary meetings of the city physicians held at the house of Dr. Eli Parry, the first of which was held Jan. 18, 1844, at which meeting a sketch of a constitution and by-laws was submitted and a call issued to the physicians of the county to assemble on Feb. 14, 1844. This, the first meeting, will be best understood by reading the minutes:

"At a meeting of the medical gentlemen of the city and county of Lancaster, held this day pursuant to notice in the public papers, the following gentlemen were present: Drs. Samuel Humes, F. A. Muhlenberg, A. M. Cassidy, P. Cassidy, C. L. Baker, J. Leonard, J. S. Clarkson, J. B. Stubbs, Henry Carpenter, W. B. Fahnestock, J. A. Ehler, M. R. Gryder, Ely Parry, F. S. Burrows, N. W. Sample, Jr., J. L. Atlee, D. Hayes Agnew, A. Bitner, G. B. Kerfoot, S. Duffield, Jno. Leaman and W. L. Atlee.

"Dr. Samuel Humes was called to the chair and Dr. W. L. Atlee appointed Secretary.

"The object of the meeting having been stated by Dr. Eli Parry, the prime mover of this Association, it was, on motion,

"*Resolved*, That the minutes of the proceedings of the city meetings be read for the edification of the country members.

"After reading the minutes it was, on the motion of Drs. Burrows and Muhlenberg,

"*Resolved*, That the constitution and by-laws be read, and that after their reading a joint committee of three members from the city and three from the county be appointed to take them into consideration and present them to the meeting in the afternoon for final adoption.

"Committee: Drs. J. L. Atlee, Burrows and Parry, of the city; and Drs. Stubbs, Duffield and Sample, Jr., of the country. The meeting then adjourned to meet at 2 o'clock P.M.

"At 2 o'clock P.M., the meeting being called to order, the minutes were read and adopted. Dr. H. E. Muhlenberg was present in addition to the gentlemen above named.

"The committee appointed in the morning presented the constitution and by-laws, which were considered by sections, and after some slight amendments the whole constitution and by-laws were, on motion of Drs. Parry and J. L. Atlee, adopted.

"On motion of Drs. J. L. Atlee and Parry:

Resolved, That a committee be appointed to nominate the officers recognized by the constitution.

"Committee: Drs. J. L. Atlee, Clarkson, Bitner, Duffield and Humes. After a short absence the committee reported the following nominations: For President, Samuel Humes, M.D.; Vice-Presidents, F. A. Muhlenberg, M.D., Samuel Duffield, M.D.; Recording Secretary, Henry Carpenter, M.D.; Corresponding Secretary, Washington L. Atlee, M.D.; Treasurer and Librarian, Eli Parry, M.D. On motion of Drs. Burrows and F. A. Muhlenberg:

"*Resolved*, That the nominations close.

"*Resolved*, That the gentlemen nominated be considered the officers of this Society until the stated meeting in January next.

"Dr. J. L. Atlee now nominated for membership the following gentlemen: Wm. E. Maxwell, M.D., Marietta; John Myers, M.D., Marietta; Jacob Glatz, M.D., Marietta; Richard E. Cochran, M.D., Columbia; Wm. S. McCorkle, M.D., Columbia; Geo. Moore, M.D., Columbia, who were elected.

"Letters signed H. Shoenfeld, M.D., and Daniel E. Shirk were received, read and ordered to be laid on the table.

"On motion of Drs. Parry and Carpenter:

"*Resolved*, That a committee be appointed to transcribe the preamble and constitution on parchment and present it to the Supreme Court for an act of incorporation.

"Committee: Drs. Parry, H. E. Muhlenberg and W. L. Atlee.

On motion of Drs. J. L. Atlee and F. A. Muhlenberg:

"*Resolved*, That a committee of three be appointed to make a selection of medical journals, which shall be subscribed for by the Librarian.

"Committee, Drs. J. L. Atlee, F. A. Muhlenberg and Burrows.

"On motion of Drs. Parry and Carpenter:

"*Resolved*, That the officers of the Society be authorized to procure such books as their duties require.

"On motion of Drs. Parry and Carpenter:

"*Resolved*, That a committee be appointed to procure a suitable room for the meetings of the Society.

"Committee, Drs. Parry, F. A. Muhlenberg and Humes.

"On motion, adjourned.

"SAMUEL HUMES, Chairman.

"WASHINGTON L. ATLEE, Secretary of meeting."

We point with pride to the distinguished originators of our Association, and we hold in grateful remembrance the men eminent in their profession whose labors shed a luster on our Society.

Of those whose names stand upon the records at its organization, all have gone to their rest with one exception, Dr. J. Augustus Ehler, who is still engaged in the active duties of the profession with such vigor

and energy, that were it not for the "flourishing almond tree" one could not realize the possibility of his participation in the organization of our Society.

The Lancaster City and County Medical Society, if not the first organized in the country, may be said to be the pioneer. It was the first to aim at the general organization of the medical fraternity of the country. It antedates both the National and our own State Society. Its members took an active part in their organization, and its principles are engrafted upon their government.

In 1848, fifty-nine physicians, representing twelve counties, including delegates from medical colleges, hospitals and local societies, met in our city of Lancaster and organized the Medical Society of the State of Pennsylvania. The Lancaster City and County Medical Society had nine representatives in this body, six of whom were participants in the organization of the Lancaster City and County Medical Society, which with a beginning of twenty-three members, has increased to ninety-five.

The State Society with a representation of 12 counties and 59 members has increased to a representation of 54 counties, embracing an enrolled membership of 2,500, with a representation of 500 delegates.

Our Society has been honored by the choice of six Presidents of the State Medical Society, and once by the highest honors of the profession, the President of the American Medical Association.

Your historian, forty-six years a member of the Lancaster City and County Medical Society, has a distinct recollection of all the originators of the Society, with many of whom he enjoys pleasant social and professional memories.

Dr. Samuel Humes, our first President—tall dignified and precise—"his lyart hafets wearin' thin and bare"—illustrious vestige of the old-time physician, eminent in council, widely known, highly respected, honored by the fifth reëlection as President of our Society, and the first President of the Medical Society of the State of Pennsylvania.

Dr. F. A. Muhlenberg, a man of fine physique, dignified and clerical in aspect, well stocked with scientific and medical lore, an accurate diagnostician, popular and often called upon in council, his presence gentle and soothing in the sick room, and paternal toward the younger members of the profession.

Dr. Francis S. Burrows, a graduate of Edinburgh, an Irishman "without guile," brimful of wit and good humor, the center of the social circle, a distinguished surgeon, kind, gentle and encouraging in the sick room.

Dr. John L. Atlee, whom all of you knew, whose presence gave such zest to our proceedings, whose energetic and active participation in everything pertaining to the profession he loved ended only at death, whose distinguished achievements and his elevation to the highest honors of the profession adds another star to the crown of our rejoicing. I can not forego the opportunity of again referring to his successful revival of the operation of ovariotomy under circumstances so unfavorable. When the opposition of the most distinguished surgeons was such that none but the bravest would dare to venture on such an untried field, yet in the face of such opposition, of contumely, and denunciation of pen and press as barbarous and cruel murder, he performed his first ovariotomy June 29, 1843, antedating the existence of our Society almost a year. The patient is still living in her eighty-third year.

Dr. Henry Carpenter, a descendant of physicians, the first and for many years the Secretary of our Society, a successful, extensive obstetrician, surgeon and general practitioner—with his cordial and social presence many of you are familiar.

I might mention many others, distinguished in the ranks of the profession, who retained their connection with our Society until their demise, but time does not permit, as a few of those who withdrew from the Society and sought other fields of labor demand a passing note.

Washington L. Atlee removed from Lancaster to Philadelphia, where he occupied the chair of Chemistry in the Pennsylvania Medical College. He became famous as a gynecologist and ovariotomist. He performed the operation more frequently than his brother, John L. Atlee, and in the beginning of his career shared with him the reproaches of those opposed to the operation. His first operation was performed March 29, 1844, nearly a year after his brother's first operation. The patient was Mrs. G. S. ——, residing near Mount Joy. His third operation was performed March 15, 1849, and was the first ovariotomy he performed under the influence of an anesthetic—a mixture of one part chloroform and two parts ether. He was noted for his kindness and affability. I shall ever remember with gratitude my first professional intercourse with him in the first year of my practice.

The name of Dr. D. Hayes Agnew stands out in bold relief among the galaxy of peerless exemplars. His eminence as a surgeon, a teacher, a writer and a Christian gentleman is so well and so extensively known that it needs no commendation. Our Society deems itself highly honored by having his name inscribed upon the roll of its membership.

Dr. John Leaman, after practicing medicine very extensively and successfully for a number of years, entered the ministry of the Presbyterian Church, and was also elected Professor of Anatomy and Physiology in Lafayette College, a position he faithfully and satisfactorily filled until his death.

Of the members of our Society who joined subsequent to its organization, and who have closed their earthly career, much might be said in remembrance of their labor and virtues, would time permit, but I can not refrain from the mention of one who was so recently in our midst, whose high attainments and whose presence added so much to the pleasure of our meetings, whose advice and counsel was so acceptable, whose interest in the welfare and progress of the profession was always sincere, as was his detestation of dishonorable practice and quackery—the father of physicians—Dr. Joshua M. Deaver.

But the old familiar faces greet us no more. The voice, hushed in death, no more is heard expressing the kindly welcome or the sage advice; their lifework is done. "And like one who wraps the drapery of his couch about him and lies down to pleasant dreams" they have passed away; their hopes and fears, their trials and triumphs, their deeds of love and charity will only be known when the Book of Life shall reveal the records of eternity.

> "There is no death; what seems so is transition;
> This life of mortal breath
> Is but a suburb of the life elysian
> Whose portal we call death."

How many changes have been wrought during this

half century, the changes of many colored life. Old landmarks have passed away; the landscape, ever changing, ever new, has been transformed, teeming with busy life, nature and art vying with each other to add new beauties to the scene. The lightning drawn from Heaven, becoming an obedient servant, has been made to transport us from place to place and light us on our way; made to carry our messages of love and sorrow, trade and triumph, success and failure, annihilating time and space. Days have been changed to hours, minutes to seconds.

The progress in the arts and sciences and every department of human industry has been unprecedented.

The mind is lost in wonder and amazement when comparing the present with the past. And yet our present advancement must not be attributed alone to the genius of the present generation. The agencies bringing about these results are but the outgrowth of the patient, and ofttimes unrequited, labors of those whose names are almost forgotten.

Lancaster County is second to none in the world's history for its influence on human progress. He who shortened the pathway of the ocean, brought the continents into closer proximity and revolutionized commerce, was born in Lancaster County. Robert Fulton, by his application of steam to navigation, did more towards the spread of the arts of civilization than any other agency. Though despised and derided in his first feeble attempt, to-day the rivers, lakes and oceans of the world teem with the evidences of his success.

So, too, in our own profession, Dr. A. Kuhn, an almost forgotten citizen of Columbia, who was elected Professor of Botany and Materia Medica in the University of Pennsylvania and one of the physicians of the Pennsylvania Hospital. It is said he was remarkable for his carefulness, precision and punctuality.

Dr. Benjamin Smith Barton was born in Lancaster—a distinguished medical teacher, writer and physician. He was early in life, chosen Professor of Botany and Materia Medica in the University of Pennsylvania, and after the death of the distinguished Dr. Rush he was appointed to the chair of Practice of Medicine. "Natural history and botany were his favorite studies, and in his investigations of these branches of science he made a conspicuous figure."

Dr. Jno. Eberle, a native of Lancaster County and a citizen of the village of Manheim, was a Professor of Materia Medica and Obstetrics in Jefferson Medical College, and a writer of distinguished merit. His treatise on "The Practice of Medicine" was considered at the time of its publication one of the most valuable works on this subject that was ever issued from the American or English press.

The labors of these distinguished men, with others in the profession, laid the foundation for the advent of a galaxy of bright stars in our professional world—whose names and influence were ever foremost in the advancement of the best interests of our profession, by advocating a wider and more thorough system of education, and by their labors in the organization of the profession, in commemoration of which we are this day assembled. One can not properly appreciate the immense advantage derived from the organization of the profession into county, State and National associations.

Just here allow me to digress, by reminding those who are not yet members of the National Association that it is their duty to show their appreciation of the labors of our predecessors by uniting their influence with the American Medical Association. This can so easily be done by simply sending the credentials of membership of the county society, together with the annual fee, to the treasurer; your name will be enrolled on the list of membership, and you will receive in return the weekly visits of the best medical journal published in the land.

Contemplate for a moment the character of the profession before medical societies existed. Then every man's hand was against his neighbor; envy, jealousy, fault-finding and traducing injured the whole profession in the estimation of the public. Now the science has been so much enlarged and advanced in the various departments, and so rapid is the progress, and it requires so close an application to study in order to keep abreast with the times that one finds little time to quarrel with his neighbor. At the same time these gatherings make us better acquainted with each other and round off the sharp corners of asperity, uniting us, and helping each other as brothers engaged in the arduous labors of a noble and honorable profession.

A retrospect of the history of our science for the past fifty years will bring to our attention a vast change and a permanent advance toward its establishment as a true science.

Then, anesthetics were unknown; now, the greatest boon ever conferred upon suffering humanity. Contemplate for a moment the courage required of a patient about to submit to some fearful operation, conscious of the agony to be endured while submitting the quivering flesh to the knife. Contrast this with the calm, happy and undisturbed oblivion of all pain, and you will realize the blessing conferred upon thousands daily who are compelled to submit to the surgeon's art.

The discovery of pathogenic microörganisms and their rôle in the production of disease is one of those triumphs of science which has enabled the surgeon to secure favorable results to an extent never thought of by our predecessors; and to the physician it is a field of wide extent and inestimable value; although much remains to be explored, yet the results already obtained demonstrate the possibilities in store for the careful observer and earnest worker in the domain of preventive medicine.

The microscope (which within the recollection of your historian was simply considered a philosophical toy) has thrown a flood of light upon this subject, for without it we would still be groping in the darkness of conjecture, and to it we owe the knowledge obtained by the bacteriologist; and I may add that it has become indispensable to the physician as an aid to diagnosis. What the microscope has revealed as the cause—asepsis and antisepsis—enables the surgeon to prevent or counteract.

The hypodermic syringe has enabled us to defy nausea, and almost instantly to relieve suffering, and it has removed all doubts concerning the effects of drugs upon the system.

By the aid of the thermometer in diagnosis we can be more certain of the character of disease, and be directed as to the nature of our remedies.

The laryngoscope and the ophthalmoscope have enabled us to inspect living organs, and the aid furnished by these instruments has qualified us to treat diseases with an exactness hitherto unattainable.

Indeed, there have been so many additions and

helps by instruments of precision that their mere enumeration would prove irksome. In the department of materia medica it is simply impossible to enumerate, in the time allotted to our subject, the changes and progress that have been made. There has been probably no greater advance in practical medicine than in antipyretic medication. Chemistry, especially organic chemistry, has added a long list of those substances derived from the hydrocarbon series, many of which possess decided antipyretic properties. A few only have been generally used, such as antipyrin-acetanilid and phenacetin—their number is so great, their composition so complex and their therapeutic application so undetermined that any further notice of them will readily be excused.

This progress in medical science we chiefly owe to the advancement made in the science of chemistry and physiology, and in which our predecessors exercised a conspicuous influence. The annals of our organizations bear testimony of their urgent demands for a wider field of scientific research and a more thorough training in professional studies. Fifty years ago, chemistry and physiology was a mere side show to the student of medicine; indeed, most of our medical colleges did not have a chair of physiology, and the lecture hour occupied by the professor of chemistry was generally devoted by the tired student to worship of Morpheus.

To-day, chemistry and physiology have become the chief corner stone of the science of medicine, and he who would rank as an educated physician must cultivate these sciences. In view of what has been said, and the many subjects of interest and profit necessarily omitted, we need not be surprised that the efforts made for a more thorough education and a more prolonged course of instruction are so urgently demanded by the profession; and as we have to a limited extent obtained legal protection we may, with brighter hope, look forward to the time when sectarian medicine with its pompous arrogance and ignorant self-conceit will be relegated to that oblivion to which it is justly entitled.

Let me say to those who have recently entered, and to those who are about to enter the profession, that by the general diffusion of knowledge and the impetus of our public system of education, the future generations will be much more competent to judge of your ability, and will demand a higher standard and a more thorough knowledge of your profession; although great has been the advance and rapid the accumulation of facts elicited by our modern appliances and agencies for the prosecution of research, so that the neophyte might think there is nothing left for him to do but simply follow in the footsteps of his predecessor. Let him not be deceived. We are only on the threshold of the temple of medical science, and the possibilities in store for the earnest worker will amaze the laggard and leave him stranded in the bogs of hesitancy and irresolution.

Let me urge our young men to arouse, and imitate our great predecessors in untiring application, earnest prosecution and unflinching determination. If Agnew or an Atlee had not possessed these qualifications we could not point to them to-day with the pride and rejoicing in the honor which their membership confers upon our Society.

It is upon the young men of to-day that the duty devolves of continuing this work so nobly pursued by the men whose memories we this day recall, and whose patient endurance has erected for them monuments that shall endure when the physician's art shall no longer be a necessity.

To the younger members of our Association we look for a continuance of the advances already made, the exploration of new fields and new agencies, for the amelioration of suffering humanity, for aid in extending and uniting in compact legions the co-workers in our noble profession; laying aside selfishness, jealousy and bickerings with an ardent desire and just emulation to excel in every good work, so that when our centennial shall have come, the historian may point with pride to a galaxy of brighter stars in the crown of their rejoicing.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

[From the WASHINGTON STAR, February 15.]

The celebration of the seventy-fifth anniversary of the Medical Society of the District of Columbia was marked by the delivery of several addresses which, inspired by the occasion, have more than a passing interest.

The President of the Society, Dr. Samuel C. Busey, in his address dwelt upon some of the notable facts in the history of the Society of which he is the honored head. He said:

"Inasmuch as the occasion which has brought us together tonight is one of those historic events which emphasize the permanency of this city as the capital of a great and powerful nation, and following so quickly the commemoration of the centennial anniversary of the laying of the corner stone of the Capitol, identifies the history of medicine with that of the city from its foundation to the present time, I will venture to recall your attention to such historic data as will establish the coincident relation of the medical profession in this city with its early history, development and present prosperous condition.

"On July 9, 1790, Congress passed and on the 16th of the same month Washington approved the Act 'establishing the temporary and permanent seat of the Government of the United States on the River Potomac.' In March, 1791, Washington issued a proclamation defining the limits of the new federal territory and directing the commissioners and engineer to proceed with the preparation of the plan of the Government city. On Sept. 18, 1793, the corner stone of the Capitol was laid by Washington, and on the first Monday of December, 1800, the Congress of the United States began its first session in the Capitol in this city.

THE EARLY PRACTITIONERS.

"When Drs. Samuel Brown and John Crocker settled here, 'the territory was inhabited by a few farmers, their servants, and, perhaps, some tradesmen and fishermen.' With the settlement of Frederick May, a native of Boston and a graduate of Harvard University, in 1795, medicine as a science had its beginning in the city of Washington. Others followed and in 1815 there were 'nine physicians and two practicing apothecaries.' The first associate assemblage of the physicians of this city took place in 1813, called by public advertisement 'to take suitable notice of the death of Dr. Benjamin Rush,' the

father of American medicine, and to appropriately commemorate his life and professional services.'

"Perhaps prior, but certainly during several years succeeding this date, the influx of charlatans and pretenders was so extraordinary, and such injuries and wrongs were perpetrated by them upon citizens, that the qualified physicians began to consider and discuss methods of procedure and organization by which the community could be protected from such wrongs and informed of the qualifications of those fitted to practice the healing art. Those efforts culminated in a petition to Congress in 1818, signed by twenty-one physicians, for the charter, which was granted, and approved by President Monroe on the 16th of February, 1819.

"We have invited you here tonight to unite with us in commemoration of that event. And, now that you know those noble founders were animated by the highest inspiration of Christian philanthropy and beneficence in the foundation of a medical society, which has lived through a period of seventy-five years, contemporaneous in history with the federal city and the Government, you will appreciate and honor the pride we take in giving expression to our praise and gratitude in memory of those noble men on this anniversary night. From 21 it has grown to an active resident membership of 214, of whom but two have passed the age of allotted life-time, and its senior in membership is a decade younger than it. I need not, then, tell you that in physical vigor and intellectual alertness it is now in the very prime of mature life.

DECREASE IN AVERAGE AGE.

"Such youth and vigorous manhood have not always characterized its membership. The average age has diminished with time and the increase of numbers. Among the honored dead twenty-seven lived beyond three score and ten, of whom six were founders; nineteen died at ages between 50 and 63 years, after the date of graduation, and seven held continuous membership in this Society for periods of fifty to sixty-three years.

"The average age of these venerable decedents was seventy-six and one-half years, the youngest of whom died at 70, in 1874, and the last at 89, in 1893.

In the primitive era of medicine in this city and during the early history of this Society the life of the general practitioner could not have been less arduous than since. Many of them began life when the practice of medicine was primitive and unremunerative in a community struggling with poverty in the development of a new city. It is true that the average lifetime of the medical is much less than that of either the legal or clerical professions, but this general law of vital statistics fails to explain the average youth of the present membership, which represents five of the eight decades of the life history of this Society. These data are somewhat phenomenal, and, perhaps, without special significance; nevertheless, they emphasize the fact that the pursuit of the art of healing is not conducive to longevity, and, while the average life of men in general is increasing, that of the medical profession is decreasing. With an average of forty-three and one-half years, and a prospective death rate of 57 per cent. under 65, the problem of life and longevity is of sufficient magnitude to command your attention. It will not do to ascribe this high death rate during the prime of life and manhood wholly to mental worry, sleepless time and inadequate remuneration, for these find compensation in the assured livelihood, conscious pleasure and consolation of duty well done. Whether referable to such esthetic or to graver consideration, the time has surely come when the causes of the comparatively low average life of men engaged in the science of saving and prolonging life should be intelligently and definitely ascertained. Those few, thirteen in all, who have reached and passed the age of highest death rate are equally sure of the inevitable, but can offer their juniors the consolation of their good wishes.

CONTINUED IN ONE FAMILY.

"The elder May came here in 1795, five years before the transfer of the Government to this city. He was a pioneer who prepared the way for others, and the founder through whose professional life the history of medicine in this city during the years antedating the organization of this Society can be traced through membership to and before the establishment of the Government here, and continuously with its growth and development down to the present time. His son, John Frederick, was born and began the practice of medicine in this city and died a member of this Society at the age of 80, leaving a son now an active resident member. In this family the continuity of membership has been unbroken from its organization to the completion of its seventy-fifth anniversary. This Society, then, claims a life-time beginning before the Government at Washington and coeval with the foundation of the city on the River Potomac.

"The Medical Society of the District of Columbia is the youngest of twelve medical societies in this country, now in existence, which have reached and passed the seventy-fifth year of continuous active life, and is the oldest, if not the first, scientific body chartered by an act of the Congress of the United States. Ten of its founders were natives of Maryland, four of Virginia, two of Massachusetts, two were born within the present limits of the District of Columbia and of three the nativities are unknown. In personal lineage it is confined to three of the original thirteen States, but as a scientific body it claims ancestral descent from eleven progenitors, who are present by representation with us tonight. It is, however, the natural and direct heir of the medico-chirurgical faculty of Maryland.

"With such an ancestry dating back to 1766, during the period of colonial discontent and strife; a foundation springing from the noble impulses of humanity and inspired by motives of high professional responsibility; fulfilling in its corporate capacity, throughout its long life, the charter declaration to promote and disseminate medical and surgical knowledge, and keeping abreast with the progress of science which has made medicine the handmaid of religion, do you wonder that the successors of those who gave birth to this Society, now living in a community representing the intelligence, civilization, progress and power of a nation of sixty-five millions of free people, should invite you to this reunion to tell you how faithfully they have kept the promise of its founders, and to unite with them in giving thanks and praise to that Providence which rules the universe?

THE GLORY OF THE PRESENT.

"The period comprising the years from 1819 to 1894 has been one of marvelous progress in science, literature, art and in all that pertains to Christian civilization. The village city, with its domain of farms, scattered homes, graphic streets and avenues, 'squares in morasses' and 'obelisks in trees,' has become the metropolis of a munificent nation, under whose supervision it has grown into a city surpassing in beauty and rivaling in attractiveness the more favored cities of both the old and new world, and holding together in one compact community a cosmopolitan population where education and culture need neither the blazonry of titular insignia, the heraldry of ancestral distinction nor the glamor of wealth to command position and influence.

"During the same period medicine, here and elsewhere, advancing along the lines of pathologic research and physiologic therapeutics, has escaped the era of hypothesis and speculation and now, as a science of precision and demonstration, commands the respect and homage of the civilized world. Now, as heretofore and everywhere, it is foremost in charity, unselfish in devotion to the welfare of public health, magnanimous under public and private wrongs and generous to a fault in unremunerative perils and responsibilities. But even this is not the full measure of its philanthropy. The mission of preventive medicine and sanitary science will not be attained until the causes of disease are eradicated and death is limited to the ailments to which flesh is necessarily heir and the process of natural waste and decay. How soon, if ever, this may be accomplished remains with the laity. Medicine will continue the pursuit with the zeal and courage of a science which seeks the welfare of mankind rather than place and fortune. The medical is the only profession, trade or occupation which seeks, by its progressive attainment of its ultimate object, the continuous decrease of emolument."

THE SENIOR TO THE JUNIOR.

"One of the most pleasing incidents of this occasion is the presence of representatives of the eleven ancestral societies, the oldest of which was organized in 1766 in the State of New Jersey. This exhibition of fraternity is an exemplification of that beneficent spirit which dominates the medical profession and makes kindred of us all. Honored colleagues who will follow me will tell you of its achievements in science and of its educational and charitable foundations. I have only to conclude with a few words addressed to my colleagues and juniors.

"It could not have occurred before, and can never occur again, that the senior member will be unanimously reëlected to the Presidency on the forty-fifth anniversary of his membership and preside at the seventy-fifth anniversary of this Society. Such a unique compliment can not be acknowledged in words which will completely and fittingly convey the gratitude I feel for such expression of personal and professional regard. At the centennial reunion some one of you will stand where I now stand, upon whom will devolve the duty which thrills me with pleasure to-night. In the enforced retirement which must come soon, I will cherish the hope that each one and all of you may live to celebrate the golden wedding day of professional life. And in communion with the Savior of man, who was first to heal the sick, the lame, the halt and the blind."

Dr. Busey stated that it gave him great pleasure to make the statement that he is indebted to Dr. J. M. Toner, a distinguished member of the Society, for many of the historical data cited in this address.

THE ADDRESS OF W. W. JOHNSTON, M. D.

The address of Dr. W. W. Johnston was an interesting and valuable sketch of the Society from its early origin down to the present. He said: "Twenty-five years ago the first anniversary of the Society was celebrated as we are celebrating the seventy-fifth now. Then, as now, the present was forgotten in the greater interest of the past, and the history of the origin and early progress of the organization was told with a fullness and detail which will make the address of Dr. J. M. Toner a valued record for all time to come. I wish that he were standing in my place to-night and that you were listening to the story of that olden time which he has made so full of freshness and of life. I feel more than an ordinary emotion in speaking of the anniversary oration of twenty-five years ago, when I remember that my father introduced Dr. Toner to the audience on that occasion, and that with unaffected pleasure born of a life-long devotion to the interest of the profession and the Society, he heard the story of early struggles in which he had borne his part, and ultimate triumph in which he so much rejoiced.

"It is peculiarly fitting on this night of jubilee that we should have as presiding officer the oldest and one of the most honored of our members, and that he should be, at the same time, one of the most active workers in the present as in the past, giving his constant presence and his aid to all that means progress. In our efforts now to make the past a living reality, we will be much aided by the thought that he has shaken hands with every President of the Society except the first two, Worthington and Sim. And if you will but take our President by the hand you will be reaching back and touching that time which we wish to bring as near us as possible in our felicitations to-night. That he may long live to extend his counsel to the coming years, that he may add many links to the chain which binds him to those far-off days, and that the distant future may yet be as his past, is, I am sure your sincere wish, as it is mine.

"I can not restrain my voice from associating with the President's on this anniversary the name of Lovejoy, who is the second oldest member on our list. His familiar face and figure form a part of my earliest recollections of the Society, and his conservative wisdom is stamped upon every judicial and ethical decision of the last thirty years. The Society delights to honor him and to thank him to-night for years of honorable and faithful service."

IN THE EARLY DAYS.

The speaker prefaced his story of the early origin of the Society by a graphic picture of the city in the early days of the present century, when a few scattered houses occupied the present site. "The founders of our Society," he said, "were active, hard working men, too, some of them; 'Sim, the second President of the Society, would start out in the morning on a bob-tailed horse,' the chronicler says, 'and visit twenty to thirty families during the day.' A sharp critic of the times avers that he gave but two medicines—calomel and Dover's powder—to all his pa-

tients, whatever the nature of their diseases." Entertaining sketches were given of Dr. Charles Worthington, the first President, and Dr. Frederick May, the third President.

Reference was made to the activity of the Society, in all matters pertaining to public health. Action in regard to vaccination was recorded in 1846. Cholera claimed the attention of the medical men of this city in 1832, when 459 deaths were caused by this disease. "With every year some question of importance affecting the health of the city has been the subject of animated discussion; sewerage, the drainage of the flats, the public abattoir, the ventilation of public buildings, the nature and prevention of prevailing fevers, and numberless questions of similar import have been discussed, to the great edification of the members and the benefit of the public.

"Mention can only be made of the effort to secure a permanent home for the Society, an effort abandoned in 1869, by the sale of what would have been a most valuable investment—the property at the southwest corner of F and 10th Streets. This result was due to the failure to secure the sustained coöperation of the members in its purchase,and the few enthusiastic supporters of the movement were not able to carry it through without the assistance of all. But that the Society was able to go as far as it did in 1868, with a membership of 140, promises well for the ultimate success of the project, which is delayed, not abandoned. The Medical Society is not a rich body, or we would have had a home of our own before this. The successive balances in the treasury were, in 1851, $10; 1854, $20; 1863, $83; 1873, $374; 1884, $516; 1893, $1,919. For the excellent administration of its finances the Society is indebted to its Treasurer, Dr. Franzoni.

"The Society record is not without its humor, although fun is not always intended. In March, 1873, the Society was invited to participate in the inaugural honors to President Grant, and to appear in the procession on foot, on horseback, or in carriages, as they might see fit. The picture of the staid members of our Society riding on prancing steeds along Pennsylvania Avenue, bedecked with bright scarfs, and the Society banner of Hygeia waving in advance, would, without doubt, have created a sensation, and added greatly to the beauty of the pageant. On May 16, 1866, the case of Dr. Gudgeon, a veterinary surgeon of great weight and prominence, was reported to the Society, the doctor having succumbed to excess of fat. This individual weighed at the time of his death upward of 500 pounds. I can remember him as one of the sights of Washington for many years.

THE ROMANCE OF LIEBERMANN.

"The history of the Society is not without its romance. If I could extract from the lives of our members all the moving stories and incidents of heroism, of dangers met and overcome, all the numberless acts of chivalrous valor, when there was no martial music to incite to bravery, but only the sense of duty and humanity, I could fill pages and volumes. I would like to tell the romance of one who was presiding officer at the anniversary twenty-five years ago, who was a member for forty-eight years, a doctor for fifty years, coming to Washington in 1840, and dying at the age of 74. The story was told me by word of mouth, and is told here as I heard it.

"Liebermann was a Russian, the son of a banker of Riga; his education was carefully conducted, and in time he was sent to the University of Dorpat. Here he shared in the political sentiment of the period, and, like most other Russian students, then and since, adopted the revolutionary doctrines to which his age, his hatred of oppression and his love of freedom attracted him. While pursuing his studies at the University the fire of revolution broke out in down trodden Poland, and Liebermann, burning with revolutionary ardor, joined a band of students with the object of assisting this oppressed people. Armed with scythes, old muskets, and whatever weapons could be found, the students marched rapidly to the Polish frontier, and crossing it, advanced toward a town which afforded to their ardent courage, the opportunity wanted. With cries of triumph, waving their weapons in the air, they impetuously rushed through the gates, which seemed open to receive and welcome them But once within, the gates were suddenly closed; they found themselves caught, trapped; the town was already in possession of the Russians, and the young patriots were prisoners. Liebermann was hurried into Russia and flung into prison, preparatory to being sent to Siberia. Here he gave himself up to despair; his life seemed ended, and he saw a banishment worse than death before him. He could not eat nor sleep. In the same prison was a Polish woman of rank, much older than Liebermann. She took pity upon his youth and misfortune, and did all she could to comfort him. One day, calling him to climb a ladder in the cell so as to command a view from a window of the courtyard in the prison, she pointed out to him, in the midst of a convoy of prisoners on their way to Siberia, a man dressed in rags, covered with dirt and chained to the axle of a wagon; he was crouching on the ground, eating with apparent relish, a piece of black bread.

"'That man,' she said, 'is a Polish nobleman of high rank. His misfortunes are greater than yours; he has lost everything, property, family and liberty; he is going to perpetual banishment, and yet he lives and endures. You are young; you may escape; you should be hopeful and brave.' This lesson had its effect, and from this time he bore his imprisonment with more content. It was not long before he received the happy news that through the solicitation of influential friends he would be granted permission to go to Berlin and study medicine, under surveillance. He went to Berlin, profited well by the excellent teaching there, and in time received his degree. A passport was then given him to return to Russia by one of three ways. He chose to go by way of Hamburg, to take ship there and thus have an opportunity to visit this important city.

COMES TO THIS COUNTRY.

"On reaching Hamburg he saw an American clipper ship just about to sail for America. The adventurous spirit was strong within him, and, having money, he determined suddenly to visit the land of liberty before returning home. This plan, which could not have been formed by any one not of strong and bold character, was carried out. After a month's voyage he reached Boston. The city was then in the throes of a presidential election, and Liebermann's description of his first impressions of the processions,

flags, firing of cannons, and general din and excitement, was very amusing. From Boston he thought he would visit New York, and once there he could not return to Europe without seeing the capital of the country. In Washington he received the visit of a Russian acquaintance, who, learning of his education under Laugenbeck, and of the new operation for strabismus (cross-eye), brought to him a big butcher, whose eyes were looking in every direction but the right one. Liebermann operated so successfully that another case of the same kind was soon sent to him, and so rapidly did his fame spread as a corrector of deformities of eyes and limbs by tenotomy, that in a little while, without the wish or effort, he found himself engaged in active surgical practice. His departure, deferred from day to day, was, in time, indefinitely postponed, and it was not long before his marriage, his growing popularity, and his new associations, made him a permanent citizen of Washington, and a member of this Society, to whose welfare he was devoted for nearly fifty years.

"His characteristics were strong self-reliance, readiness of resources, much surgical and operative skill, and industry and energy. His manner was brusque, but his heart was warm, and his friendships and affections firm and fixed. It was one of his peculiarities that he would never attend any one professionally who lived on the same block, or in his immediate neighborhood, and when one of his old patients moved opposite to his residence on 13th street, between E and F Streets, he positively refused to continue to be his physician. Up to the very last his strength of spirit triumphed over his weakness of the body, and an hour before his death he rose from his bed, tottered to a chair and signed an important paper. He died lamented; he will live in our hearts honored and loved."

HOSPITALS IN WASHINGTON.

BY J. FORD THOMPSON, M.D.

The history of the hospitals of the District of Columbia was given in an address by J. Ford Thompson, who prefaced the purely historical portion by saying that "nearly everything that has been done to give our profession the high position it to-day occupies in the estimation of appreciative minds, professional or non-professional, has been the outcome of hospital teaching, for it is there, and only there, that those crucial tests of accuracy in judgment which our calling requires can be properly applied and verified. It may be considered as particularly fortunate that, as a rule, no objections are made, as no hardships are entailed to this using of the indigent sick for scientific purposes, and they may have some consolation in the thought that, as some recompense to the community for the often liberal expenditure of time and money, they offer themselves as a means of advancing the science upon whose success their own welfare depends.

"It is to be lamented that, at least in our own country, there is often a lack of harmony and good feeling in the ranks of those whose interests can only be subserved by an intelligent administration and a high standard of excellence in all that concerns the welfare and success of our hospital government; and this friction is generally most pronounced, as it is most frequent, between the medical staff, individually, or as a whole, and the governing body, however it may be constituted; and it inevitably leads to a condition of things which has often retarded the growth and limited the sphere of usefulness of many an institution whose promise was as bright as charity could wish or science expect. Perhaps it is not always easy to place the responsibility for such misunderstanding, but it seems to be due in the great majority of cases to a misconception of the bounds and limits of the respective fields of duty and management of the two responsible bodies. I should say that encroachments are too often made upon strictly professional domain, and that its rights, at times, are ruthlessly infringed upon, and its dignity and self-respect assailed, without any justifiable or reasonable excuse for the action.

"It would seem to be apparent to minds of ordinary intelligence, as a self-evident necessity, that the medical boards should be fairly and sufficiently represented in the directing body, and that their opinions and counsels should be sought, and duly weighed in all questions involving the interests they have so largely in charge, and their advice should be unhesitatingly accepted upon many subjects, of which they alone are capable of passing judgment, such, for instance, as the choice of physicians to fill vacancies in the medical staff, selection of assistants and general supervision of internal arrangement and management, that can only be intelligently performed by men whose scientific training and knowledge fit them for the duty.

THE IDEAL HOSPITAL.

"The ideal hospital, and fortunately there are some such, to my mind is one which forms a part of one great whole of a thoroughly equipped medical college, of which the faculty should constitute the staff, all being under the control and supervision of a board of governors of the university, of which the college should be a branch. As the selection for faculty appointments is always made with great care and discrimination in order to procure the best available teaching material, the hospital would be, in the same way, provided with a corps of co-workers of unquestioned ability and fitness for clinical work, which is the highest and most exacting of our duties. In addition to this there would be the advantage of an unfailing supply of new life and energy in the young men who are now connected with all medical schools as special lecturers and teachers upon subjects to which they contemplate devoting their life work. They would be thoroughly trained to the duties of their new position and ever ready and willing to supplant their seniors whenever the exigencies required.

"A system with the main features resembling this, which has already proved the best, must eventually be adopted by all schools which hope to retain their reputation or existence, for all recognize the fact that hospital treatment is rapidly replacing the old method of didactic instruction, and every year we feel more and more the necessity pressing upon us of making provision for the new demands, and nowhere, perhaps, is this want more keenly felt than in our own city. But the difficulties to be encountered before such an arrangement can be accomplished to our satisfaction are unquestionably great, if not entirely beyond any probabilities that are now apparent.

"Those who are familiar with the great hospitals of Europe and America can compare their relative merits, and they must experience a feeling of national, as well as professional, pride at the rapid develop-

ment and present efficiency of many institutions in our largest cities. Indeed, it will be admitted that in construction, equipment and management they are unsurpassed by any others in the world, for which, almost without exception, thanks are due to the thoughtful generosity of private citizens. Such an one should be here in the capital of the nation, and a model of its kind in architectural proportions to harmonize with its palatial surroundings and rich in all the appliances and furnishings commensurate with the great nation's wealth and power."

Dr. Thompson remarked that it was evident to those who had examined the records that this was a very healthy community when this country was young, or that those in authority were sadly indifferent to the physical welfare of the resident population. It seems rather remarkable that here, at the seat of government and a rapidly growing city, there was no provision made for the care of the impoverished sick before the year 1844, except the few beds furnished by the old almshouse, on M Street northwest between 6th and 7th Streets. It is gratifying to know that the leading physicians and many prominent citizens were active and zealous for many years in their efforts to procure the necessary legislation for the establishment of such an institution as the city sorely needed, but their labors had been all in vain down to the date mentioned, when a sudden and accidental turn of fortune enabled them to carry out their design.

THE FIRST GENERAL HOSPITAL.

Congress was induced by a pressing necessity to make an appropriation of $10,000 for the conversion of an old jail in Judiciary Square into an insane asylum, but after the necessary changes were completed it was found unsuited, particularly on account of its central location, for the purposes intended; and it was at this propitious moment that the Medical Faculty of the Columbian University appealed to Congress for the transfer to them of the building for hospital and other purposes, which being granted, they opened to the public without delay, our first general hospital.

In the year 1861 the Government took possession of the building for the use of the army, shortly after which it was entirely destroyed by fire. "The decade from 1861 to 1871," he said, "was an era in our national history, rich in momentous events, whose influences were felt in every nook and corner of the land. Our city was the heart and center of the great struggle and the theater in which was enacted the drama of war, and in its performance the medical profession played a conspicuous rôle. Hospitals in great number and of great proportions were hastily erected in various parts of the city, and our medical men became intensely absorbed in the field of duty most congenial to their tastes and capabilities.

"But in the decade mentioned there is much that more nearly concerns us than the trials and glories of the past, for during that period were organized and established upon an enduring basis almost all the institutions that are now in active operation, whose histories are interesting, but must be briefly told. Providence, Columbia, Children's, Freedman's and the Emergency, all fall within the ten years, the Garfield appearing upon the scene a little later."

The speaker alluded to St. Elizabeth's or the Government Hospital for the Insane, as in magnitude and all that pertains to the welfare of the special class of patients, one of the model establishments of the world.

"Of those mentioned in the list," he said, "as of importance to the present generation, the Providence Hospital comes first as to time and is second to none in the position it has so long occupied in this community. Its origin was in 1862, and was due to the helpless condition, as regards civil hospitals, of the city after the loss of the Infirmary the year previous, there not being one to take its place or meet the emergency, which was most keenly felt. The Sisters of Charity, then in charge of St. Vincent's Asylum, taking advantage of the opportune moment, decided to open a general hospital of their own and lost no time in carrying out their design. They at first occupied the old Nicholson mansion on Capitol Hill for a couple of years, and then secured by purchase the present site, to which they soon afterward moved, after erecting a frame building to the east of the old three-story house which stood at the southeast corner of 2d and D Streets southeast. This ground, and much more than the original purchase, is now covered by the large and handsome building of the present time.

"I have not the time, I think my allowance is about already expired, to give here a detailed account of this Hospital or any others, for I am now struck by the truth of the remark of a friend, when I told him I was expected to give the histories of the hospitals of Washington in twenty minutes. 'Why,' he said, 'with your best team you couldn't drive around and look at them in that time.'

OUR HOSPITALS COMPARE FAVORABLY.

"I shall have to close with some remarks applicable to them all, although the genesis and development of each are well worth study as illustrating the kindliness of human nature and the untiring zeal ever manifested by our doctors for their permanent success. Without doubt the essential question is as to the amount and character of the work done as compared to that of other cities more favored, in some respects, than ours; and to meet this question authoritatively is certainly very difficult, for our early records, and, indeed, it may be said, our later ones also, are far from being satisfactory in detail and thoroughness, so that personal observation and opinion must be relied upon to a considerable extent in forming a judgment as to our relative standing, past and present.

"An experience, beginning with the old Infirmary and extending through all the hospitals of the city, with one exception, to the present time, with many opportunities of studying the methods and practice of those at a distance may be some excuse for the confidence with which the assertion is made that in every material respect and in all that concerns the true progress of medicine the work of our hospitals compares favorably with that of others, and quite abreast with the best in appreciation of the modern advances of science. It will scarcely be claimed by the most enthusiastic that their careers reveal much, if anything, in the epoch-making and record-breaking line, but they do show capability and conscientious performance of duty, which always come out well in the end.

"Claims are often made of priority in the introduction of some new operation or method of treat-

ment of disease, for some particular institution or member of its staff; but few, I think none, have been made here, at least none well substantiated, with the probable exception of that made for Dr. McWilliams, of having first used adhesive plaster many years ago at the Almshouse Hospital for making extension in fractures."

OUR MEDICAL COLLEGES.

The theme of address by Dr. Thomas C. Smith was "The History of the Medical Colleges of the District of Columbia." Beginning with the first organized of these institutions, the Columbian Medical College, which started in 1821, the speaker traced the history of the schools that have flourished in the District. At this time, he said, there is in successful operation in this city four medical schools. A brief history was given of the medical departments of Columbian, Georgetown, Howard and the National Universities.

"The Columbian Medical College," the speaker said, "has had its ups and downs. While its second course of lectures was in progress some physicians attempted to secure authority from Congress to open a medical school. They entirely ignored the existence of this College, and it was in evidence that their purpose was to cripple this, the only medical college in the District of Columbia. The faculty defeated the scheme. In 1840 the College was burnt out; in 1856 it nearly went out; in 1861 it was put out. In 1856 the lectures were suspended for the season because of lack of support, the dean having reported a balance of $8.25 to show for the winter's work. In 1866 the medical school moved into its present quarters, which had been provided through the generosity of Mr. W. W. Corcoran. Prosperity has been the order of the day since then."

"The medical department of the Georgetown University," the speaker said, "if the paradox be permitted, was born with a silver spoon in its mouth, and has held on to it ever since, for its progress and success have been uninterrupted. The organization of this splendid institution is due to Drs. Noble, Young, Johnson, Eliot, Flodoardo Howard and Charles H. Liebermann, who conceived the idea and developed the plan of organization. They met in Dr. Young's office, Oct. 25, 1849, and, after deliberation, resolved to establish a medical college in this city. And they did it, and it remains, and will remain, a monument of glory to their names while medical science is taught in the District of Columbia."

The first session was held in 1851, and of the first faculty only one remains, Dr. James W. H. Lovejoy, who is still doing service as a Professor and President of the Faculty.

"The Howard University was chartered," he stated, "by act of Congress, approved March 2, 1867. The lectures in the medical department commenced Nov. 5, 1868. Two students attended the first course of lectures; scores attend more recent courses. It was the first college here to adopt the three years' course of study, and has now, with other progressive schools of medicine, adopted the four years' plan.

"The National University is the junior medical school, and was opened in 1884. It has a corps of active, ambitious professors, who are doing good work." Dr. Smith then spoke of the character of the work done by medical schools and their influence upon the advancement of medical science.

THE ASSOCIATION OF DISEASES AND MORBID PROCESSES.

BY H. A. WEST, M.D.

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Any one who has had the opportunity of observation in the clinical wards or dead-house of a general hospital, must have been struck, as I have been, with the multiform and complex pathologic conditions frequently met with; and with the further fact that even with the patient upon the postmortem table, in the hands of a skilful pathologist, with the viscera laid open to inspection, and with the aid of the microscope, it is oftentimes difficult to discover the primary condition, the connection between the different morbid processes, or to allege with certainty the cause of death.

I have thought, therefore, that it would be a subject of interest and perhaps of profit to collate some of the more important facts concerning the etiologic and functional relations of different diseases and pathologic conditions. I can not, in the short time at my disposal upon this occasion, do more than to very briefly discuss some of the more salient points. A volume could be written upon this theme without exhausting it.

Before proceeding in detail, and to illustrate the nature of the complications referred to, let me cite a few cases taken from the record of autopsies made upon patients from my wards in the John Sealy Hospital during the past few months:

Case 1.—John Miller, 53 years of age, laborer; admitted Jan. 23, 1893. Diagnosis, croupous pneumonia. Died February 9. Cause of death, acute pericarditis. Pathologic diagnosis: Croupous pneumonia in posterior part of lower lobe of right lung; passive hyperemia and brown induration of both lungs; right-sided hypertrophy of heart; chronic myocarditis; aorta atheromatous above the aortic valves; posterior coronary artery almost obliterated by atheromatous placques; the anterior coronary artery converted into a firm calcified tube for at least one inch; the aorta presented calcareous plates at different points throughout its extent; the liver was mottled from fatty infiltration and congestion; the kidneys and other organs showed no positive evidence of disease.

This case presented the history and clinical picture of an ordinary uncomplicated croupous pneumonia; the pulse, however, giving from the beginning evidence of cardiac weakness. The crisis took place about the seventh day, was followed by rapid resolution and amelioration of all of the symptoms, until about February 5 when increased dyspnea, pain, a sense of oppression over the cardiac area, increased weakness and rapidity of the pulse, and well-marked pericardial friction râles, indicated an acute pericarditis.

Reviewing this case, several interesting questions are suggested: 1, did the passive pulmonary hyperemia, resulting from a dilated and weakened right ventricle, predispose to the occurrence of pneumonia? 2, what was the connection between the chronic myocarditis and the acute pericarditis? 3, what was the relation, etiologically, between the croupous pneumonia and the pericarditis? Did the latter result from an invasion of the pericardium by the diplococcus pneumoniæ, or did it result from continuity of structure? 4, to what extent did the chronic myocarditis and the antecedent arterio-sclerosis contribute as the immediate cause of death by weakening the action of the heart? 5, does not arterio-sclerosis, with its frequent

accompanying contracted kidney, largely account for the heavy mortality in the croupous pneumonia of old age and chronic alcoholism?

Case 2.—A. Bolston, age 21, native of France; admitted Nov. 15, 1892; died Jan. 23, 1893. Clinical diagnosis, ulcerative endocarditis and gall-stones. Pathologic findings: Intestinal ulceration; gall-stones; glandular suppuration in mesentery; infarctions of spleen; hepatic cirrhosis and fatty degeneration; fatty kidneys; chronic pleurisy; edema of lungs; chronic myocarditis; splenification of bone marrow.

Here was presented a series of morbid processes as perplexing and incomprehensible as were the clinical phenomena shown during life. When the patient entered the Hospital the symptoms pointed to cholelithiasis of which there were several attacks. The skin, however, remained jaundiced showing the discoloration due to a mixture of icterus and excessive anemia. A slow pulse supervened, and an aortic diastolic murmur became audible, followed by edema of the legs and lungs. There was extreme dyspnea, and during the last few weeks there had occurred several attacks of partial hemiplegia with aphasia.

I shall not dwell upon the reasons which led me to believe that there was an ulcerative endocarditis; suffice it to say that my diagnosis was based chiefly on the development of a heart murmur, dyspnea, dropsy, irregular fever, excessive anemia and cerebral symptoms apparently due to embolism. Was this a case of typhoid fever? Was pernicious anemia the original trouble? The autopsy failed to answer these questions or explain many of the phenomena present during life. Careful section of the brain showed no causes for the hemiplegic attacks.

Case 3.—Old colored woman. At the postmortem the following lesions were found: Chronic interstitial nephritis; cardiac hypertrophy, with right-sided dilatation; induration and edema of the lungs; cirrhosis and venous engorgement of the liver; cirrhosis of the spleen; elongated cervix uteri; fibroids of uterus; pelvic peritonitis.

The pathologic sequences are here more explicable. Undoubtedly the kidney was primarily involved, the cardiac hypertrophy following as is usually the case. The other viscera, exeepting the pelvic ones, became affected in consequence of circulatory disturbances.

The citation of these cases is sufficient to warrant a discussion of my subject. The association of diseases and morbid processes may admit of the following classification under which the subject may be presented:

1. Those diseases associated as a result of a common predisposing cause, e.g., famine, filth and other unhygienic conditions.
2. Diseases arising from the localization of specific infectious agents.
3. Diseased conditions resulting from disturbances of one function interfering with the performance of another.
4. Disorders arising from impairment of function promoting extraneous causes.
5. Morbid local conditions favoring the lodgment of infectious agents.
6. Morbid general conditions acquired, which act by affording a suitable soil for the development of diseased processes.
7. Inherited constitutional predisposition to different diseases having a similar character.
8. Certain extrinsic agents productive of inflammatory and degenerative processes in different organs and tissues.
9. Toxic products originating in the body and producing similar effects and association of morbid processes as the above.
10. Uncertain associations not included above.

This classification, though incomplete, will answer the purpose of the present discussion.

In the frequent concurrence of epidemics of typhus and relapsing fevers we have an illustration of the effects of a common predisposing cause. The reduction of individual and community vitality resulting from famine, filth, destitution and overcrowding added to intemperance, overwork and depressing emotions, diminishes the resisting power of the system and largely contributes to the spread of these diseases. Although each one of these affections has its specific microörganism which is essential to its production, yet the above mentioned factors, predisposing to both, will account for mixed epidemics.

With regard to typhoid fever, such influences do not seem to exert any special predisposing effect, and hence we find this malady affecting all classes of a community, invading with impartiality the hovel of the poor and the palace of the rich.

In the occasional simultaneous prevalence of cholera and yellow fever, in the frequent association of yellow fever, dysentery and malarial fever, we have other illustrations of the influence of a common predisposing cause, and an explanation of the fact that many prominent writers forty years ago strongly contended against the specific nature of each disease and in favor of their common origin and convertibility.

Now we know that such association is dependent upon a widespread disobedience of sanitary laws. The following are instances of the association of morbid processes from the localization of infectious agents: 1, croupous pneumonia in typhoid fever; 2, croupous and catarrhal pneumonia and nephritis in typhus fever; 3, diphtheroid angina, meningitis, pleurisy and arthritis in scarlet fever; 4, croupous pneumonia in cerebro-spinal fever; 5, bronchitis and catarrhal pneumonia in measles; 6, croupous and catarrhal pneumonia in epidemic influenza; 7, orchitis in mumps; 8, catarrhal pneumonia in whooping-cough; 9, catarrhal pneumonia and nephritis in diphtheria; 10, diffuse bronchitis, lobular and croupous pneumonia and pleurisy in smallpox; 11, abscess of the liver in amœbic dysentery; 13, diffuse nephritis in yellow fever.

It is difficult in many cases to determine the cause and the relations of complications, as for example the croupous pneumonia occurring in typhoid fever. Generally, pulmonary affections, diffuse bronchitis, catarrhal and croupous pneumonia are not a direct result of the typhoid infection but are due to other causes, as hypostatic congestion, imperfect expectoration, inhalation of irritants, cardiac weakness, etc. But we do have a pneumonia taking place as a localized infection. As is clearly stated by Pepper[1] in his recent article upon typhoid fever: "Occasionally the disease (typhoid fever) begins with a chill and the symptoms of croupous pneumonia, and there may be nothing to justify the diagnosis of any other disease than this until after a week or more, when the failure of a crisis to occur, the development of rose-colored spots, and of intestinal symptoms, and the general typhoid condition of the patient, may show that the pneumonia was but an early complication of a general infectious disease. In some cases, it may re-

[1] An American Text-Book of the Theory and Practice of Medicine. Vol. I, p. 98. 1893.

main throughout impossible to determine whether we have to do with a typhoid pneumonia, i.e., with a pneumonia with typhoid symptoms, or with a true typhoid fever with initial and predominating pneumonic symptoms and localization."

The above list is illustrative only, but is sufficient to show that an important part in pathology is played by the localization of infectious agents, especially upon the lungs and kidneys, and how important it is to watch these organs in all of the acute infectious diseases.

Let us turn now to diseased conditions from disturbances of one function interfering with the performance of another. Embraced in this category are many morbid conditions whose connections are clearly defined. I can only enumerate here the most common: 1, disturbances of the circulation depending upon organic heart disease resulting in passive hyperemia, impaired function and inflammation of the viscera. Here is an explanation of the fact frequently observed, that cardiac disease is usually announced by symptoms indicative of disease of some other organ: dyspnea, cough, profuse expectoration, possibly hemoptysis, diffuse bronchitis, brown induration of the lungs, depending upon long continued pulmonary venous congestion; 2, disturbances of digestion from passive hyperemia of the stomach, intestines and liver; 3, diminished amount of urine, dark in color, concentrated, highly acid, of a high specific gravity, slightly albuminous, depending upon passive congestion of the kidneys; 4, mental disturbances, impaired intellectual activity, stupor, drowsiness from cerebral hyperemia; these varied phenomena depending upon one central cause, viz., a valvular disease of the heart. Further illustrations of the interaction of deranged function are observed in diseases of the stomach. "Absorption, movement and secretion of this organ have an interchangeable connection, and are, moreover, closely related with disordered conditions of the intestines and liver. And *vice versa*, every disorder of the latter is reflected upon the former, as for example when the stomach contents are abnormally acid, or the organ contains much undigested food. In the latter instance, the chyme will act upon the intestines as an irritant, especially upon the upper part of the duodenum, swelling the orifice of the common bile duct, as a consequence of which the flow of bile is retarded, and the portal blood contaminated with the products of an incomplete digestion slows the hepatic circulation and, on the other hand, the biliary secretion is interfered with. A similar sequence of events occurs when the liver or the intestinal tract is primarily involved. Under such circumstances, we have to deal, not only with the resistance to the expulsion of chyme from the stomach by an overloaded intestine, and the backward peristaltic wave affecting the peristalsis of the stomach, but still farther reaching are the results of venous stasis affecting the entire portal system including the stomach." Thus we have so frequently associated gastric catarrh, jaundice, intestinal catarrh, constipation and diarrhea. Various other illustrations could be given of the mutual interaction of deranged functions, but these, I think, are sufficient.

Now as to the impairment of function promotive of extraneous causes: illustrating the mechanism of such influences tending to produce serious complications, we have the frequent occurrence of diffuse bronchitis, catarrhal and croupous pneumonia from imperfect respiration, expectoration and deglutition. The conditions favorable to the imperfect performance of these functions are present to a greater or less degree in every disease characterized by that *ensemble* of symptoms known as the typhoid state. The circulation in the blood of fever toxines obtunding the sensibility of the brain, causes the patient to lie stupidly upon his back, with feeble inspiratory efforts and imperfect expectoration; to inhale inflammatory agents from the mouth and throat; and to swallow the wrong way irritants of various kinds, particles of food, foul and decomposing secretions, etc. And when to these factors we add an impaired pulmonary circulation from a weakened heart, and hypostatic congestion from a continuous dorsal decubitus, is it any wonder that in typhus, typhoid fever, remittent, cerebro-spinal fever, smallpox, and other diseases of like character, we have serious pulmonary complications taking place as a natural and, in many instances, unavoidable sequence?

In regard to morbid local conditions favoring lodgment of infectious agents, such conditions are chiefly inflammatory and affect mainly mucous membranes. These catarrhal inflammations are of special interest from the fact that by timely curative and preventive measures the onset of a much more serious malady may often be obviated. The association of tuberculous and catarrhal processes of the air passages was for a long time incorrectly interpreted; it was thought that such diseases as measles and whooping-cough were converted into tuberculous. We now know that the inflammatory conditions of the mucous membranes of the air passages, occurring in these two infectious disorders as well as in laryngitis, pharyngitis, bronchitis, tonsillitis, catarrhal and croupous pneumonia, act as predisposing causes of tuberculosis by affording a suitable place for the lodgment and development of the tubercle bacillus. In this way gastro-intestinal catarrh favors the action of the specific causes of typhoid fever, cholera and dysentery. In a similar manner catarrhal processes about the throat, tonsillitis, laryngitis and pharyngitis, favor the likelihood of diphtheritic infection. Such instances could be multiplied, but let these suffice.

Concerning morbid general conditions acting by reducing the resisting power and affording a suitable soil, we have an impairment of vitality resulting from some severe acute diseases such as pneumonia, epidemic influenza, typhoid fever, and also from various unhygienic influences, insufficient food, overcrowding, uncleanliness, alcoholism. Individuals who have been subjected to such influences, easily become the victims of tuberculosis, simply because a suitable soil has been provided for the lodgment and development of the infectious agent.

In regard to inherited constitutional predisposition to different diseases having a similar character, we have an illustration of how an inherited and constitutional weakness may predispose to the association of diverse disorders as, for example, in connection with syphilitic, scrofulous and tubercular processes. Thus a child with inherited syphilis becomes from the resulting cachexia, as well as from the local inflammatory conditions, a favorable subject for the development of tuberculosis. Again, a child, the subject of scrofula or tubercular adenitis, is liable to develop an intestinal, meningeal, or pulmonary tuberculosis. We have a similar illustration shown in the children of gouty parents, who instead of inheriting gout may

have an inherent predisposition to lithemia, weak digestive powers, and possibly diabetes. In certain nervous disorders we observe similar connections. Instead of inheriting the particular nervous malady from which his parent suffered, the child inherits a neuropathic constitution; and hence we notice the association of insanity, epilepsy, hysteria, migraine, alcoholism and the like.

As to extrinsic agents productive of inflammatory and degenerative processes in different organs and tissues, we have certain chemico-toxic and infectious agents which, though differing entirely in chemic constitution, produce similar pathologic results, acting either in the process of elimination on certain organs, or having an affinity for certain tissues, in which case they produce their effects through the circulation. Familiar examples of such agents are lead, alcohol and the syphilitic poison. Thus we find these three lethal substances playing an important rôle in the etiology of a large class of chronic inflammatory and degenerative processes, as for example chronic endocarditis, arterio-sclerosis, chronic parenchymatous nephritis, contracted kidney, cirrhosis of the liver, gout, multiple neuritis and chronic system degenerations, and inflammations of the spinal cord such as chronic myelitis and locomotor ataxia. From the common origin of such diseases we often see them associated, as arterio-sclerosis with chronic endocarditis and interstitial nephritis, contracted kidney with cirrhosis of the liver, gout with interstitial nephritis, cirrhosis of the liver with multiple neuritis, valvular heart disease with locomotor ataxia. In many instances several of these etiologic factors unite to produce a given disease, and it is often difficult to assign to each its proportionate share.

There are certain irritative substances produced within the body which act in a similar way, and produce morbid changes of like character as those mentioned in the last clause. We have, for example, frequently associated a chronic endocarditis and Bright's disease, or contracted kidney with cirrhosis of the liver, etc., where we can exclude any of the extrinsic agents above mentioned, and must assume the presence in the blood of some irritant which i n the process of excretion or otherwise will produce inflammatory and degenerative changes. Our knowledge of the ultimate phases of digestion and assimilation is as yet too imperfect for us to say with certainty what is the chemic constitution of such agents in all cases; but of this fact we are assured, that is, that some derangement in the metabolism of nutrition, depending upon an excess of certain articles of food, especially the albuminoids, plays an important rôle in the etiology and association of diseases such as gout, diabetes mellitus, interstitial and chronic parenchymatous nephritis, chronic endocarditis and cirrhosis of the liver.

There are, again, certain diseases frequently found to coexist, not explicable in the before mentioned categories. I refer especially to cardiac and kidney disease. The association of heart and kidney disorders has been a matter of common observation for a long time. It did not escape the notice of Richard Bright who commented upon its causes more than half a century ago. The connection between morbid conditions of these two organs is manifest in many instances; for example, where the heart is primarily affected, and we have then the kidney of passive congestion, or where we have embolic processes in the kidney originating from an endocarditis, or further yet, when we have disease of both organs resulting from a common cause as arterio-sclerosis; where a hypertrophy of the left ventricle occurs as a sequence of obstruction offered by diseased arterial walls, and, still further, where the kidneys suffer from impaired nutrition, affecting primarily the secreting cells. The pathologic sequences in such cases are readily understood, but what is the explanation of the large number of cases where the kidneys are the organs primarily involved and where there is no arterio-capillary fibrosis?

I can not here enter into details concerning the various theories which have been advanced to account for this connection; the truth is found probably in no exclusive theory, but rather in a combination of them all. Thus we can conceive how an altered constitution of the blood depending not only upon an accumulation in it of excrementitious products, but from the loss of albumen also, would offer an obstruction to the circulation and be followed by a compensatory hypertrophy. And we can understand that there is an element of truth in Traube's mechanical theory; for in many cases in consequence of deficient elimination of water there is an overfullness of the vascular system which might occasion a hypertrophy. The two would not exclude the theory offered by Dr. Tyson, viz., that the process is compensating and another instance of nature's method of supplying the deficiencies of one function by increased action of another. In this case a certain number of the secreting cells of the kidney having been destroyed, the heart, by increased action and consequent hypertrophy, sends the blood coursing through the kidneys under stronger pressure with the effect of increasing the amount of urine, and thus compensating for the loss of renal tissue.

In conclusion, let me mention briefly the principal facts relating to the connection between arterio-sclerosis, cardiac and kidney disease with cerebral hemorrhage and embolism. In almost every instance hemorrhage of the brain is due to the rupture of miliary aneurisms, and later investigations go to show that this disease of the vessel wall is identical with arterio-sclerosis. The etiologic factors also predisposing to cerebral hemorrhage are those which are contributory to atheromatous degeneration of the arterial walls. We have several other factors explaining the frequent association of cardiac and renal disease with rupture of blood vessels in the brain, as, for example, passive congestion from valvular disturbances of the circulation and weakened heart action impairing nutrition of the arterial walls, to which must be added the increased liability to rupture from strain due to a general arterial tension, the latter being an almost invariable accompaniment of interstitial nephritis and the hypertrophied heart connected with it. Hence we find hemorrhages of the brain productive of either mild or severe hemiplegic attacks or directly causing death in many cases of contracted kidney.

The *rationale* of cerebral embolism and thrombosis in connection with heart disease admits of easy explanation. We have frequently occurring thrombotic deposits upon the mitral or aortic valves, from chronic or ulcerative endocarditis, which are often washed off and lodge as emboli in one of the cerebral arteries; thrombosis is favored also by arterio-sclerosis through the roughening of the inner coat, inelasticity and occasional narrowing of the arteries. We may thus

have clots forming in the aorta or arteries at the base of the brain from whence they are carried into the smaller arteries as emboli.

WHY GENERAL PRACTITIONERS SEND CASES TO THE HOSPITAL.

BY S. S. TOWLER, M.D.
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I have adopted the above title simply because I could find no other for this brief paper, and yet it does not express all I want to get at. In an excellent article in the JOURNAL of January 27, Dr. Keister says that, "in nine cases out of ten, it is sheer stinginess on the part of the physician, that he is not properly equipped with instruments. This point, and one other, are the only exceptions—that I see—to take to that practical paper. The "one other" is this: "Conservative surgery is yielding better results every day, and I believe the time is not far distant, when women's ovaries will be let as severely alone by the abdominal surgeon as the Holy Bible." All I want to suggest on that point is that perhaps if "the abdominal surgeon did *not* let the Holy Bible," so "*severely alone*," he might operate less on "the women's ovaries." However, there are abdominal surgeons, and surgeons abominable. Stinginess will, to a great extent, cover a class of doctors without instruments, but there is a large number who will not purchase a full office outfit for the same reasons that they and others send cases to the city, or call a specialist.

There are first, the class of practitioners who know that they have not the nerve or skill to be good operators, and yet many of them are *good* physicians. These men send their patients, not because they know so little, but because they have arrived at that point where they know *what* they know. A man may be a most excellent physician and yet a very poor surgeon, and the physician who knows *that*, is to be commended for sending elsewhere. He is away ahead of the fellow who, thinking he knows it all, blunders away at all hazards.

But there is another reason why special cases go to the hospitals and experts: That is, because the general practitioner, especially in the country, has a very different environment from that of the man in the city. Every one knows the successes and failures—so to put it—of the country doctor, and unless he has attained an age and experience that protects him, his fatal cases are fatal to him.

To illustrate: In 1868 I had my first thigh amputation. About the same time Dr. Joseph Pancoast performed exactly the same operation on a wealthy lumberman a few miles away. Dr. Pancoast came and went the same day, and received for his work, $1,000. I got the county fee bill of $125, and had to take care of my patient until well. Some four weeks after this, Prof. Pancoast was up in my section on non-professional business. Meeting me, he said: "How is your patient?" "All right," I replied; "come and see him." Arriving at the house he looked the stump over, and said very kindly: "Good job; good as mine; it's all right." "Not exactly, Professor," I replied; "not exactly. It looks to me all wrong. Now here am I, a young fellow having all the no good, no pay patients shoved on him, and glad to get cash enough to pay my salt. When I do get a good case I have to take the county fee bill; you, said to be wealthy, get $1,000 for less work. In the equity of the thing I ought to have the thousand, and you the one hundred and twenty-five." He laughed for a moment, and then with a kindly sympathy and grave face, as he put his arm over my shoulder, said: "That is not the worst of it, my boy. I could have killed my patient, and it would have been all right; your patient might have died under the best treatment in your hands, and it would have killed you." That was years ago, and while I have safely passed that sort of fear, yet there are a great many practitioners subject to that same risk.

The country (and I include in this, town and country practice outside of larger places) surgeon may know that he can do an operation, and do it well. But no matter how well done, so far as skill is concerned, if the patient dies in the operation it takes years to live the effect down. If a patient goes to a hospital, with a fatal result, or dies in the hands of a specialist, it is, "Divine Providence that removed," and *not* "the great hospital doctors we had when Ann died."

The bickering jealousy in the profession is largely responsible for this. All the colleges in the world will not take meanness out of a man if it is born in him, and in the recent years when M.D.'s were made in "job lots," the profession got its share of the mean men in the world. A country doctor's patient dies in the operation. The next country doctor says: "I am sorry, very sorry, but why didn't the fool send her to a hospital? He never ought to have attempted such a thing." The next country doctor says: "I was afraid of that; I almost felt certain he could not carry that case through. He is too risky, too risky." Perhaps one out of the lot comes out like a man, saying: "He was all right. That same result would have happened any way, or in any one's hands. No one could foresee it." But mark you, every old woman in "the country-side," takes up the woeful tale, and spreads it around until harrowing stories of how "Dr. Smith grubbed in her belly with his hands and tore all her insides out," are told at every fireside. Poor Smith, who was perhaps the brightest doctor in that whole section, comes to be looked upon as a "butcher." Next time Smith gets a chance he sends the patient to the city, and goes along himself to take a hand in the business. Result: "Ah! Why didn't he do that with poor Mrs. Jones that he butchered to death?" Then if Mrs. Brown comes back cured, or partially relieved for the time being, she becomes at once a sort of heroine. Every woman in the town or country for miles, who has either a real or fancied pelvic trouble, and whose husband can raise the "ducats," wants to follow suit, and the family doctor must help the scheme, or take the consequences. Away goes the procession, and the general practitioner gets his pay in the taffy that the specialist sends to him through the patient.

Again, the country surgeon has constantly before him the possibility of a malpractice suit. Even in the line of general surgery this is a continual menace. A badly fractured leg or mangled arm, no matter how skilfully treated may get him into untold trouble. Much more is an unfortunate result of an operation of his own proposing, in special surgery, liable to do so. Furthermore, the more charity in his soul, and the poorer the patient, the more likely he is to be persecuted as well as prosecuted.

Again, the profession itself is largely to blame for this. Dr. B. sees a fellow with a limping leg. He squeezes it a time or two, and says, in a tone of righteous indignation and assumed great knowledge: "Who set that leg? The man who did that job ought to be prosecuted." With no thought or care of how good a job Dr. A. had made of a very bad leg, he spits out his professional venom. Away goes the fellow limping worse than ever—indeed, now he can hardly get along at all, and has a little groan for every step—and sees a lawyer. Result: "Certainly, sue Dr. A. He has intlicted great damage on you. Ten thousand dollars is what we want from him." Sue he does. Dr. A. comes out triumphant, but it has cost him hundreds of dollars, and weeks of time for himself, and lost days for his medical friends, to gain his victory. Result again: In that section the most risky cases are sent to the hospital. That is no overdrawn picture. In this and adjoining counties the best medical men in them—and I use the expression advisedly, have been subject to just that sort of treatment. In one case the claim was for damages for a ruptured perineum. At the trial the evidence showed that the very doctor who urged the suit had used the forceps in delivery, and that the defendant had had no opportunity to rupture the patient at all. In another case the prosecuted doctors had gone so far in their interest in the case, as to procure without cost, the services of the late and great surgeon, Dr. Hays Agnew, for their patient, but that did not save them from suit, though they won the case before the jury.

Another case after weary months was won by the defendant at a cost of over three hundred dollars. Another doctor, not very far from me, had a verdict rendered against him which was so unjust that the court granted a new trial. The next jury decided against the doctor, and again a new trial was granted. A third jury and a third new trial followed, and then the case was compromised.

In another case the plaintiff demanded $20,000. Inside of time of trial he offered to settle for $35, and on being told he could not have 35 cents, proceeded to postpone the case from court to court, until the defendant got hot and put the case on the trial list himself. The plaintiff never appeared. The defendant got a non-suit and full allowance of costs. The plaintiff, as usual, was not worth a copper, and the defendant was at a great loss. In every one of these cases the instigator was one of the profession. In addition to this form of affliction, the country surgeon is aware of the unfortunate fact that in his community one fatal result in surgery outweighs a dozen successful cases. The good cases are soon forgotten; the bad ones never.

Again, the country physician is at a disadvantage in special cases, especially those that require *rest*. If his patient is fairly well off, and has good common sense, he will succeed in having his orders carried out. But if he says to a patient, with a large family, and whose "hired girl" has skipped out without notice: "Madame, one thing you must have, and that is absolute rest"—the patient looks at him despairingly, and says: "Doctor, how can I have that with my family cares?" Result: She takes lots of medicine, washes, douches, battery treatment and so on, and gets no better. In despair, the husband raises some cash and sends her to a hospital where she gets the rest she so much needed—and perhaps what she got besides she didn't need. As in the surgery case, she sets the pace for other women and away they go, one after the other. All these elements combine to put the country doctor at a disadvantage, and to lessen his desire to treat special cases.

It is admitted, certainly, that this state of affairs is very largely wrong. More special cases ought to be treated in the town and country than are treated there now. The only remedy I can see is this: 1, the country doctor ought to have his trained nurses, the same as the city man; 2, County, State and National societies ought to be made so strong and so well organized as to form a practical defensive and—so far as the caviling, sneaking, backbiting doctors are concerned—offensive alliance, that will not only afford ample protection to the honest practitioner, but silence the croakers and educate the public. These societies are of more use to the general practitioner than any one else, and are the best means of elevating the tone and dignity of the profession. Besides this, one meets through them some of the best fellows in the world. I have never known the "weakest vessel" present at such meetings, to be rudely repelled by the "biggest guns," but kind and courteous consideration is the rule.

The last points are mentioned to show the value of organization, and not to encourage needless bother of busy men, because they are good-hearted. Dickens said once, that Americans when not clear as to what should be done would hold a meeting and "*resolute*." It is more to the purpose to build up the County, State and National organizations. The highest possible motives sanction it, and even the rather mean motive of "policy," if a man has no higher, encourages it. So, having come to lastly, in my effort to give a reason why hospitals are never short of "clinical material," and to suggest a remedy for the troubles of the country brethren, I pronounce my benediction on the JOURNAL, and go to bed.

MY EXPERIENCES AS A SPECIALIST.—A DREAM.

BY J. L. TRACY, M.D.
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Psychologists have never satisfactorily explained the process by which we unconsciously and yet seemingly voluntarily permit ourselves to give audience to the acts and sayings of the peoples of dreamland. The ego of our dream has never been accounted for either. His relationship to ourselves, however, seems as we recall him, to be in many instances a very close one. He is like us and still is decidedly unlike us.

He appears upon the mystical stage which borders hard upon life's pathway, acts his part and retires behind the scenes. We awake to think, study, wonder and theorize concerning him, and we tire, cerebral anemia presumably, obtains, we nod in our chair and find him bowing to us. Evidently he follows us when we are awake, and we follow him when we are asleep. We call ourself the substance, him the shadow. This ego, our other self, takes possession of our quiescent physical body, divests it of tangibility and sensation, and with this etherialized body starts off, without effort, to travel long distances, and without a feeling of shame parades it naked through the

streets. He makes the body live consecutive days, weeks and months, without the expenditure of what we call time, and with no thought of incongruity places it in a saddle, to ride its best friend for a horse. The different stages in the dissolution of self are noted with interested indifference, our other self even in some instances watching his own burial, expecting and experiencing his own resurrection, and then going on to live lengthy periods in the spirit world. Psychologists have never been able to explain these things to us, because any one else knows as much about dreams as the psychologist does.

Psychologists doubtless dream according to psychologic law, but all dreamists do not dream that way. I do not. A biographer of Napoleon Bonaparte says of him, that he was a medley of contradictions, an incomprehensible self. My dream self in those respects, is much like Napoleon Bonaparte. If a man were responsible for what he dreamed, a dream like one of mine would load him up with responsibility pretty fast, and if any reader of this Journal ever attempts to write a dream, he will feel the necessity of prefacing the narration of his experience while in dreamland, with such a statement of facts regarding dreams in general, as will shift all responsibility for the dream-thoughts upon his incomprehensible self.

The thought of irresponsibility for having dreamed a dream, is to me a great relief. My dream-self never pays any attention to me, and never talks about me to my back, as I do about him, so that I do not know what he thinks of my way of doing things. Judging though by the friends that I seem to make while in dreamland, my dream actions and sayings are quite as much in harmony with the opinions of the inhabitants of dreamland, as are my waking thoughts and practices with the things which are more unquestionably mundane.

I would not tire you with what the French people call a résumé upon the subject of dreams, yet, somehow, it seems to me that I will feel freer to relate the incidents of my dream, when I have called your attention afresh to some of the freaks which dreams may play; but, I feel safe even now, to go so far as to assert that I dreamed that I was a specialist.

I would have you bear in mind that in my dreams, incoherency, grotesqueness, improbability, inconsistency and absurdity, are always to a lesser or greater degree innate. To my dream-self, however, there is no thought of absurdity, but, on the contrary there is a logical working out of the laws of cause and effect, and desired results appear to be attained by the use of the phantasmal means at hand. Dreams as ordinarily dreamed, have been classified as air-castles, novel-reading, hair-invigorators, theosophy and plain dreams. This classification shows the evasiveness of dreams. At first sight I thought it an exceedingly unscientific one, but after a studious effort of some length to improve upon it, there came to me the old adage, that it is easier to discover a fault than it is to correct it, and I decided to let the classification alone.

Notwithstanding alienists teach that the longest dream is scarcely longer than a few minutes in duration, there is a good deal of time wasted in dreaming. A dream, as I have said, annihilates time, distance, and the material. It ignores our best waking thoughts, and puts two bodies into the same space at the same time. A dream mocks at reverence, and makes us reverence mockery. We see as regular order, retrospection preceding perspection. A dream laughs at a difficulty, recognizes no such thing as a problem, but on the other hand presents you with the solution which balances without the shadow of a doubt. My dreams to my dream-self are realities. A dream must have its conception in some wakeful thought. For instance I could never have dreamed that I studied and worried over the selection of a specialty, if I had never heard of such a field of practice, any more than one who had never heard of the conflict, could have dreamed of the battle of Waterloo. Sometimes in dreams, the hobby of the dreamer comes to the surface, and in this instance, I recollect that I examined each specialty which presented itself to me, from the point of view of its probable money value to me. How I came to think of reflexes I do not now recall. I do remember distinctly though, that I threw out of consideration everything which did not have within it a good reflex center.

I dreamed that I finally selected habitual constipation as my specialty. The very general prevalence of the affliction, and the possible reflexes which could be made to radiate from it, struck me as being very valuable features. I examined it carefully, in my dreamy sort of a way, and could scarcely think of a disease which could not be accounted for as a reflex of habitual constipation. I was known in my town as the habitual constipationist.

To get my specialty before the public, I thought out what seemed to me then to be an original idea, of searching the records of the past for evidences of its earliest existence. The result of my investigations was a collection of curious instances wherein it seemed to me that habitual constipation had been, in some incomprehensible manner, overlooked as being the exciting factor in the arena of life. I issued reprints of my article, and in my dream it was not long until I had an extensive practice among paying patients. Since my dream, I have recalled the fact that years ago, when I was a medical student, I had visions of such a patronage. If I had a free clinic I can not recall it. Memory is one of the most treacherous and untrustworthy things upon which we place reliance, and so it may be that during my dream my mind recalled impressions which earnest efforts afterwards failed to bring to memory. At any rate, to the best of my recollection I had never, until in my dream, associated the instances which came to me then, with habitual constipation. The symptoms of my visionary patients were always the verbal expressions of themselves, or of others. Why that was so, is just as unanswerable as some other mysterious things connected with dreams.

The cases which I particularly recall, or which I can recall with sufficient distinctness to enable me to present to you, show another peculiarity of dream thought, which is that a trivial incident of early childhood may seem to be of the same importance as are questions which affect the welfare of a nation. Lack of detail is an ever present characteristic of my dreams, and in this dream how I got to my patients, or how I was sent for are shadowy facts which were left out of the dreamy make-up. I have numbered my cases, but whether in the order in which I dreamed them, I do not know. I never dream consecutively.

Case 1.—Mary, aged 7. History negative. Blonde. Curly hair; eyes blue, fairly nourished, temperature, pulse and respiration normal. I had been sent for by her teacher. I

found her at school, in a little schoolhouse at a country cross roads. I noticed a lamb with a ribbon around its neck, nibbling grass in the schoolhouse yard, as I went in. I found the teacher surrounded by the pupils, who were crying, and asking her: "What makes the lamb love Mary so?" Mary sat in the corner by herself, apparently studying her lesson. I dreamed that I thought as I looked at her, that no one but a specialist would think for a moment that there was any serious thing the matter with Mary, but when I left my office to go to see the patient, I had very little doubt as to what condition I would find her in. In a dream diagnosis, I think that a preconceived opinion like that, very largely shapes one's conclusions. I diagnosed habitual constipation, very much to the teacher's surprise. The steps to my diagnosis were, tender age of patient, great susceptibility to impressions, and long companionship of playmate. A mimetic, habitual constipation. I advised as the only possible relief, an operation, which was declined, and the patient passed from my observation.

Case 2.—Male, aged 40; married; a citizen of Indiana. Tall and slim; long bony arms; heavy whiskers and eyebrows; hair long, and combed straight back over his ears. Teeth discolored by tobacco, which he continuously chewed. Extreme nervous temperament. Heart and lungs were not examined; cerebral symptoms were not looked for. His landlady said that when he first came to Washington he had a ravenous appetite; lately though, he had eaten less and drank more. He was having one of his attacks when I came into the room. The first thing which I heard him say, was: "He who doubts he is a dastard; he who dallies is damned."

The puzzled expression upon the faces of those around him plainly showed the want of a satisfactory diagnosis. To me in the dream, his condition seemed to perfectly illustrate the baneful results which follow lack of confidence, and the putting off from time to time, attention to those calls, whose strict observance is the price of physical health.

Another symptom which I noted, was an inflated ambition to be known as a reformer. At the time I saw him he was presenting a bill, entitled, "An Act Regulating the Formation of Funeral Processions, Labor Day Parades, and all Street Displays Whatsoever." I do not remember the detailed workings of the proposed Act, and if I could recall them they would hardly add anything to the importance of the symptom. I do remember, however, that the change or reform which the Act proposed, was to have the two-wheeled carts, one-horse rigs, and the poorer turnouts placed at the head of the procession; the silver-plated harness, bangles, and liveried footmen to bring up the rear. A few minutes spent with the physicians in attendance, was sufficient to convince them that it was a case of habitual constipation. An operation was decided upon, and the next morning set for making it, but whether it was done, and if done whether I regarded the operation as a successful one or not, I can not recollect.

Cases 3 and 4.—J. and G., boys aged 9, twins. Parents dead; cause of death not known. Scarcely of average height, illy nourished, and because of their remarkable resemblance J's hair was allowed to remain long while G's was clipped. Just before I arrived, they had both

"Gone up the hill to draw a pail of water."

I was told that they usually did so about four times a day. Owing to the commotion among the grief-stricken friends, I could not learn the exact size of the pail. There appeared though to be no doubt but that there had been quite marked polyuria. I remember calling the attention of the physician to the fact that one pail to two boys, meant one-half pail to one boy, and that the amount was not as he had calculated, four pails each, a day. He had been content with finding the diabetes, and had so diagnosed the cases. No postmortem examination was allowed, but I was convinced, and so expressed myself, that the diabetes was reflexly the result of irritation caused by habitual constipation.

Case 5.—Male, aged 46. United States. Does not know anything about his parents. Brothers and sisters, if living are, he says, younger than he is. Weight 230 pounds; red face; eyes half closed. Temperature 101½; respiration a little hurried. There is a good deal of excitement—though singularly enough, the excitement seems to be mixed with a considerable degree of obtuseness. Appetite for food, nil; mouth dry; breath emits a very strong odor. I found him in spite of the well-meant solicitations of his friends leaning against his desk, and demanding that the presiding officer tell him "where he was at." The real underlying cause of the mental condition of this patient was so obscure as to have greatly perplexed the physicians who had been in attendance.

As this condition of clouded excitement passed off, he would, so to speak, become poetically melancholy. There were two stanzas which seemed to occupy his mind most of the time. One of these was,

"The mill will never grind again
With water that has passed."

The other, very much like it in sentiment, was,

"Full many a flower will bloom and blush unseen,
And waste its fragrance on the desert air."

One of his physicians who was a very matter-of-fact kind of a man, had tried to arouse him from his melancholy thoughts by telling him that it would be a new kind of a desert which had flowers in it, and the patient discharged the entire corps of physicians on the spot.

I very soon became convinced that it was a case of habitual constipation. In all of my cases I remember that I always advised an operation, but I can not recollect the nature of the operation. How I came to associate an operation with habitual constipation I can not conceive and still whenever I could get consent to operate I remember that I always made an operation of some kind, and did remove something. This case was under observation for a year or so, and his most intimate friends regarded him as cured. I felt safer though in recording the case as improved, which I did.

In one of my dreams a century or two makes a very little difference. The past, present and future, all seem to be of the same tense. One of my Ireland dreams is just as sensible, and just as systematically gotten up, as is one that was located in Ohio. When I dream a foreign dream, I do not always imagine myself to be in a foreign country. I have the peculiar faculty of Europeanizing American scenery so as to bring it into harmony with the citizen of any other country whom I have happened to run across. Sometimes, and the next case is an instance of that kind, I do not remember anything regarding the residence of the principal actors in my dream.

Case 6.—H., male, aged 21. Height five feet nine inches. Weight 170 pounds. Black hair, black mustache, black eyes, dark complexion. Body muscular. Father died a few months before of some external trouble. Only sick an hour. Mother living, of fickle disposition, if not positively depraved. I did not arrive until an hour after his death. Not much could be learned of his childhood, but at his maturity he was of more than average intelligence. He was, too, impulsive and inclined to be sentimental, and so when a year or so previous to his death those about him noticed that he was in love with a girl of the neighborhood, they were not surprised to find that he was in love with all his might. I had been asked to see him on account of the development of symptoms which threatened insanity. I was told that he had never located his trouble in any particular part of the body, but that his symptoms had been of that vague, undefinable character, such as is common to nervous trouble of reflex origin. To friends who had tried to comfort and encourage him, he had complainingly asked:

"Who would these fardels bear,
To groan and sweat under a weary load?"

He expressed himself as "tired of the load" and said that to be rid of it

"Was a consummation devoutly to be desired."

The dominating theme of his erratic, though purposeful delineation of his trouble, was contained in the introductory phrase, "To be or not to be, that is the question."

I dreamed that this case was an exceedingly difficult one for diagnosis to the physicians in charge of it. I went at

the case with the thought in my mind that it was probably a case of habitual constipation. I recalled the sudden death of his father, the estrangement from him of his mother's affections which followed close upon her somewhat hasty acceptance of new bed and board, his love affairs, in which had been currents which had not run smoothly, and the condition of unrest which pervaded society generally. These were all of a disquieting, dispiriting tendency, exactly such circumstances as are likely to produce irregularity in the habits of life. After viewing the probable effect upon the patient of all these forces, I had little difficulty in convincing the physician that the trouble had been habitual constipation.

I considered myself very fortunate that I was permitted to make an autopsy, and was much pleased when the examination confirmed the diagnosis. I secured what I looked upon at the time as a very beautiful specimen, but just what the part which I brought away was, I do not recollect. I dreamed that I put the case down as one which illustrated the foolishness, if not indeed, the criminality of trusting in such cases to medication.

Case 7.—Male, aged 50, United States. Medium height; weight 250 pounds. Dark hair, mustache and eyes. Florid complexion, body well developed, and inclined to corpulency. Large head and larger neck. Temperature 97; pulse 76, respiration 22. Appetite good, digestion perfect, sleeps well at night. Marriage relations not inquired into. Family history excellent. His physician noticed nothing in particular wrong with him, until one day the patient began to insist that he was "confronted with a condition, and not a theory." Of itself, this symptom did not seem to the physician alarming, but there was such a positiveness in his manner of describing his trouble, as to cause some uneasiness to the physician, and so I was sent for.

I dreamed that I found the patient seated in a fishing boat, waiting for his helper to adjust a new bait. I thought that there was something so peculiar about his malady as to have attracted wide attention. I dreamed that there were many conflicting opinions among physicians as to the nature of the trouble, and, in consequence, many different plans of treatment had been proposed and tried, but without benefit. I dreamed that I studied and tried to analyze a great mass of symptoms without reaching a definite conclusion. I do not now see why it should have been so, but in my dream thoughts the word, "confront" seemed to be an insuperable obstacle to making the diagnosis of habitual constipation. His persistent statement that a condition confronted him, was in my way for a long time, and I had nearly despaired of making the diagnosis, when I chanced to stumble upon the symptoms of "innocuous desuetude." This symptom, to my mind, cleared up the diagnosis at once, in which diagnosis the physicians in attendance readily concurred. They joined me in advising an operation, to which the patient consented. While the preparations for the operation were being made, the patient related to me an incident which happened a few days before:

He said that some kind of a parade or celebration had taken place in some inland towns and, as part of the display many balloons, profusely decorated with small flags had been sent up. He said that in floating off, the balloons would collapse, the little flags would become disengaged from the balloons, and dart to the ground. He said that he had been lazily watching these flags fall for some time, when he happened to fix his eye upon one which was about to strike the ground near him. The flags fell staff downward, and as this one struck the earth he saw it sever from the body the tail of the common swift or newt, a little animal of the lizard group, the *spelerpes longicauda*. I dreamed that he said the staff of the flag was sharpened flatwise, which made it cut more smoothly than it otherwise would have done. The animal ran off and hid itself among the rocks, but the tail lay where it fell. I dreamed that my patient said that as he sat watching the tail wiggle about, as such tails will, that he could but think of the accident to the lizard as one of the purest chance occurrences which had ever come under his notice. Hours before, in a distant city the little flag had borne its humble part in the display, had floated away through space, had fallen to the ground and injured the little *spelerpes longicauda*. To physicians the most interesting part of the story is in what followed after the tail had been severed from the body. He said that while he was musing upon the accident, he noticed the animal emerge from its hiding place, slyly steal up to where the tail was, grasp it under one of its fore legs, and carry it to the water's edge. The lizard then carefully washed the wounded end of the tail, and the stump end of the tail upon its own body; this done it laid the tail upon a stone, and, backing up to it, laid the wounded ends carefully in coaptation. After remaining perfectly quiet for a few minutes, the lizard slowly moved away to its hiding place again, taking the tail which had adhered to the stump, with it. My patient told me that he saw the lizard the next day, and there was only a dimly perceptible scar at the point where the amputation had taken place.

I was a little more incredulous about some parts of the story than I cared to express to my patient, and so made an excuse for consulting his library, which I dreamed he had with him in the boat, and I found in an encyclopedia mention made of the alleged recuperative powers of this animal under like circumstances. The manner in which the accident to the lizard had happened, I had not doubted.

I now learned that my patient had been, a year or so previously, operated upon by an habitual constipation specialist, but as there was a difference of opinion among those who witnessed the operation as to whether all of the parts had been removed, I decided to make an exploratory operation and clear up the uncertainty. If nothing to remove were found, the operation would stop with the exploration.

From this on, I only remember that I felt satisfied with the operation, and considered it a success. I recall also that I thought I kept watch of my patient for a number of years, and as no positive symptoms of the trouble showed themselves up to that time, I recorded the case as recovered.

APPENDICITIS WITH ORIGINAL REPORT, HISTORIES AND ANALYSIS OF ONE HUNDRED AND FORTY-ONE LAPAROTOMIES FOR THAT DISEASE UNDER PERSONAL OBSERVATION.

Read before the Pan-American Medical Congress.

BY J. B. MURPHY, M.D.

CHICAGO.

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It might seem necessary to offer an apology for presenting a subject that has been so thoroughly discussed at medical associations and so voluminously considered in medical literature in the past four years. But I will offer none for presenting this subject, as many of its important relations to the physician and patient are still moot questions. There is probably no subject in abdominal surgery on which the profession is so divided and on which such opposite views are entertained. Gynecologists are fairly well agreed on what the procedure should be in cases of pyosalpinx, ovarian cysts, and even now on fibroid tumors, but at every medical meeting in which the subject of appendicitis is discussed we find the physicians almost equally divided for and against operative procedure. The question presents itself, Why are they thus divided? The answer is, They are divided because they have different views, or better, because they are not informed on: 1, the pathologic conditions that exist; 2, on the probable course or clinical history of the patients suffering from these pathologic conditions unaided by the surgeon; 3, on the comparative results to the patient by the aided and unaided methods. I will not consider

the anatomy of the appendix, nor treat of the various positions in which it may be found. The excellent paper by Dr. Joseph D. Bryant fully elucidates that subject.

Pathologic Conditions.—Let us first consider the pathologic conditions that exist. The inflammatory or infective lesions of the appendix for a scientific discussion of their relations to the comfort and life of the patient should be divided into the following classes, because each class has advantages and disadvantages peculiar to itself, and in considering the effects of these lesions upon the patient a fair idea of the percentages can not be obtained unless the classification is carefully carried out, so that the degree of jeopardy may be uniform. The lesions of the appendix and their effects on the surrounding organs and peritoneum should be divided into:

1. Simple catarrhal appendicitis.
2. Ulceration of the mucous membrane without perforation; *a*, pressure atrophy with infection; *b*, simple ulceration with purulent accumulation; *c*, typhoid ulcer; and *d*, tubercular ulcer.
3. Ulceration of the mucous membrane or ulceration of the appendix with perforation.
4. Gangrene of mucous membrane of appendix; *a*, local; *b*, general.
5. Gangrene of appendix complete; *a*, with perforation; *b*, without perforation.
6. Infection of peritoneal cavity; *a*, *without* perforation local and general; *b*, with perforation local and general.
7. Peritonitis; *a*, local peritonitis without limiting adhesion; *b*, circumscribed abscess; *c*, diffuse general.

The scope of this paper does not include the neoplasms, traumatisms, nor herniæ of the appendix. I include in this paper the cases occurring in the practice of my partners, Drs. E. W. Lee, F. S. Hartman, and H. R. Wittwer, as the cases were all treated on the same basis, and had equal chances of recovery. Though the actual operations were performed by

Dr. E. W. Lee	20 cases with	5 deaths.
Dr. H. R. Wittwer	4 cases with	0 death.
Dr. F. S. Hartman	9 cases with	1 death.
Dr. J. B. Murphy	108 cases with	10 deaths.
Total.	141	16

Mortality with my own cases, 9.2 per cent.

Etiology.—The pathologic lesions above mentioned are produced by certain causes which we will classify as:

1. Simple pus-infection, producing the catarrhal variety.
2. Extensive infection of wall by the amœba coli or pyogenic microphytes, producing gangrene of a greater or lesser portion of the appendix.
3. Pressure atrophy with infection of appendix; *a*, fecal concrement; *b*, foreign body.
4. Specific infections, as typhoid, tubercular, etc.
5. Retention accumulations; *a*, from cicatricial contraction; *b*, from occlusion with enterolith or foreign body.

Perforations of the appendix from various causes, I have found in the report of 465 autopsies of this disease occurred 324 times; of the appendices removed by us, there were perforations 39 times, and 58 removed during attack, or 70 per cent.

The simple catarrhal variety of appendicitis without retention is seldom brought to the surgeon's attention; more frequently, and still not often, to that of the physician, as it usually accompanies a catarrhal enteritis, and has no symptom peculiar to itself except a slight excessive tenderness in the right iliac region. Of this class, we have not operated on or seen a single case. Catarrhal inflammation with retention is a very different condition; it presents a serious train of symptoms, producing a pulse as high as 130, temperature of 105 degrees, as can be seen by Cases 65 and 118.

This form is frequently brought to the surgeon's attention. It is accompanied by a train of severe symptoms both local and general, and endangers the life of the patient much more than the preceding one. There were three cases of this variety operated on, all recovered. Of the 141 cases operated on, the appendix was found completely gangrenous and not perforated in 4 cases, with 4 recoveries, no deaths. In this form of appendicitis the appendix is usually surrounded by bowel or omentum without a pus infection of the peritoneum.

Pressure atrophy of the appendix with perforation was considered in former times to be due in the majority of cases to foreign bodies that had passed into it from the alimentary canal. This was erroneous. Later observations show that only a very small percentage is due to foreign bodies, such as seeds, cherry stones, etc., passing into the appendix in that manner, but the great majority of pressure atrophy perforation is produced by fecal concretions (enteroliths). Number of foreign bodies in our cases, five, 3.5 per cent.; number of fecal stones, forty-three; percentage of fecal stones, about 30 per cent. This does not represent all, as many of the appendices allowed to remain undoubtedly contained them.

The specific infections seldom produce obstruction of the appendix or special symptoms. Of our cases, we had one of the typhoid variety. Mrs. B., Case No. 46, operated; recovered. Of the tubercular variety we had one case, and the patient recovered from the immediate effects of the operation, and died of a general tuberculosis eighteen months later.

Retention accumulations in the appendix from cicatricial contraction occur where an ulcer has previously existed in the appendix, and the contraction so occludes the caliber of the base of the appendix that the secretions in the cavity of the appendix accumulate, produce distension, bring on attacks of pain, fever, and local tenderness, and finally rupture. The only cases of this kind were Case 101, twelve attacks in two and one-half years, and Case 126, five attacks in eight months. The effects of the obstruction of a foreign body or concrement at the base of the appendix is the production of a gangrene of the appendix: 1, by infection and gangrene, not by restriction of circulation, as the appendix receives its blood supply from the side, not from the end; 2, by retention of contents; and 3, by strangulation from swelling of mucosa. The cases of this kind will be considered under the head of gangrene of the appendix.

Pathologic Lesions.—Simple recurrent catarrhal appendicitis is considered by physicians to be a frequent disease. The course of this disease is supposed to be an inflammation of the appendix and an accumulation within the appendix of the products of inflammation with the subsequent escape through the opening of the appendix into the cecum. That recurrent appendicitis is not of this variety, I am convinced.

Recurrent appendicitis in the cases that we have operated upon is due most frequently to a foreign body in the appendix, and next in frequency is due to cicatricial contraction, and these recover not by the passage of the products of inflammation through the neck of the appendix into the cecum, but by ulceration from without inwards in wall of cecum from a circumscribed suppuration about the appendix at the seat of the foreign body. These cases are misnamed by some authors, cecitis or pericecitis. Matterstock, in 146 autopsies for perityphlitic abscess, found the cecum perforated from within out only twice. Number of cases of this class diagnosticated recurrent catarrhal appendicitis, and operated on by us, 3; of these, all showed rupture of wall and opening into cecum, and all recovered.

A simple ulcer of the appendix produces symptoms in two ways: 1, by occlusion of the appendix from a swelling of the mucous membrane, and the tension produced on the serous coat; 2, by an infection of the peritoneum through the wall of the appendix, or along its mesentery. In the literature on this subject we are led to believe that a pus infection of the peritoneum only occurs with perforation. This is erroneous, as in a number of our cases with simple ulcers of the appendix we had: 1, an infection of the mesentery and peritoneum, and yellow flakes of purulent material (see Case 67); 2, accumulations of a quantity of pus in the peritoneal cavity without perforation (see Case 143). This is very important, for in ulcerations of other portions of the alimentary canal such pathologic conditions are reported as occurring; and why should the mesentery of the appendix not be infected, or why should the peritoneum not be infected without perforation of the appendix, that is, by simple ulceration, as in other portions of the alimentary canal? There is no reason, and while it has not been previously noted, I have found it nevertheless a common pathologic condition.

That simple ulceration of the appendix with perforation should produce a serious, if not fatal, peritonitis, is to be expected the same as perforating ulcers of other portions of the alimentary canal. When a perforation first takes place, to which there are many exceptions, the rule is that adhesions are formed about the appendix, but as the accumulation outside of the appendix increases, these adhesions are ruptured and the contents of the abscess cavity escape into the peritoneum with the results to be considered under general septic peritonitis.

Partial gangrene of the appendix is produced in three ways: 1, mechanical compression by foreign bodies; 2, by accumulated fluid; 3, by, and most frequently, by infection of wall; *a*, biotic; *b*, toxic. The latter was the most frequent condition.

Complete gangrene of the appendix; *a*, with perforation; *b*, without perforation. In complete gangrene of the appendix, either from compression at its base by a foreign body or by infection of its wall, destroying the vitality of the tissue, or by contortion, shutting off its circulation, if an early operation is performed the appendix will be found black, nonadherent, surrounded by omentum, which is adherent to the wall of the bowel, and without pus infection of the peritoneum. It looks as though it were a miniature gall-bladder with extremely thin walls; The dangers of this variety with early operation before it has perforated, one can readily see would be small, as the cecum can be lifted into the wound, the appendix ligated, excised in the absence of pus in the peritoneal cavity, and with very little danger of subsequent infection. When the appendix has perforated, as in subdivision *a*, the contrary is the case. We have a greater or lesser accumulation of the products of infection and gangrene of the appendix, the microphytes, pus, etc., liberated in the peritoneum with or without adhesions. In this variety, perforation can take place directly into the peritoneal cavity and a general peritonitis be produced, in which there is no effort at limiting adhesions, the same as you find following gangrenous destruction of other portions of the body from infection in which there is an absence of the effort of limitation and a non-restricted advancement of infection.

Peritoneal Infections.—The first variety of infections without perforation I have mentioned under the head of ulceration of the mucous membrane. The second variety is the most common in disease of the appendix, a small circumscribed abscess as a result of perforation. The effect of this abscess in its subsequent course depends: 1, on whether there follows necrosis of the wall of the adherent intestine which protects the peritoneal cavity and the admission of the contents of the abscess into the intestine; or 2, whether the abscess is retained within the constantly dilating sac, producing a large accumulation always separated from the general peritoneum, and which can be treated surgically by a lateral incision without opening the unaffected portion of the peritoneal cavity; or 3, whether the abscess suddenly ruptures into the peritoneal cavity; or 4, whether the abscess opens into other of the neighboring viscera or cavities, as kidney, bladder (Case 82) or pleura.

The local, circumscribed peritoneal abscess is a source of danger: 1, from absorption; 2, from necrosis of the tissues forming its wall, that is, wall of the bowel, followed by hemorrhage and death (Case 54); 3, danger of rupture into the general peritoneal cavity; 4, thrombo-phlebitis, secondary abscess. (See Cases 10 and 26.)

General Suppurative Peritonitis—as a result of disease of the appendix is produced: *a*, by a direct perforation and emptying of contents of the appendix into the peritoneal cavity (many cases); *b*, by a rupture of a small circumscribed abscess that had previously formed around the appendix (Case 108); *c*, by infection through wall of appendix (many cases), and also abscess (Case 86); *d*, by a rupture of gangrenous appendix into peritoneal cavity. The result of the infections of the peritoneum, or general suppurative peritonitis, depends upon the pathologic changes produced by the infection on the surface of the peritoneum. We have, 1, a dry septic variety of peritonitis with more or less complete exfoliation of the endothelium of the peritoneum, which terminates fatally in a very short period of time, as in Cases 25 and 43. We have, 2, where the quantity of pus is considerable, a ptomaine poisoning from the immediate absorption of the quantity of pus poured into the peritoneal cavity, where the patient at the end of four to twelve hours after the rupture will die with the most profound symptoms of collapse from toxines. (See Cases 102 and 104.) We have, 3, an escape of a quantity of pus into the peritoneal cavity, generating a suppurative peritonitis. Of this variety there were thirty-six cases, with twelve deaths. In all of these the patient had no immediate manifes-

tations of collapse; in many the pulse was not above 90, temperature not above 100 degrees at the time of the operation, even in cases in which the surface of the bowel in one-half or three-quarters of the entire abdomen was covered with pus. This condition can exist four, five, six, or even seven days without producing the symptoms of collapse which are recorded in our text books as occurring *immediately* from *infections* or *ruptures* into the peritoneal cavity. The symptoms of collapse come on in these cases *only after an absorption of the products of inflammation*, never primarily, and when they do come on the patients die within a very few hours after their onset. The symptoms of collapse in these cases always surprise the attending physician, as his patient before their onset is considered to be very far advanced in convalescence—indeed, if not cured, and this explosion surprises him like a thunderclap from a clear sky.

I will not go into the details of the clinical history of the many varieties of lesions and their sequences which I have now related, as you can readily understand how the course in the various pathologic conditions would differ. There is probably no disease in the abdominal cavity that produces such a multiplicity of manifestations, pathologic conditions, and variety of dangers as that of lesions of the appendix. In comparing the operative with the non-operative treatment all these pathologic conditions must be considered separately, otherwise we can draw no reliable conclusions as to the merits of various procedures. In order to do this, the symptoms of each lesion must be so distinctly and separately outlined that the lesion can be recognized by the medical man without operating, as well as by the surgeon operating. We will, therefore, now consider the symptomatology of appendicitis.

SYMPTOMATOLOGY.

Can we recognize the various pathologic conditions by the symptoms? Can we say from the symptoms, this is catarrhal appendicitis; this is peritonitis? *Emphatically, no.* What are the symptoms of acute catarrhal non-obstructive appendicitis? They are the symptoms of enteritis, usually accompany enteritis, with a slight increase in the local tenderness over the appendix. What are the symptoms of suppurative appendicitis with obstruction, that is, with retention products of infection within the appendix? Sudden attacks of pain in the abdomen, either localized to the right iliac region, or general, shortly followed by nausea and very frequently vomiting. Local tenderness most frequent, occasionally general, extreme tympanites, a pulse of from 120 to 130; temperature of from 104 to 105½ degrees; in fact, the classical symptoms of peritonitis, and still no peritonitis present. (See Cases 83 and 116.) The symptoms of ulceration of the mucous membrane without perforation are just the opposite to the preceding ones in intensity, being as a rule the same symptoms, but very mild and with specific ulceration, as typhoid and tubercular; they are also practically the same as the latter. (See Cases 46 and 30.)

In ulceration with perforation, we have, 1, a sudden attack of pain; 2, followed always by nausea and frequently vomiting; 3, increased localized tenderness in right ileus; and 4, a temperature of 102–103 degrees. These symptoms continue for three days. They may be accompanied by extensive tympanites and general tenderness. If the abscess remains circumscribed they will gradually subside, and at the end of a week the temperature will be 99½ to 100 degrees, pulse 90, absence of general tenderness, absence of tympanites, and only local tenderness present. But still there may be an abscess in the peritoneal cavity.

Gangrene of the mucous membrane has no special symptoms different from those just mentioned with ulcerative perforation, and can not be determined until the abdomen is opened and the appendix examined. There are following a perforation of the appendix no special symptoms, except a possible exacerbation of pain and an increased area of tenderness.

We have now considered the leading symptoms of the varieties of appendicitis, per se, without its complications, and we recognize four cardinal symptoms within the first forty-eight hours in every case: 1, sudden pain; 2, nausea and vomiting; 3, increased local tenderness over the appendix; and 4, elevation of temperature. These symptoms occurring in a healthy individual are pathognomonic of this disease and all that is necessary for its recognition. They are most marked and characteristic within the first forty-eight hours; therefore the diagnosis is most readily and positively made at that time.

Special care should be exercised in excluding females with history of genito-urinary infections.

The infections of the peritoneal cavity without perforation have no additional immediate symptoms to those of appendicitis without infection of peritoneum. *Infection of the peritoneum with perforation has immediately following the perforation no special symptoms above a circumscribed peritonitis, or a simple lesion of the appendix without perforation.*

The constitutional symptoms of a circumscribed abscess in the neighborhood of the appendix immediately on its formation are usually pain and vomiting, and elevation of temperature approximating 103 degrees. This continues for four or five days, subsides to 99½, or even 99 degrees, as long as the abscess remains circumscribed and does not open into the peritoneal cavity, or into the retro-peritoneal cellular tissue. Induration, increased local tenderness.

Diffuse General Peritonitis.—What are the symptoms of diffuse general peritonitis? If the members of this Congress were to answer that question from our text-books, or cases reported in our journals, they would say, *immediately*, that is, within a few hours after the infection—symptoms of tympanites, intense pain, collapse, particularly the latter would be present. I desire to call your attention to the symptom of collapse as a manifestation of peritonitis because it is misleading. We are taught in our text-books that the patient has *immediately* following a rupture into the peritoneal cavity of one of the viscera, or an abscess, particularly the latter, the manifestation of collapse. *I will state now that that symptom does not occur except under special conditions*, and I would warn the doctor who relies on the symptom of collapse as an immediate manifestation of perforation, that he is in error, except in cases of sapremia, as before mentioned, and that his erroneous idea on this subject will cost him the lives of many of his patients. The manifestations of rupture into the peritoneal cavity depend upon: 1, the character of the material entering the peritoneal cavity; 2, the quantity of

material; 3, the pathologic changes produced within the peritoneum by various substances; and 4, resistance offered by peritoneum. Examples of the first, when the substance admitted into the peritoneum is chemically irritating or poisonous, as gastric juice, fluid from hydatid cysts, cysts of the kidney, etc. As a result of these admissions into the peritoneal cavity, we have immediate manifestations; pain, tenderness, collapse. Examples of the second, where the quantity of material cuts an important figure. If the quantity of material be small, as of the substances mentioned in No. 1, as well as the admission of pus or the rupture of small abscesses into the peritoneal cavity, which we see in everyday practice, the immediate manifestations of their presence may be very limited and transitory. While if a large quantity be admitted, the rapid absorption, by the peritoneum of their toxines or ptomaines, produces rapid collapse and death without waiting for inflammatory reaction, the same as if a poisonous alkaloid were injected into the peritoneal cavity, as in Case 102. Examples of the third, where substances, small in quantity, but particularly septic in their nature, cause a peritonitis of greater or lesser severity, which peritonitis may assume the fulminating dry form so dreaded by all laparotomists, fortunately a form of rare occurrence and not amenable to treatment. Or the slow variety in which there is an accumulation of sero-purulent material which gradually increases in quantity and spreads over the surface of the bowel, producing but slight disturbance for a number of days until such time as the rapid absorption of the products of inflammation takes place, and the patient suddenly collapses and dies. The pus is guided in its advancement on the surface of the intestine by the position of the coil, as shown by formation of secondary abscesses on the opposite side of the abdomen and in the neighborhood of the kidney.

Errors in diagnosis occurred four times.

1. A perforating round ulcer of the stomach caused the peritonitis.
2. An extra nephritic renal calculus on right side.
3. Rupture of a psoas abscess.
4. Gangrene of entire mucous membrane of colon (diphtheritic colitis).

All cases, except the last, demanded immediate operation. It will be further noted that in every one of these four cases there was an absence of some of the cardinal symptoms.

In order to determine the advisability of operative interference, we must ascertain as near as possible: 1, what percentage of the cases terminate fatally that are not interfered with surgically? 2, what percentage of the same class of cases terminate fatally that *are* operated upon? 3, what are the additional dangers of the operation per se? It is estimated on good authority that from 27 to 30 per cent. of all cases treated medicinally terminate fatally sooner or later, if not operated. On that point I can not furnish statistics of my own as I operate on all cases. The percentage of deaths in our cases was 11 per cent., or 16 deaths in 141 cases.

In the first 100 cases we had a mortality of only 7 per cent. Since that, I lost three consecutive cases in as many days. The causes of death in our cases were:

1. Pyemia. { 1. Septic pneumonia. 2. Septic phlebitis. 3. Multiple infarcts.
2. Ptomaine poisoning. { Rupture of large abscess into peritoneal cavity at time of operation.
3. Septic peritonitis. Thirteen existed before operation; *Thirty-six cases of general septic peritonitis operated.* I consider the dangers of the operation comparatively nil in competent hands.

What operation should be performed? In early cases the lateral incision over the most common seat of the appendix, in the right iliac fossa, should be given the preference. In late cases the incision should always be over the most prominent portion of the induration. In this class of cases the appendix is removed only when it presents itself palpably in the wall of the abscess and can be removed without rupturing the adhesions which separate the abscess from the uninfected portion of the abdomen. In early cases always remove the appendix, as it is the only certain means of preventing recurrence. I had eleven cases of recurrence in which the appendix was not removed at the primary operation; six of these were re-operated upon early in their first recurrence, appendices removed, all recovered. We never use fluid of any kind in the peritoneal cavity, pus or no pus.

When should we operate? On every case of appendicitis, or better, on every case where we have present the four cardinal symptoms:

1. Sudden attack of pain over appendix.
2. Always nausea, frequently vomiting.
3. Elevation of temperature.
4. Exaggerated local tenderness in various positions occupied by the appendix.

In every case in which the above symptoms were present, including every case on which we operated, except those mentioned as errors, we found pus, gangrene, or proof that it had previously existed within or about the appendix. In one case, in which elevation of the temperature was absent, the mucous membrane of the appendix was ecchymotic. The operation should be performed at the earliest possible moment after the onset of the symptoms: 1, because, at that time, the inflammation is limited; 2, the appendix is easily located and removed; 3, the time for rupture into the general peritoneal cavity has not occurred; 4, the gangrene of the bowel in the neighborhood has not taken place; 5, Matterstock states that upwards of 50 per cent. of the mortality from disease of the appendix occurs before the sixth day. It is therefore evident that the operator who waits to operate as late as the sixth day will lose 50 per cent. of all the cases that would terminate fatally without operation. I desire to urge upon you: 1, that you operate on all cases; 2, that you operate early, so as to prevent the disastrous effects of a rapidly spreading disease in the peritoneal cavity, and save yourself the humiliation of performing an antemortem operation.

Case 1.—Date of operation, Nov. 9, 1885. Operator, Dr. J. B. Murphy. L. E., aged 24 years; male. Cook County Hospital. History: Two weeks before operation, patient began to feel pain in right iliac region and in lower part of abdomen; nausea, vomiting and elevation of temperature. He noticed a swelling in right iliac region which gradually increased in size up to the time of operation. Operation: Incision over highest point of induration; drainage of abscess cavity; general peritoneal cavity not opened. Appendix was not removed. About twelve ounces of pus escaped. Patient made a rapid recovery.

Case 2.—Date of operation, March 2, 1889. Operator, Dr. Murphy. L. Z., aged 19 years; male, Cook County Hospital.

History: Patient has been sick for three weeks with the usual symptoms of appendicitis, at the time of entrance into Hospital. Some induration present. Temperature 99 degrees. Diagnosis: Appendicitis with perityphlitic abscess. Lateral incision directly into the abscess. General peritoneal cavity not opened. A fecal stone the size of a bean escaped in the pus. The appendix firmly imbedded in a mass of induration was not removed. Recovery.

Case 3.—Date of operation, March 22, 1889. Operator, Dr. Murphy. Mrs. O. D., aged 35 years; female. History: Typical attack began March 1. Severe symptoms of peritonitis were manifested on the 7th. Patient had fever, sweats and evening elevation of temperature until time of operation. Abdomen greatly distended; induration extended from right side beyond the median line to the left. Abdomen tympanitic over induration which was explained by presence of gas in the abscess cavity. Operation: March 22, three weeks after onset of attack. Lateral incision; about two quarts of very offensive pus escaped. The bowels were covered with a thick layer of fibrin. Drainage (rubber tube); recovery.

Case 4.—Date of operation March 25, 1889. Operator, Dr. Murphy. L. G., aged 14 years; female. History: On the 18th patient complained of pain in the right iliac region followed by vomiting. Temperature 102 degrees. March 19 temperature 99½ degrees, pulse 90. Tenderness increased in right iliac region vesical tenesmus. These symptoms continued without an elevation of temperature above 99½ degrees until time of operation. The induration was about the size of a hen's egg. Operation: Lateral incision into abscess. General peritoneal cavity not opened. Appendix not removed. Drainage; recovery.

Case 5.—Date of operation April 10, 1889. Operator, Dr. Murphy. Mr. X., aged 55 years; male. Case occurred in practice of Dr. Hicks of Burlington, Wis. Patient had a typical attack of appendicitis six weeks ago. Since then has been confined to bed with fever, sweats, pain and tenderness in right iliac region. Dr. Hicks pronounced the case one of perityphlitic abscess, and on the following day Dr. Murphy assisted by Dr. Hicks performed the operation. Operation: Lateral incision; general peritoneal cavity not opened; large quantity of very offensive pus escaped. The abscess extended down into the pelvis. No foreign body, no fecal stone. Drainage; recovery.

Case 6.—Date of operation May 3, 1889. Operator, Dr. Murphy. T. B., aged 13 years; male. History: April 25, 1889, patient came to my office complaining of pain in right iliac region. Examination: On examination no swelling could be detected: no elevation of temperature. He presented himself again May 3, with pinched anxious expression of countenance; pain, swelling and tenderness in right iliac region. No fluctuation, no symptoms of phlegmon in the abdominal wall. Temperature 102 5-10 degrees, pulse 128. Diagnosis: Perforated, perityphlitic abscess. Operation: Lateral incision; the induration had lost its resistance under the anesthetic; peritoneal cavity opened; an abscess found in the retro-cecal region. Fecal stone size of a Lima bean. The appendix had been amputated at its base by an ulcer; the body of the appendix retained its vitality by adhesions to the cecum; removed, drained. May 4, temperature 99 degrees, pulse 120, vomiting constantly. May 5, temperature 101.4 degrees, pnlse 136. Stll vomiting, countenance pinched and anxious, delirious; very tympanitic over entire abdomen. Died same day. General septic peritonitis.

Case 7.—Date of operation May 16, 1889. Operator, Dr. Lee. D. L., aged 19 years; male. Patient's attack began May 10 with severe pain in right iliac region accompanied by nausea and vomiting; these symptoms continued and constantly increased until May 13, when the pain extended all over the abdomen, but the greatest sensitiveness was in the right iliac fossa. Induration could be felt there without the signs of fluctuation or phlegmon, May 16. General amelioration of symptoms, pulse 84, temperature 99 degrees. Operation: Lateral incision, no infiltration of sub-peritoneal tissue. Intra-peritoneal abscess opened, drained; appendix adherent its entire length along the wall of cecum. Drainage; recovery.

Case 8.—Date of operation June 23, 1889. Operator, Dr. Murphy. H. R., aged 26 years; male. On June 18 patient was seized with pain in right iliac region, nausea, vomiting and constipation. At the end of twenty-four hours the symptoms became those of general peritonitis. Examination: On the third day distinct induration could be felt in right iliac region extending half way to umbilicus. No induration from rectum. Operation consented to on fifth day. Operation: Lateral incision. When the peritoneal cavity was opened, to my great surprise it appeared perfectly healthy. No adhesions to anterior abdominal wall. The large induration which before operation seemed to extend to the umbilicus had disappeared. A careful examination revealed an induration mass close to the spinal column to the left just below the level of the umbilicus. The adhesions were gently separated, and an abscess opened; inserted drainage tube, packed about with iodoform gauze; recovery. This case illustrates how deceptive the sign of induration may be in the acute stage. It appeared to be in this case close to the abdominal wall in front and when the peritoneal cavity was opened it was found located at the posterior wall. The induration always appears larger than it actually is. This difference being most marked in the first few days of the attack.

Case 9.—Date of operation Aug. 9, 1889. Operator, Dr. Murphy. Mrs. N., aged 56 years. History: Patient had complained of pain and discomfort in right iliac region two weeks previous to Aug. 4, 1889. At this time pain became very intense, and a doctor was called at midnight to relieve her. Nausea, vomiting, great abdominal pain and tenderness and depression. These symptoms continued for four days. A consultation was called and an operation decided upon. The patient was extremely obese; no induration could be detected either from without or from the rectum. Operation: Lateral incision, directly into abscess; about an ounce of pus (very offensive) escaped and with it a small fragment of bone. General peritoneal cavity not opened. Rapid recovery.

Case 10.—Date of operation Aug. 16, 1889. Operator, Dr. Murphy. F. F., aged 56 years; male. Case occurred in practice of Dr. Volini. History: On August 16 patient was seen in consultation with Dr. Volini who had made a diagnosis of perityphlitis and gave the following history: Three weeks ago patient was attacked with severe pain in abdomen followed by nausea, vomiting and high fever. Pain rapidly extended over entire abdomen and the patient became very tympanitic. The tympanites and general abdominal pain subsided in four or five days, but the sensitiveness and induration remained in the right iliac region up to time of operation. The patient's temperature was then 99 degrees (in the morning), but the attending physician stated that in the evening the temperature was very high and followed by sweats. The patient was very much emaciated and presented all the appearance of a typhoid in the third week. Diagnosis: Peri-appendicitis (circumscribed abscess). Operation: Lateral incision, general peritoneal cavity opened, circumscribed abscess evacuated; drainage,

Aug. 17,	temperature	99½	degrees,
Aug. 20,	"	100½	"
Aug. 20,	"	102	"
Aug. 21,	"	100½	"
Aug. 22,	"	99½	"
Aug. 26,	"	101½	"
Aug. 27,	"	101	"
Aug. 28,	"	102	"
Aug. 30,	"	100 8-10	" evening.
Aug. 30,	"	99 8-10	" morning.
Aug. 30,	"	101 8-10	" evening.
Aug. 31,	"	102	" morning.
Aug. 31,	"	103½	" abscess burst through.
Sept. 1,	"	normal	A. M.
Sept. 1,	"	103½	" P. M.
Sept. 1,	"		midnight chill.
Sept. 2,	"	102½	"
Sept. 2,	"	102	"
Sept. 3,	"	102½	" A. M.

Sept. 3—3 P. M. died.

A second abscess was opened postoriorly on the 29th of August. Patient had chill Sept. 1, with pulmonary symptoms; from that time he continued to sink and died Sept. 3. Autopsy revealed embolic pneumonia of lower lobe of right lung. Sero-purulent fluid in right pleural cavity. Lungs otherwise normal, heart and liver normal. Remains of primary abscess in neighborhood of vermiform appendix which was opened in the first operation. Down in the retro-peritoneal cellular tissue a second abscess cavity was found which had been opened in the second operation; from this abscess he received his fatal pyemia. No peritonitis; no infarcts in any of the other organs. Head not examined.

Case 11.—Date of operation Oct. 1, 1889. Operator, Dr. Hartman. S. W., aged 10 years; male. History: Patient was taken sick with a typical attack many months before; the abscess was aspirated and finally external fistula formed. The patient improved, was up and about, but a mucus dis-

charge continued from the sinus. Operation: A laparotomy was performed; peritoneal cavity opened; fecal stone at the base of the sinus was removed from the appendix which was adherent to the abdominal wall and cecum; the appendix was not removed but its mucous membrane was curetted. Uneventful recovery.

Case 12.—Date of operation, Dec. 17, 1889. Operator, Dr. Lee. I. D., aged 22 years; male. History: About Dec. 3, 1889, patient was taken suddenly ill with pain in right iliac region accompanied by faintness and vomiting. These symptoms continued for two weeks together with fever and sweats. Examination: On examination was found a large circumscribed induration in right iliac region. Temperature 102 degrees, pulse 120. Operation: Fourteen days after onset. Lateral incision. Peritoneal cavity opened, contained a serous fluid and was very much congested. Large mass of adherent intestines could be seen. On separating these, a pus cavity was opened and drained. Pulse and temperature rapidly fell to normal and patient made a speedy recovery.

Case 13.—Date of operation, Jan. 16, 1890. Operator, Dr. Murphy. D. L., aged 20 years; male. History: Had an operation in May, 1889, for drainage of a perityphlitic abscess. Present attack typical; local pain, vomiting, fever, tenderness and induration. Operation: Fourth day after onset. Drainage of a circumscribed abscess. Appendicisectomy. Recovery. (See history Case 7, May 16, 1889).

Case 14.—Date of operation, Jan. 26, 1890. Operator, Dr. Murphy. R. W., male; aged 26 years. Occurred in practice of Dr. Devlin. History: Patient's sickness commenced with a typical attack January 19. January 20, temperature 101 degrees; symptoms continued. January 21, temperature 102 degrees; induration detected in right iliac region. Operation advised. From January 22 to 24, temperature ranged from 101 degrees to 102½ degrees; pain and tenderness increased and induration extended to above the crest of the ileum. January 25, temperature 103½ degrees. January 26, operation: Lateral incision into pus cavity; general peritoneal cavity not opened. Appendix not removed. Half a pint of pus evacuated; drained. January 27, temperature normal and remained there; recovery.

Case 15.—Date of operation Feb. 28, 1890. Operator, Dr. Murphy. T. McC., aged 29 years; male. Patient had had twenty attacks previous to this. History: One week prior to operation patient had a typical attack of appendicitis. Symptoms continued accompanied by a temperature of 103 degrees up to the time of operation. Pulse 120. Operation: Lateral incision; a large pus cavity opened, without opening the general peritoneal cavity: About twenty ounces of pus escaped. Appendix not removed. Second day after operation fever had permanently disappeared. This case recurred but was not operated.

Case 16.—Date of operation, March 27, 1890. N. La B., male; aged 26 years. Operator, Dr. Murphy. Cook County Hospital. When patient was admitted to Hospital a slight induration could be felt in right inguinal region. There was great tenderness in the region of induration. Patient says he had a similar attack about three years ago. Temperature at time of operation 100 degrees. Operation: Five days after beginning of attack. Usual incision. Appendix found encircled and adherent to omentum. Appendix loosened from adhesions and amputated; it was large and swollen, the size of a man's little finger. The stump was cauterized and top sewed. No pus in peritoneum. Iodoform gauze packing. Pus was found in appendix; recovery.

Case 17.—Date of operation June 11, 1890. Operator, Dr. Murphy. Wm. H., aged 20 years; male. Cook County Hospital. Patient was transferred from medical side of Cook County Hospital to surgical side for operation.

Operation: Typical incision. The appendix was located, ligated and amputated; the stump top-sewed with silk. The abdominal cavity was closed without drainage. The appendix contained enterolith and pus. Patient made a rapid recovery.

Case 18.—Date of operation June 25, 1890. Operator, Dr. Murphy. Miss W. Richmond, aged 27 years. Presbyterian Hospital. History: For the past four years the patient has had recurrent attacks of severe pain in abdomen which came on suddenly, continued for several days and was followed by a soreness of some days' duration. Present illness, patient was taken sick on May 12, 1890, with an attack far more persistent.

Case 19.—Date of operation June 26, 1890, Operator, Dr. J. B. Murphy. Rev. G., aged 40 years; male. On June 23 patient was seized with griping pains in right iliac region which gradually increased, accompanied by vomiting. Pulse that evening 120; temperature 102 degrees. Localized tenderness; induration; general tympanites.

Operation: Appendicisectomy. Appendix non-adherent, gangrenous, not perforated. The serous coat of the appendix was stretched over the gangrene débris of the mucous membrane and pus; it was not protected by adhesions except by omentum at base, and rupture was imminent. There was no infection of peritoneum. How different the condition would have been twenty-four hours later; the appendix would have been ruptured, a septic peritonitis developed as there was no protecting adhesions, and the patient's life would have been greatly jeopardized if not sacrificed. Rapid recovery.

Case 20.—Date of operation July 15, 1890. Operator, Dr. F. S. Hartman. Mrs. B. Typical attack; pain, vomiting, temperature and slight induration over crest of ileum, posteriorly. Operation: The operation was performed two weeks after onset of attack. Incision over crest of ileum, posteriorly; drainage of a circumscribed abscess. Appendix not removed. General peritoneal cavity not opened; recovery rapid.

(To be continued.)

A SUGGESTION AS TO THE CARE OF SILK SUTURES DURING OPERATIONS.

BY GEORGE F. KEIPER, A.M., M.D.
EYE AND EAR SURGEON TO ST. ELIZABETH HOSPITAL. LA FAYETTE, IND.

The ordinary method of sterilizing silk sutures is to put needles and silk in boiling water. Result, tangling of the different sutures and vexation in their separation. To overcome this, manufacturers



have put before us reels of silk in bottles containing an antiseptic solution. The ends are brought out through rubber corks. They are thus always kept sterilized. The needle is supposed to be threaded by this sterilized silk, but it would be hazardous to use it in living tissues unless both are sterilized after threading. This puts us where we usually begin, and the result is, to be safe, we must again sterilize the silk.

The accompanying photograph explains a method of caring for sutures; this I have used for two years. It is impossible for them to tangle. The needles are threaded and wound on an ordinary card, which is nicked the better to receive and hold the sutures.

They can thus be prepared and kept on hand ready for any operation. At the time of operation as many as may be necessary may be cut off and thrown into the sterilizer. When the surgeon is ready for one, it is simply unwound. Another advantage presented by this suggestion is that a separate receptacle for sutures is unnecessary.

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

The Third Annual Meeting Held in Chicago, Sept. 12, 13 and 14, 1893.

AUGUSTIN H. GOELET, M.D., President.

(*Continued from page 273*).

THIRD DAY—SEPTEMBER 14—MORNING SESSION.

Discussion of yesterday concluded.

THE GRAPHIC STUDY OF ELECTAICAL CURRENTS IN RELATION TO THERAPEUTICS.

By J. H. KELLOGG, M.D. of Battle Creek, Mich.

Something more than a year ago M. D'Arsonval, assistant to Prof. Brown-Sequard, the eminent Parisian physiologist, presented at a Conference of the French Society of Physics, a paper in which he described an alternating magneto-electric current to which he applied the term "sinusoidal." This current he obtained from a small magneto-electric machine modeled after that of Clarke, which consists of a vertical electro-magnet and another electro-magnet so placed as to revolve upon a horizontal axis in such a manner that the extremities of the electro-magnet move in a plane parallel to the branches of the vertical magnet. This machine, and others of its type, as originally constructed, were furnished with an interrupting arrangement which reversed the current at the moment of highest potential. By a suitable modification in the mode of construction, D'Arsonval secured from the machine a current in which the rise and fall of potential was uniform from zero to the maximum and back to zero again, and in both directions. This fact he learned by a study of tracings obtained by means of a special device constructed by him for the purpose. These curves he presented with his paper, and I presented a reproduction of them in connection with a paper which I read before this Association at its last session.

I was very forcibly struck by the description given by D'Arsonval of the physiologic effects of this current, as they seemed to tally so exactly with the effects which I had first obtained a number of years previous with a magneto-electric machine with which I was led to experiment in the course of a series of investigations which I was making with a large variety of electrical appliances of various descriptions. I first described this current in a paper read before the AMERICAN MEDICAL ASSOCIATION in 1888. The peculiarity of this current to which I then called attention was that it was capable of producing energetic and painless muscular contractions, and that it was also a most effective means of stimulating the nutrition of the parts to which it was applied. In concluding my description of the current, I stated as follows: "The therapeutic results following the use of this current justified me in claiming for it a decided superiority over any other form of electrical current for this purpose (that of exciting muscular action). I have used this current for medical purposes for the last five years." In the following year I described the current again in a paper read before the American Association of Obstetricians and Gynecologists.

The publication of D'Arsonval's graphic representations of currents of regular and irregular variation led me to undertake a similar study of the current produced by the electro-magnet apparatus to which I have referred. Although recognizing the peculiarity of the current which I had discovered, and which had led me to utilize its therapeutic properties for a number of years and with excellent advantage, I was quite at a loss to understand its peculiar qualities. I showed the machine to Dr. E. Betton Massey of Philadelphia, and other medical electricians, who, like myself, were struck with its peculiar properties, but were unable to explain the reason of its peculiarities.

In order to obtain a tracing of the current, I improvised an electrograph by attaching a writing lever to the solenoid of a large and very delicate galvanometer. The curve which I obtained by this means encouraged me to persevere. I accordingly undertook to make a more delicate machine, the construction of which, although different from that of

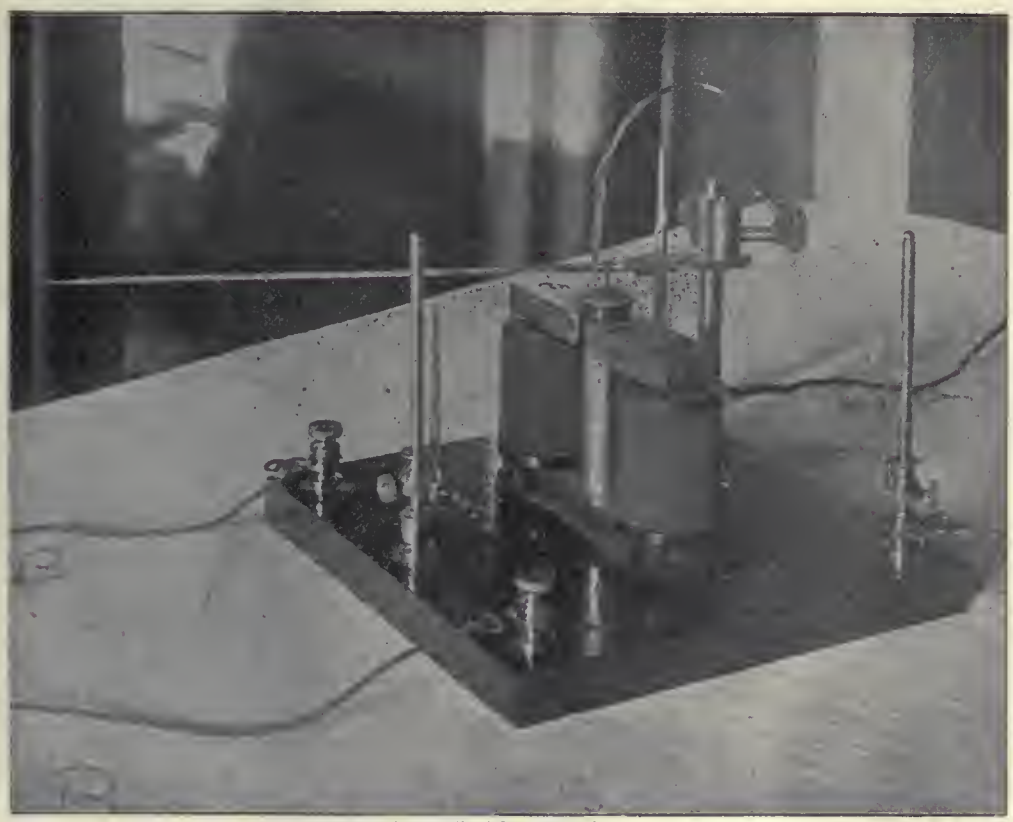


Fig. 1. The Electrograph.

D'Arsonval's, was suggested to me by the description of his apparatus. (See Fig. 1.) The construction is as follows:

A, B, C, and D, Fig. 2, represent the several portions of a soft iron frame. On the two arms, D and E, are mounted two solenoids (E, E), each wound with 106 feet of copper wire of the diameter .032 inches. The two solenoids are connected, and the terminals (K, K), when the instrument is in use, are connected with the poles of the battery, thus producing an electro-magnet, of which A constitutes one pole, and B, B, the other. The arm A is cylindrical in form, and the terminals B, B, are semicircular at their ends, so as almost completely to embrace the arm A, thus producing an annular magnetic field. A small solenoid composed of 10.5 feet of very fine copper wire (.005 inches in diameter) is placed at F. The current to be tested is passed through this solenoid by making proper connections with the terminals (L, L). When a current is passing through the coils E, E, thus producing a magnetic field about the solenoid F, a current flowing in one direction through F, will cause it to be lifted up, while a current passing in the opposite direction will cause it to drop down below the level to which it is held by the spring I. The writing arm G, is attached at one end to the brass post H, the other end being free. A small standard connects it with the solenoid F, which, acting upon the short arm of the lever, produces even with a very slight movement of the solenoid, a considerable movement of the long bamboo lever, the free end of which rests against the smoked surface of a revolving cylinder.

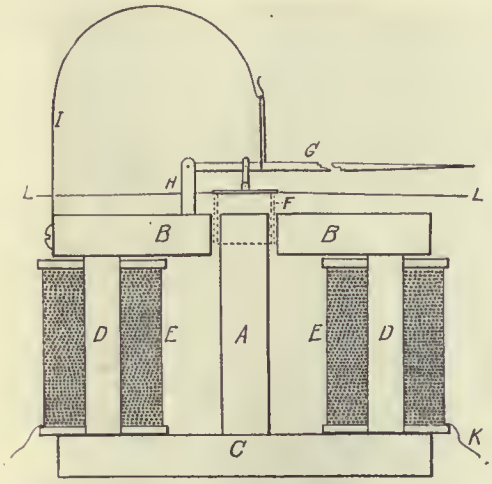


Fig. 2. Section of Electrograph.

By means of this device, the most delicate variations in an electrical current may be instantly recognized and recorded by means of a kymographion, in the same way in which tracings are taken from a recording tambour.

By means of this instrument, I have taken a large number of tracings of different forms of electrical currents. Being especially interested in the sinusoidal current, I naturally first gave my attention to this, and obtained the beautiful tracing shown in Fig. 3.

The physiologic effects produced by the sinusoidal current which are most characteristic of it, are 1, its painlessness; 2, its great penetrating power. D'Arsonval has shown that the intensity of the motor, or sensory reaction produced by a given current is proportional to the variation of potential at the point excited. The constant alternation of the current prevents polarization of the tissues acted upon, and hence maintains the maximum exciting effect.

That important physiologic significance must attach to the *mode* of variation in potential, as well as to the *amount* of variation is clearly evidenced by the difference in the effects occasioned by the gradual or sudden withdrawal of the current in making an application of galvanic electricity, which is familiar to all medical electricians.

In the use of the sinusoidal current from my apparatus, different effects are observed, according as the machine is rotated slowly or at a high rate of speed. When rotated slowly and connected with sponge electrodes held one in each hand, vigorous contractions are produced in each arm, and in alternation, nearly all the muscles of the arm seeming to participate in the contractions. When one electrode is placed in contact with the feet and the other held between the two hands, the muscles of both extremities are made to contract vigorously. The contraction is spasmodic rather than tetanic in character. By proper adjustment of the current, strong muscular contractions may be induced without producing the slightest sensation in the skin, and without any pain sensation whatever. With one electrode placed in the rectum, or the vagina, and the other upon the abdomen, strong contractions of the abdominal muscles may be produced, and even of the muscles of the upper thigh, without any sensation other than that of motion. I have frequently seen patients, while taking this current, shaking so vigorously under its influence that the office table was made to tremble quite violently with the movement.

With rapid rotation of the machine, the current obtained is capable of producing strong tetanic contractions similar to those of the faradic machine. This difference is noticeable, however: with the electrodes held in the hands, and the muscles of the forearm thrown into violent tetanic contractions by running the machine at a high rate of speed, the patient can, if he desires, release the sponges at any moment; the only skin sensation produced by an application sufficiently strong to induce tetanic contractions, is a slight prickling, very much less intense than that produced by a faradic current capable of exciting equally strong motor effects.



Fig. 3. Graphic representation of the sinusoidal current obtained from magneto electric apparatus employed by the author since 1883.

The sensory effects produced by the current are exceedingly interesting. As has been already stated, applications of the current sufficiently strong to produce vigorous muscular contraction are attended by no sensory effects whatever. The sensory effects are best obtained by giving the machine a high velocity. Adjusting the apparatus for high velocity, and applying the sponge electrodes, well moistened, to the temples with a gradually increasing current, and with the eyes closed, one seems to see rotating waves of light, resembling a luminous whirlpool, in the region of each electrode.

It is a curious fact that the position of this luminous field is not stationary; it moves with the electrode which seems to be the center of the illuminated area. As the current is increased in strength, the display of light increases in brilliancy, finally becoming so extended and intense that the whole front portion of the head seems to be brightly illuminated. At this point, one begins to experience very slight prickling sensations in the skin, which increase as

the intensity of the current is increased. A remarkable characteristic of the current is, that so strong impressions are made upon the optic nerves, or their centers, by a current too delicate to be recognized by the nerves of the skin. This effect must be due to the great penetrability of the current.

Duchenne showed, in his masterly work published during the siege of Paris, that there is a decided difference in the physiologic properties of the currents obtained from the first and the second helix, and that these currents have very different clinical applications. The current of the second helix was found to possess much greater penetrating power than that of the first helix. The currents of the two helices differed, according to Duchenne, just "as water that is warm differs from water that is boiling, or as iron slightly warmed differs from iron that is white hot," as regards their influence upon sensibility. This fact is only cited as an analogous observation, since the sinusoidal current possesses properties very different from those of any induced current with which I have ever experimented.

The therapeutic indications for which I have employed the sinusoidal current have been based upon the peculiar motor and sensory effects which I first observed ten years ago, and some of which have since been observed and described by D'Arsonval and Apostoli.

Within the last ten years I have made more than twenty thousand applications of the sinusoidal current, having used the machine exhibited with the paper since 1883. Twelve thousand of these applications have been made within the last two years. The greater number of the applications have been made in gynecologic cases, although hundreds of applications have been made in cases not belonging to this class. The uses for which I have found the current most valuable are:

As a means of exercising the muscles, particularly muscular groups which can not be easily brought into isolated action by voluntary effort, and in cases in which, through injury of the nerves or nerve centers, or through disability of some other organ, exercise by voluntary effort has been impracticable.

I have found this current available as a means of producing muscular contraction in cases in which degenerative changes had advanced so far as to destroy the reaction to the faradic current. I have also found the current of great value as a means of securing passive exercise in connection with the rest-cure, in which respect its superiority over faradism applied as prescribed by S. Weir Mitchell is incontestible. I have used for many years, and still use, the faradic current, applying it to the various motor points of the body in such a manner as to secure vigorous muscular contraction as a means of exercise in feeble patients, but I have found the sinusoidal current very greatly superior to the faradic current for this purpose, by reason of the painlessness of the applications and the greater vigor of the contractions which are obtainable. With the faradic current it is often difficult to obtain strong contractions, especially in fleshy persons, and in many cases almost no contraction at all can be obtained without the application of a current of such strength as to be almost unbearable in consequence of the pain produced; and the services of a person skilled in locating the motor points are necessary for its special application in a majority of cases. With the employment of the sinusoidal current, these difficulties disappear entirely. It is only necessary for the patient to grasp the sponge electrodes in his two hands, to secure vigorous contraction of all the muscles of the arm, or with the patient holding an electrode in one hand, the attendant may apply the other sponge to the upper part of the arm, or the shoulder, and thereby secure the most vigorous contractions of all the muscles of the arm operated upon. By a similar application of one sponge upon one side of the abdomen, and the other upon the other side, or one sponge at the lower extremity of the back, and the other at the upper extremity, vigorous contraction of all the intervening muscles is easily secured without taking the trouble to seek out the motor points, and no matter how great the quantity of overlying fat.

I find this current exceedingly valuable as an alternate treatment to be employed in connection with massage. It is not a substitute for massage, but it secures an activity of the muscular structures which can not be accomplished by any form of passive exercise.

The special use for which I have found the slowly alternating sinusoidal current of greatest advantage, has been, as a means of strengthening relaxed or undeveloped abdominal muscles in gynecologic cases. I long ago learned that a great share of the long category of symptoms complained of by women suffering from so-called female weakness, such as "backache," "dragging sensations," "weakness," etc., are due, not to primary pelvic disorders, but to a relaxed condition of the abdominal walls resulting in what Trastour terms "desequilibration," or disturbance in the static relations of the abdominal viscera. Relaxed abdominal walls allow the stomach, bowels, liver, kidneys, spleen and other viscera to become pendant; and a constant drag upon the branches of the great sympathetic which are distributed to these organs results in congestion and irritation of the great abdominal brain, as the semilunar and associated ganglia of the great sympathetic have been aptly termed, and through the morbid reflexes thus set up, give rise to a multitude of painful and neurasthenic symptoms, which render miserable the lives of thousands of women who are really not suffering from any disorder of the pelvic organs whatever, although perpetually under treatment for some imaginary prolapsus, or anteversion, or ovarian irritation, or other pathologic myth.

By strengthening the abdominal muscles, and thus replacing the prolapsed abdominal viscera and restoring the normal abdominal tension, so that the portal circulation recovers its normal tone, I have succeeded in curing hundreds of invalid women who had previously sought relief in vain at the hands of many gynecologists, and in the accomplishment of this, I am certain that the sinusoidal current has played a very important rôle. I find this current especially valuable at the beginning of the treatment of these cases, before the patient has acquired sufficient strength, or sufficient confidence to engage in active gymnastic exercises, or to be subjected to active or active passive exercises of the Swedish movement system, which I always utilize as a means of accomplishing a thorough-going and permanent cure.

I also find the sinusoidal current of great value as a means of after treatment in cases in which I have found it necessary to shorten the round ligaments, or to perform other gynecologic operations for the correction of displacements of the pelvic viscera not curable by non-surgical means. The neglect to employ these and other measures for developing the normal supports of the uterus and ovaries is, I am satisfied, one of the causes which has led to the general failure of the operation for shortening the round ligaments, in the hands of American gynecologists. I have performed this operation more than three hundred times, and with less than 5 per cent. of failures—scarcely a single failure in fact within the last four years since I have perfected the technique of my own method of operation. By the employment of a slowly alternating sinusoidal current for a few weeks after the operation, the abdominal muscles are developed so that they are able to hold the small intestines out of the pelvis, and thus relieve the pelvic viscera.

In cases of facial paralysis, this current affords an admirable means of exercising the muscles and stimulating the nutrition of the paralyzed structures, as one can pick out the affected muscles and put them into rhythmical action with very great facility. In the treatment of spinal curvatures due to weakness of the muscles of one side, or irregularities of muscular development, this current is also invaluable. With one pole applied to the feet and the other to the two hands, vigorous movements affecting nearly all the muscles of both extremities, are easily produced. The current affects involuntary as well as voluntary muscles. It is of great service in a case of constipation, one pole being applied to the rectum and the other to the abdominal muscles. It serves a double purpose in cases of this kind, awakening the vital activities of the rectum, and at the same time rapidly increasing the strength and efficiency of the abdominal muscles.

I have also found it of great service in cases of dilatation of the stomach. By means of a stomach electrode, which I have had constructed for the purpose, with one pole applied internally, the other externally, vigorous contractions are readily produced. I have verified this in several ways. After the current is turned on, one can easily detect the active peristaltic movement by listening over the region of the stomach with a stethoscope. The most positive evidence is afforded, however, by the fact that the stomach diminishes in size. I have sometimes noted an upward movement of the lower border of the stomach during a single treatment, amounting to fully two inches. No painful sensation is produced by the current, even when quite strong. I have, in some instances, increased the strength of the current sufficiently to enable me to obtain the most indubitable evidence of contraction of the organ in the forcing out of the stomach contents through the tube, or along the side of the

tube containing the electrode. This effect is always produced when the current is made sufficiently great. The ejection of the stomach contents is not accompanied by nausea, and ceases the instant the strength of the current is lessened, beginning again when the current is increased. I have used this current to the most excellent advantage in many cases of motor insufficiency of the stomach, with and without dilatation.

The fact that such profound motor and sensory effects can be produced without the ordinary shocking, prickling, and other sensations, is a grateful surprise to the patient, and certainly enhances its value as a therapeutic means.

I have found no electrical application so valuable as a means of relieving a hyperesthetic condition of the abdominal sympathetic ganglia, especially the semilunar ganglia, the lumbar ganglia, and the lumbo-aortic plexus of the sympathetic. It is equally efficacious in relieving pains beneath the shoulder blade and in the back, which are often erroneously attributed by patients to a diseased liver, but which are due, in a great majority of cases to a congested and irritated condition of the abdominal sympathetic ganglia.



Fig. 4. Current from Faradic apparatus. (McIntosh). A, make; B, break.



Fig. 5. Fluctuating current (intervals indicated by time marking represent 1-280 seconds each).

A rapidly alternating sinusoidal current is one of the most efficacious means with which I am acquainted for the relief of the peculiar sensation known as "heaviness," of which dyspeptic patients often complain. This sensation is due to a perverted condition of the sensory nerves of the stomach. Its relief by a rapidly interrupted current is an evidence of the penetrating power of this current.

The rapidly interrupted current may be applied to the stomach either externally by means of a flat sponge electrode, one over the stomach and the other over the spine opposite, or internally by means of a properly formed electrode placed inside a stomach tube, with a flat sponge electrode either over the stomach or the spine opposite the stomach. I have applied the sinusoidal current in this manner in a large number of cases for the relief of stomach symptoms, especially in cases in which examination of the stomach fluid by the method of quantitative analysis, which I have elsewhere described, showed deficiency in that form of stomach work which consists in the combination of free chlorin with albumen as shown by the diminished amount of the combined albumen.

The physiologic laws which govern the various chemicovital processes of stomach digestion are certainly not fully understood, but that they are under more or less direct control of the nervous system, and especially of the sympathetic nervous system, particularly that portion known as the solar plexus, will probably not be disputed. The sinusoidal current seems to act by promoting a normal condition of the sympathetic, and its relations to the stomach thus facilitates the combination of the chlorin with albumen in the conversion of albumen into peptone.



Fig. 6. Improved sinusoidal apparatus designed by the author, giving two distinct currents.

An equally interesting fact, which has been observed in a number of cases, is the action of the current in promoting an improved value in the quality of the digestive product. In the method of examining stomach fluid referred to, an inferior quality in the product of peptic digestion is shown by the diminished value of coëfficient a. An application of the sinusoidal current seems not only to promote the quantity of combined albumen, but to improve its quality.

In the employment of the sinusoidal current for its effects upon the nervous system, I have found a current of high velocity most useful. The potential of this current is so

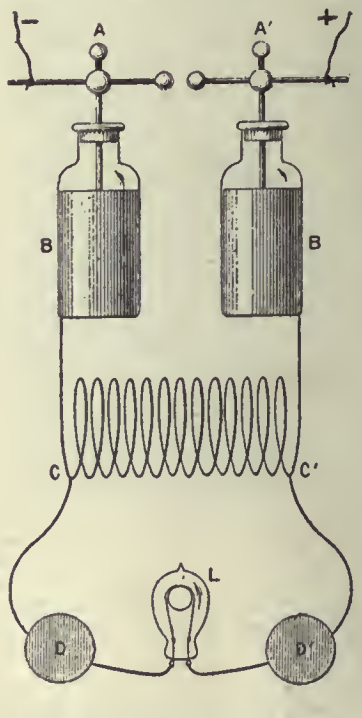


Fig. 7. Arrangement of Leyden jars for producing alternating currents of great frequency (d'Arsonval-Hertz).

great it can be used only by the aid of a very excellent and well graduated rheostat of large resistance. When judiciously employed, I find it more effective than any other form of electrical current in the relief of pain and all other symptoms arising from a hyperesthetic state of the nerves or nerve centers. I have found it especially serviceable in the relief of pelvic pains and the various forms of headaches. It is also especially valuable in the relief of various disorders of sensation included under the general term, paresthesia. The pe-

culiar numb, tickling, crawling and other sensations of which neurasthenic patients often complain, are almost certainly relieved by it. The same is true of the great variety of peculiar head symptoms complained of by neurasthenic patients—and women suffering from pelvic disease. Most of these symptoms, I am satisfied, are the result of reflex disturbance of the abdominal sympathetic, which I believe is especially favorably influenced by the sinusoidal current.

By careful management the electrodes may be applied to the head, and a current capable of producing decided effects passed through the brain in different directions without the slightest pain or other than the most agreeable sensations. I have never seen the slightest unpleasant effect from the application of this current, while it is not an uncommon thing to find patients who seem to possess an idiosyncrasy against the faradic, and in some instances, although much less frequently, against the galvanic current. In a good many thousand applications I have never yet found a patient who has experienced any ill effects from the application of the sinusoidal current. The only inconvenience I have ever observed, has been an occasional muscular soreness when a too vigorous or too prolonged application of the slowly alternating current had been employed, but this is only the effect of the gymnastics, and should not be attributed to the electrical current *per se*.

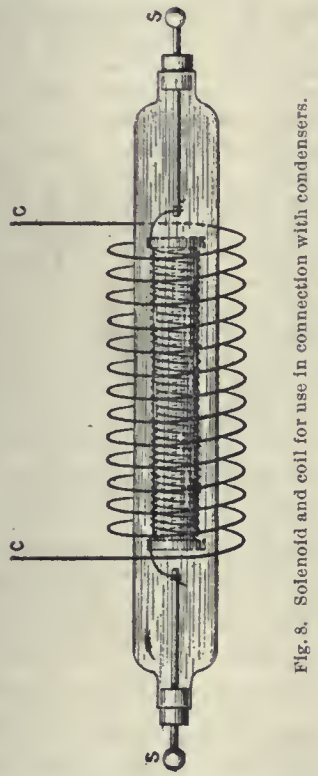


Fig. 8. Solenoid and coil for use in connection with condensers.

A very important advantage of this sinusoidal current, is the fact that in its employment one may deal with elements as accurately known and capable of being as accurately dosed as in the use of the constant current. My apparatus is provided with a permanent magnet, so that the only element which it is necessary to determine is the rate of motion, which is easily ascertained by means of the indicator commonly employed for this purpose. In the apparatus employed by D'Arsonval the source of induction is an electro-magnet and requires accordingly, a determination of the amount of current used to excite the magnet as well as the velocity of the apparatus. In this respect the sinusoidal current possesses an immense advantage over any form of faradic current.

The current produced by a faradic machine is subject to continual modifications from variation in the strength of the actuating battery, and in the adjustments of the rheotome, as is well shown by the tracings which I present with this paper. (Figs. 6 and 7.) I have made a large number of tracings of the currents produced by various forms of faradic apparatus and under various conditions, and have made some experimental attempts with a view of securing an improvement upon the ordinary form of induction apparatus, but I have thus far met with little encouragement of success. I believe the faradic machine is inherently faulty as a scientific electrical apparatus for medical purposes. The rheotome is a fatal element of weakness, changing the character of the current with the slightest modification and often, as every medical electrician knows, in a manner which, if the thing were intelligent, must be regarded as purely whimsical.

The invention of Faraday answered an excellent purpose during the embryonic period of electro-therapeutics, but now that we have learned the value of the milliampèremeter, the voltmeter, and the coulombmeter, and have acquired methods of precision in our electro-therapeutic procedures, the faradic battery, like the shocking machines of a half century ago, must give place to a more precise and more reliable instrument. The effort to overcome the weaknesses of the induction coil by the provision of some means of measuring the current obtained from it, is a task as useless as it is difficult, since nothing else than a graphic representation of the curves produced by it could enable a practitioner to regulate the machine twice alike, and such a method of regulation would be altogether too cumbersome and dangerous for practical use.

In the group of tracings shown herewith, which are intended to illustrate the effects of changes in the rheotome, no change whatever was made in the apparatus, except such as results from turning slightly in or out the adjusting screw of the rheotome. The increased or diminished amplitude of the curves produced are an indication of the changes in the potential current resulting from the changes referred to. There seems to be no method by which fluctuation in the character of the current can be remedied, and consequently the faradic machine, in the opinion of the writer must sooner or later be recognized as too rude an appliance to be of value in scientific electro-therapeutics, or, at least, to be of use only in a limited class of cases in which mere excitation is the object to be accomplished.

I do not profess to have yet made an exhaustive study of the subject to which this paper is devoted. My time is very fully occupied with professional duties, and it is only now and then that I can spend a few midnight hours in scientific researches. I shall continue the study of the subject, however, and from the indications obtained from some experiments which are not yet completed, I feel justified in promising some further, and perhaps more interesting results at some future time.

I present, in connection with this paper, a number of tracings which I have selected as typical, from a great number of tracings which I have made with my electrograph, and which I hope to have the pleasure of exhibiting in operation before the members of the Society at a convenient season.

(*To be Continued.*)

NECROLOGY.

R. S. Addison, M.D., of Chicago, February 21.

Austin Peggs, M.D. of Ossian, Iowa, January 29.

Jacob A. Fink, M.D. of Commerce, Mich., February 12, at Pontiac.

B. Brown Williams, M.D. of Meadville, Pa., February 15 aged 79 years.

J. M. Lathrop, M.D. of Dover, Ohio, February 9, of pneumonia.

H. C. Roberts, M.D. of Nashville, Tenn., February 17. Dr. Roberts was four years in the Confederate service during the war of the Rebellion.

Geo. W. Weeks, M.D. of New York City, February, 15, aged 29. He was a native of Norwalk, Conn., and was graduated at Bellevue Hospital Medical College.

Frederick K. Sprang, M.D., of Reading, Pa., died February 17, aged 57 years. He was a graduate of Jefferson Medical College of Philadelphia, in the class of 1860, and was a native of Oley, Berks County. He was a member of the Board of Medical Examiners of Berks County.

Amasa F. Kinne, M.D., who was born in Vermont in 1813, and moved to Ypsilanti in 1850, died in that town Feb. 14.

Oliver P. James, M.D., of Doylestown, Pa., died at that place Feb. 19. Dr. James served one term in the State Senate and was once nominated for Congress. He was president of Doylestown Borough Council for a number of years and treasurer of the Bucks County Fair. He was treasurer also of the local Masonic Lodge.

Benjamin S. Codman, M.D., of Boston, senior member of the firm of Codman, Shurtleff & Co., dealers in dental and surgical instruments. died Feb. 22, aged 78 years. He was graduated from the Harvard Medical School with honors. After leaving he practiced dentistry for some years, but about 1855 he, with A. M. Shurtleff and F. O. Whitney, established the firm which exists to-day.

Deaths of Eminent Medical Men.—Dr. John Burnley Walker, medical officer of health, to the combined districts of the Colne Valley, Yorkshire, England—Dr. Edward Strobl, Professor of Pharmacology and Hygiene in the University of Strassburg, aged 79.—Dr. Nebinger, Chief Surgeon to the Municipal Hospital, Bamberg—Dr. Arthur Ravara, Surgeon to the St. José Hospital, Lisbon, and to the King of Portugal, from the bursting of an aortic aneurism while he was examining a patient before performing ovariotomy; and Dr. Pierre Joseph von Benedan, who was Professor of Comparative Anatomy and Zoology, for more than sixty years in the University of Louvain, and one of the leading scientific lights of Belgium, aged 85 years.

Toland Jones, M.D., of London, Ohio, died February 18. Dr. Jones was born Jan. 10, 1820, being at the time of his decease a little over 74 years of age. He was educated at the Granville College and at the Ohio Medical College, Cincinnati. In 1862 he enlisted in Company A, One Hundred and Thirteenth O. V. I., of which he was made Captain. In 1864 at the battle of Kenesaw Mountain he was promoted to the colonelcy of his regiment, which belonged to the Second Brigade of the Second Division, Fourteenth Army Corps. He represented this district in the Ohio Senate in 1866–68. He has also been President of the Madison County Medical Society and in 1888 was President of the Central Ohio Medical Society. In the same year he was also presidential elector and was chosen to carry the Ohio returns to Washington. In 1889 he was appointed Surgeon General, with the rank of Brigadier, on the staff of Governor Foraker, to fill out the unexpired term of Adolphus E. Jones, deceased, of Cincinnati.

Martin Luther, M.D., one of the most eminent physicians in Pennsylvania, died at Reading, February 22, after an illness of three months with influenza and complications, aged 68 years. Dr. Luther was born March 16, 1826, at New Holland, Lancaster County, Pa. He was a son of Dr. John Luther of New Holland, for many years a prominent citizen and influential member of the Masonic fraternity. His grandfather was also a physician. Dr. Luther was educated in the best academies of Chester and Berks Counties, began the study of medicine in the office of his brother in New Holland, and was graduated from the Jefferson Medical College in 1848. For two years succeeding his graduation he practiced with his brother. In 1850 he removed to Reading, and soon after his location there he became one of its leading physicians. He served as physician to the Berks County Almshouse from 1853 to 1855, and the two succeeding years was physician to the county prison. In 1862 he was appointed Surgeon-in-Charge of the United States Army Hospital at Reading, and remained in that position until the Hospital was discontinued. In 1864 he served as Surgeon to the Board of Enrollment of the Eighth Congressional District, and acted in that capacity until the close of the war. He took a prominent part in establishing the Reading Dispensary in 1868, and was an influential member of the Berks County Medical Society, was for several years its President, and a number of times its delegate to the State and AMERICAN MEDICAL ASSOCIATION. Dr. Luther was a member of the Academy of Sciences of Philadelphia, and of the Reading Board of Health. He had an extensive practice and was a good surgeon. His ability was at all times recognized by the local courts, and his testimony in questions pertaining to his profession was always received with the most profound respect. He was a kind and careful physician, and to those who had his confidence he was the most companionable of men—a man of extensive reading, and a keen observer of men and affairs.

Dr. Luther was the youngest of three sons, all of whom had been noted for skill and ability, and in his death the genealogy of the family ceases—a family of doctors who had been prominent in Pennsylvania for over one hundred years.

Obed Harvey, M.D. of Galt, Sacramento County, Cal., died of apoplexy Jan. 17, 1894. He was born in Wayne County, N. Y., Sept. 7, 1825. He commenced the study of medicine with private tutors, attended lectures at Rush Medical College, Chicago, and at the Rock Island Medical College, Ill., from which he graduated in 1849. In 1850 he went to California, settling in Placerville, Eldorado County. For some years, in company with Dr. Asa Clark, he had charge of the county hospital there, and the two were the leading physicians of the county. In 1857 he went East, and was on the steamer, *Central America*, when she was wrecked in a gale and sank September 12, off Cape Hatteras. The Doctor was in the water from 8 o'clock at night until early morning, when a sailing vessel chancing to come upon the scene, he was rescued with the few who had survived. On reaching New York he was highly praised for the courage he had shown, and for the professional services and assistance he had given the passengers. In that city he continued the pursuit of the object of his visit, which was to improve his professional knowledge under the superior facilities to be found in a large city. For this purpose he connected himself with the Medical Department of the University of the City of New York, from which he received an honorary degree in March, 1858. He attended the annual meeting of the AMERICAN MEDICAL ASSOCIATION in 1858, as a delegate from the California State Medical Society, and is said to be its first representative in the National body. Returning to California, he resumed his practice at Placerville, investing his gains with sagacious forecast. About 1869 he removed to Sacramento County and laid out the town of Galt, where, and in the vicinity of which, he became the owner of a large estate, covering an area of between five and six square miles. He had a very extensive acquaintance with the distinguished men of the State; and his coöperation was frequently sought in projecting important public improvements and providing charitable institutions. He was many years ago a member of the Board of Directors of the State Insane Asylum at Stockton and was President of the Board at the time of his decease.

Dr. Harvey was a noticeable person among his fellow men. A figure of standard height and proportions, graceful and dignified in his bearing, a pleasing face, his was a comely and fitting physique for the intellectual strength, moral purity, and the humane disposition which characterized him. He was married in May, 1863, to Miss Susan M. Hall, an estimable lady of varied accomplishments and high social standing, who survives him. He leaves a son and daughter who are admired examples of a faultless heredity and innate refinement, crowned with a liberal education, recently completed in Eastern institutions. G. A. S.

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SATURDAY, MARCH 3, 1894.

THE PHONOGRAPH IN AUSCULTATION.

In that charming address written by the late AUSTIN FLINT, which, alas! he did not live to deliver ("Medicine of the Future") in writing of the increase of knowledge of the normal and abnormal actions taking place within the body, writes:

"It seems to me certain that the principles of the telephone will, by-and-by, be applied to intra-thoracic respiratory and heart sounds, so that they will be transmitted to the ear with more distinctness than they now are with the binaural stethoscope. The healthy and morbid sounds will then be so easily observed as to render the physical diagnosis of pulmonary affections in all cases a very simple problem. More than this, the clinical teacher may be able to demonstrate auscultatory signs to a class of medical students seated in the lecture room or hospital amphitheater. The same is to be said of the auscultation of the heart. I will go further, and say that intra-thoracic sounds may be transmitted from the patient to the physician. Again, and still further, the sounds from the chest of a patient may be phonographically registered, transported never so far, and made available after an indefinite period."

The distinguished author then mentions the bellows murmur over the fontanelles; those of the arteries and veins; the fœtal sounds; the intestinal borborygmi; the noises of gall stones; the musical tone of certain hydatids, to point out that there are more extended fields of auscultation than that of the thorax, and concludes:

"It can hardly seem an extravagance to predict, then, of the future development of auscultation to one who has listened with the aid of the microphone, to the footsteps of a fly."

The words of PROFESSOR FLINT are rapidly being realized through the marvelous developments of electricity, by the great EDISON. That wonderful man, whom the electric fluid seems almost to obey, as the genii of the lamp obeyed ALADDIN, has already developed the phonograph so that its resources are being utilized, and we have no doubt that fuller practice and experiment will diminish its defects, and fully establish its place as a valuable aid to diagnosis.

THE OLD-TIME TREATMENT OF STRICTURE OF THE URETHRA BY CAUSTICS.

Nowhere are the revolutionary possibilities of surgical practice more strikingly illustrated than in the comparison of bygone with present methods of treating urethral stricture. While in an old book store we recently found a book descriptive of a method of treating strictures by caustic applications entitled, "An Improved Method of Treating Strictures in the Urethra," by THOMAS WHATELY, M.R.C.S., etc., published in 1804. In view of the comment on the treatment of stricture by caustics appearing in the latest work on urethral stricture, in which the method is mentioned as a relic of surgical barbarity unworthy of serious attention, the pretensions of MR. WHATELY'S book are worthy of notice.

It would seem that this author had a long standing feud with the celebrated EVERARD HOME—the English surgeon—on the subject of the proper treatment of urethral stricture. MR. HOME argued that there was but one treatment for this condition, viz: Burning through the obstruction with lunar caustic, which *lapis infernalis* he fixed on the end of a bougie.[1] MR. WHATELY, on the other hand, put forward the application of pure caustic potash, "kali purum," as the ideal method. The champion of the "kali purum" naively insinuated that the only cases in which his method failed were such as had been through a course of HOME'S treatment. In speaking of cases in which he had attempted to perform a preliminary dilatation with small bougies he says: "Sometimes, indeed, there has been great difficulty; but the only cases where I have not been able to succeed or have met with uncommon difficulty, have been almost exclusively those which had previously been treated with caustic according to MR. HOME'S method."

To moderns the criticisms passed upon MR. HOME'S method would seem to be well founded, although savoring of a pot and kettle argument.

WHATELY'S method was as follows: Having moderately dilated the stricture by bougies, as a preliminary measure, a wax bougie was selected which would just pass the stricture. In the extremity of this soft bougie a bit of "kali purum" the size of a pin's head or smaller was embedded; the instrument was now greased with "hog's lard" and passed quickly down to the face of the stricture. By steady, intermittent and moderately firm pressure the formidable bougie was carried through the obstruction. This process was repeated every seven days, larger

[1] Mr. Home's book, published in 1795, was translated into the German in 1800.

and larger bougies being used, until the stricture was "cured." The operation was said to be quite innocuous. "In the greater number of cases in which the caustic is thus applied, even in the first instance it gives but little pain at the time of its application. A slight scalding in making water, and a trifling discharge during the first day or two, are, however, commonly produced by it."

WHATELY bases his opinion of the necessity for caustic applications largely upon the important observation that the urethra is not merely contracted, but is actually diseased at the point of stricture.

"I have observed in several cases of stricture that when the point of a bougie touches, though in a most gentle manner, the anterior part of the contraction, some drops of blood have immediately issued from the part. This circumstance favors the opinion that a stricture is not merely a contracted, but also a diseased portion of the urethra. A stricture being likewise according to MR. HUNTER, the hardest part of the urethra, and according to MR. HOME, a thickened contraction of the inner membrane, is another circumstance which corroborates the opinion above mentioned. Such an alteration from the natural state of the membrane could not be produced by a mere contraction of its fibers; the change must therefore be occasioned by disease."

One of the objections urged against lunar caustic is that the sloughs which it produces "not infrequently plug up the strictured orifice and produce suppression of the urine." HOME is quoted by WHATELY as observing a slough an inch in length in one of his own cases. WHATELY attributes bleeding during his operation "entirely to the bougie, and not to the caustic."

WHATELY'S own comments upon his method are quite sufficient to impress one with its barbarity. The modern surgeon will have difficulty in comprehending how men of ordinary intelligence and knowledge of pathology could fail to appreciate the barbarity of the caustic treatment of stricture. How WHATELY and HOME—both of whom were surgeons of repute and vast experience—could fail to do so is a mystery, yet at the same time a forcible illustration of the absurdity of the dogma of infallibility which makes us slaves to authorities. It will be remembered that that master mind, HUNTER, evolved a theory of "the venereal disease"—which embraced all forms of venereal infection,—based upon a single ill-starred clinical observation of the effects of inoculation of syphilis on his own person.

WHATELY says that, "by strictly observing these rules respecting the interval between each application of the caustic, we give time for the separation of the slough and the cicatrization of the sore (!!) occasioned by the action of the kali, and hereby the danger of hemorrhage is in a great degree prevented; a consequence, however, which we could not guard against, were the caustic to be applied upon a slough formed by a previous application of this powerful agent."

After thus blandly forgetting the mischievous effects of putting true cicatricial tissue where none previously existed in the urethra, and having confessed the grossest kind of malpractice, our author goes on to say that bougies should not be introduced between seances lest hemorrhage be caused thereby. According to WHATELY, the only way to curb the death dealing bougie and inhibit its properties of evil, was to arm it with a piece of caustic. He quotes MR. HOME as having had a case of perineal fistula in which the urine came away partly by the perineum and partly through the rectum. "In this case the caustic bougie passed into the rectum." He neglects to state what happened to the patient's rectum, but the bougie was rendered harmless by being tipped with caustic.

Our author, however, redeems himself somewhat by concluding his chapter on operative manipulations, by taking "some notice of the means to be employed for relieving suppression of urine should this occur from the use of caustic or any other cause."

A very interesting observation was made by WHATELY, viz.: Epididymitis occurred oftener after the passage of the ordinary bougie than after that armed with kali. The modern surgeon, with an appreciation of the antiseptic properties of caustic potash, can readily understand this observation. Like many others of his time, WHATELY came against the principles of wound-infection without understanding them.

In common with every hobbyist, WHATELY marshals a formidable array of successful cases in support of his method; these cases would look well if paralleled with some of our modern reports of "electrolysis in urethral stricture." On reflection we are glad that urethral defects due to malpractice can not be transmitted by heredity. A large portion of mankind might otherwise be compelled to seek methods of micturating other than *per vias naturales*. Taking one consideration with another, the lot of the urethra of a hundred years ago "was not a happy one." But after all, the errors of the old-time surgeons had a ring of honesty and true conviction that made their faults quite tolerable as compared with the mysterious ways of some modern surgical hobby riders. One can see at a glance what they intended and can judge of the merits of their methods by their published statistics. The modern originator of surgical procedures, however, has too often a way of reserving just enough of the details of his methods to necessitate referring our cases to him. He has a custom also of reporting a large number of cases of patients who live in the next county or just over the State line out of reach. Verily, the errors of the past generation of surgeons are of more value to surgical science than many of the alleged achievements of to-day.

THE LAW CREATING A MEDICAL COUNCIL AND MEDICAL EXAMINING BOARDS IN PENNSYLVANIA.

After ten years continuous agitation the Legislature of Pennsylvania passed a law establishing a Medical Council and three State Boards of Medical Examiners, May 18, 1893. Pennsylvania was behind many of her sister States, as far as medical legislation was concerned, but the law just enacted contains provisions which, if judiciously and energetically carried out, will exercise a greater influence on medical education in the United States than any legislation which has yet been accomplished. While it is true there are minor defects in the law, these can be overcome by intelligent administration. The Governor has recently appointed the members of the three State Boards of Medical Examiners as the law takes effect March 1, 1894.

The Act under which the appointments are made provides for the establishment of a Medical Council, consisting of the Lieutenant Governor, the Attorney General, the Secretary of Internal Affairs, the Superintendent of Public Instruction, the President of the State Board of Health and the Presidents of the three State Boards of Medical Examiners. The Boards of Examiners are appointed from physicians of ten years practice, seven from each of the following named Societies, viz: the State Medical Society, the "Homeopathic" State Medical Society, and the "Eclectic" State Medical Society. Each of the Boards must hold two or more stated or special meetings every year for the examination of all persons who from the first of next March propose to enter upon the practice of medicine in that State. The Boards are required to submit the questions proposed to be asked applicants to the Medical Council, and from these questions the Council will select the queries for each examination, except that in the departments of therapeutics, practice of medicine and materia medica, the questions shall be based upon the doctrines and teachings of the "school" selected by the candidate. After passing the examination before the proper Board the results are submitted to the Council, which having satisfied itself that the applicant is duly qualified for the practice of medicine, issues a license to practice, to the candidate, and a record is made. This record is open to inspection in the office of the Council, and, on presentation of the license to the Prothonotary of the county in which the physician desires to practice, he or she is entitled to registration in accordance with the provisions of the law regulating medical practice already in force.

Applicants who have received their medical degrees after July 1, 1894, must have studied medicine for at least three years in some legally incorporated medical college, and after July 1, 1895, must have pursued medical studies for at least four years, including three years attendance upon some legally constituted medical college.

Several of the States, as a qualification for examination, require attendance on three annual courses. These are Minnesota, North Dakota, Washington and New York. Therefore this requirement of four years' study goes farther than any direct legislative enactment that has yet been passed and sustains the position taken by the Illinois State Board of Health in July, 1887, in refusing to recognize the diplomas of any medical college, after the session of 1891 and 1892, which did not require three annual courses of lectures and four years of study.

A number of the leading schools have already required four annual courses of lectures; and with this additional incentive it is safe to assume that all the medical colleges in the United States, by the year 1900, then in existence will require four annual courses and thus remove, to a great extent, the stigma heretofore resting on medical education in the United States.

If the applicant fails in his first examination, he may be re-examined after six months have elapsed and within two years. Physicians licensed after examination by State Boards of Examiners or State Boards of Health of other States, where the standard of acquirements is substantially the same as that required in Pennsylvania shall receive a license from the authorities without further examination. This feature is now introduced for the first time in medical legislation in this country, and is eminently just and wise. The requirement of a fresh examination each time that a practitioner desires to take up his residence in another State would necessarily become oppressive and onerous.

The Act does not affect physicians now registered in their respective counties under the Act of 1881, who thus register before March 1, 1894, nor does it apply to physicians from other States or counties called to consult with registered physicians. This latter provision is also broader and more liberal than that which obtains in nearly all the other States.

It will be observed that the distinctive features of this law as compared with those of other States are the establishment of the Medical Council, which, however, corresponds in part to the Board of Regents of the University of the State of New York, and the recognition of licenses granted by similar bodies in other States. This legislation is sufficiently comprehensive to protect the public from professional incompetence, and encourage the attainment of the knowledge requisite, without being open to the criticism of being illiberal and exclusive.

DEAD DRUNK.

The death of JOHN MARKEY a few days ago in Chicago from a fractured skull, he having been run into

by a street car, and booked for drunkenness by the police, is another evidence of the stupidity of the average policeman; and the careless disregard for life that obtains in this country among police officers. An inquest was held. "The intelligent coroner's jury heard the testimony of the intelligent officers, and rendered the intelligent verdict that the death was the result of acute alcoholism." His wife was not satisfied, as she knew her husband was not a drinking man, and she induced the coroner to have a post-mortem made, when it was found that his skull was fractured. A second inquest was held, which resulted in a verdict in accordance with the facts.

A man is found in the streets unconscious, no matter whether it is due to apoplexy, fracture of the skull or any lesion of the brain; he is thrust into a cell to sleep off his supposed drunk (often to be found dead in the morning) or for the same reason not received at a hospital, when if he had been properly cared for his life might have been saved. In some cases, no doubt, there may have been evidence that the party had been drinking, and probably had received his injury while intoxicated, but this is no reason why he should be neglected. The police should be instructed, so that at least when in doubt a medical man be called to see the case. The judgment, "dead drunk," is too often literally true. Instances of this character have often occurred, and within the last six months twelve cases have been noted in different cities, and it is high time that something should be done to stop it. Unfortunately, the police are not alone in this disregard for life, as two months ago two ambulance surgeons of New York committed the same mistake—we might almost say the same crime.

CONSTITUTIONAL RIGHTS OF PERSONS CHARGED WITH INSANITY.

Attention has already several times been called, through the columns of the Journal, to the fact that the Supreme Court of Minnesota has held to be unconstitutional certain sections of that State's insanity law enacted in 1893. There is, however, a very important principle involved in this decision which merits further notice, as being of universal application.

Every one has either known, or read, of cases where the greatest wrongs have been, intentionally or unintentionally, perpetrated, by the unscrupulous and wickedly designing, or criminally indifferent, upon persons charged with insanity. History is full of instances where it would seem as if any person was perfectly defenseless against the most manifestly trumped-up charges of insanity.

This Minnesota case, of State v. Billings, better known as the "Blaisdell Case," is not one of this sort, but it furnishes the opportunity for the court to declare that, while the State should take charge of such unfortunates as are dangerous to themselves and to others, not only for the safety of the public, but for their own amelioration, due regard must be had to the forms of law and to personal rights. To the person charged with being insane to a degree requiring the interposition of the authorities and the restraint provided for, there must be given notice of the proceeding, and also an opportunity to be heard in the tribunal which is to pass judgment upon his right to his personal liberty in the future. There must be a trial before judgment can be pronounced, and there can be no proper trial unless there is guaranteed the right to produce witnesses and to submit evidence.

Any method of procedure, which a legislature may, in the uncontrolled exercise of its power, see fit to enact, having for its purpose the deprivation of a person of his life, liberty or property, is in no sense the process of law designated and imperatively required by the Constitution. Any statute having for its object the deprivation of the liberty of a person can not be upheld, unless it absolutely secures to the person the right to have the tribunal proceed by "due process of law," which, as above intimated, requires notice, hearing and judgment.

Of the Minnesota statute held to be invalid, it is not necessary to say more than that it was so constructed that the opportunity to be heard in defense was not guaranteed to the person charged, and was not so framed as to compel a hearing before condemnation, or a trial, under the general forms of law, before judgment might be pronounced.

Another very remarkable thing about this Blaisdell case, is that it was not until upon the rehearing of it, which was decided Jan. 25, 1894, that the court, or the parties, seemed to know of the existence of this now condemned law. On the first hearing, which culminated in an opinion handed down Dec. 13, 1893, the commitment of Mrs. Blaisdell was considered wholly with reference to the old law, and held illegal.

BASES FOR EXPERT OPINIONS.

The Supreme Court of Nebraska holds in the case of the Omaha & Republican Valley Railway Company v. Brady, decided Jan. 16, 1894, that the opinion of a medical expert may be based: 1, on his acquaintance with the party whose condition is under investigation; 2, upon a medical examination of him which he has made; or 3, upon a hypothetical case stated to the expert in court. Some latitude must necessarily be given in an examination of medical experts and in the propounding of hypothetical questions, the better to enable the jury to pass upon the question submitted to them. It is the privilege of counsel in such cases to assume, within the limits of the evidence, any state of facts which he claims the evidence justifies, and have the opinion of experts upon the facts thus assumed.

CORRESPONDENCE.

LETTER FROM EUROPE.

Major Girard, Surgeon U. S. Army, to Professor Senn.

No. I.

SEA VOYAGE—BREMEN—GÖTTINGEN— DR. HILDEBRANDT—PROFESSOR KOENIG AND THE GÖTTINGEN CLINIC—PROFESSOR ORTH.

GÖTTINGEN, Feb. 9, 1894.

Dear Dr. Senn:—In compliance with your request and the invitation of Dr. Hamilton, I will commence a series of letters, relating what, in my travels, I may find of interest to the profession. Owing to my appointment as delegate from the War Department to the International Congress at Rome, my professional tour in Germany has to be somewhat curtailed, but I hope to supplement this loss by an account of my experiences in the "Eternal City."

As a preface I desire to say that I do not expect or hope to compete with your inimitable style in the "Four Months Among the Surgeons of Europe." My account will also not be in chronological form, hence the dates of my visits and their durations will be omitted.

The passage in the steamer gave me an opportunity to test the efficacy of the treatment of naupathy recommended by Dr. Skinner in his excellent article in the *New York Medical Journal* of last December. I had provided myself with the necessary solutions of atropin and strychnia, and that of caffein. Unfortunately, I met a ship's surgeon who either was not, or did not want to be, a believer in any treatment for seasickness, and consequently I was not given the privilege of experimenting on the steerage passengers, but I had a number of personal friends in the first cabin, who gladly availed themselves of any means of escape from the horrible malady. Among them I noted particularly three very distinct cases: One where a lady, by means of the injections, was enabled to go to table, while she had before suffered from violent headache and intense nausea. The passage being very stormy, the treatment had to be continued almost daily. The other, a lady who had suffered from endless vomiting day and night for four days, was almost miraculously relieved by one injection of half a dose, and although she was not able to appear on deck until near the end of the voyage, could partake of her meals in her stateroom.

The third case, an elderly lady suffering from excruciating headache and vomiting up to hematemesis, after one injection was at once relieved.

I am sorry that I did not have a better opportunity of testing more fully this treatment, but with pleasure add this testimony to that of Dr. Skinner, holding out some hope to the sufferers on the sea.

Your introduction to Dr. D. Kulenkampff of Bremen, led to a very cordial reception. The Doctor took great pains to exhibit to me the various hospitals, many of them the outcome of private charity, of which Bremen may well be proud. The "Städtische Krankenhuastalt" especially is almost perfect in its appointments—great cubic capacity of beds, floors laid with linoleum or cement, direct and indirect heating, ventilation by expiration, wide porches, two detached disinfecting rooms—one by dry heat, the other by steam—detached, well ventilated and well appointed kitchen and storerooms, electric dynamos, etc. The operating room is tiled on the walls, the floors marble terrazo, such as the surgeons deemed a necessity a few years ago. This is by the surgeons themselves now considered a not indispensable luxury, which is replaced by thorough individual asepsis. The appliances for sterilization are complete.

In the other hospitals, the old methods of heating by means of large stoves and natural ventilation are mainly relied on.

On my arrival in Göttingen I was very kindly received by Dr. Hildebrandt, formerly first assistant to Prof. Koenig, and now one of the teachers of surgery in the University. He introduced me to the great surgeon (Koenig), whose name in Northern Germany is mentioned in the same breath with von Bergmann and von Billroth. Speaking of the latter, I learned yesterday with great regret that, after a brief illness, he had passed to the unknown country—a loss to surgery which you no doubt greatly regret.

A few notes from Prof. Koenig's clinic may be of interest. He presented a young man of anemic countenance suffering from tubercular synovitis of the knee-joint. The limb was somewhat atrophied. The circumference of the knee slightly enlarged, motion fair to about 35 degrees. I had learned in Bremen that a reaction had taken place in Germany with regard to operative procedures in tubercular joint diseases, and that the knife was rarely resorted to. I expected to see an injection of iodoform emulsion, but found that a reaction of the reaction had taken place in Prof. Koenig's clinic. He said, that while in children or wealthy people non-operative treatment might be justifiable, until indications for operation were absolute, in the working class, who expected to be fitted for bread-earning in the shortest possible time, such a procedure was not justifiable. He predicted that he would probaby not even find affection of the cartilage, but expected from the thickening of the synovial sac, extensive tubercular deposits in the same. As to the method of operation, flaps, etc., he said that as to eventual success they made no difference whatever. He chose Hahnemann's method of incision across the patella and division of it by the saw after application of the elastic bandage and Esmarch's tourniquet. He then very carefully dissected off the synovial sac, including the mucous bursa, removed with the saw the epiphyses, trimming off the edges with a small sharp knife, united the patella by means of a shoemaker's awl and catgut, and periosteal continued catgut suture, placed a drainage tube in either side of the joint and beside the extensor tendon, enveloped the whole in a wood wool dressing and then placed it on a posterior splint. After this the constricting band was removed. The operation took an hour.

The next operation was an amputation of the thigh for recurring tubercular disease, which originally appeared to have been started by an injury to the foot with eventual development of tubercular foci in the bones of the tarsus, then in both elbows, finally in the knee joint. The operation was performed after the clinic by one of the senior students under the direction of the Professor. Elevation of limb, elastic bandage and constrictor (which, by the way broke during the operation and had to be replaced without perceptible increase of flow of blood, owing to rapid pressure on femoral), flap. The periosteum was retracted, but no flap made or fastened. Single ligatures. One of these slipped off toward the end of the proceedings, showing the wisdom of your method of double ligatures.

The next operation was for epispadias, made by the Professor himself,—the second step in the procedure, the first having brought about closure of the canal. A circular flap around the opening, liberated to the bottom of the urethra was folded over a catheter and united in the fashion of the Lembert suture. The defect was covered by a flap brought down from above the urethra, presumably not encroaching upon the parts eventually covered with hair and the whole held in place with catgut stitches.

The operations were performed under chloroform, although since the last Congress of Surgeons, ether more and more takes its place, not with great willingness, how-

ever, on the part of the German surgeons. In the last case ether was used at first, but owing to spasmodic action of the abdomen, flooding the field of operation with urine, abandoned and replaced by chloroform, which speedily brought about an even narcosis.

A resection of the hip-joint—without chain saw—was done with great dispatch and knowledge of the landmarks used and was carried into the interior of the pelvis through the acetabulum to remove tubercular deposits.

As to Prof. Koenig, he is a man apparently of 60, with a determined face, but generally kindly manner.

The buildings of the clinics are all new, and in every respect up to modern views in such matters. None but cases useful for instruction are admitted, and the chiefs of the several clinics are autocrats in this question. Prof. Erb has charge of the internal clinic; Prof. Orth of the Pathological Institute, which is the roomiest, best adapted building of its kind I have ever seen. A new work by Prof. Orth's pen has just appeared on "Diagnostics based on Pathologic Changes." It fills a want. Prof. Rosenbach, a very urbane gentleman, the discoverer of staphylococcus and streptococcus, has charge of the Surgical Policlinic. I believe that the facilities of Göttingen for either study or post-graduate investigations are equal to any university, and the absence of distractions in the town should, it appears, lead to studious habits. I regretted, however, to find that the native students did not avail themselves as they should of the splendid opportunities offered them, and that so many empty seats must have a depressing effect on the enthusiasm of the teacher.

My next will be devoted to Wurzburg.

Sincerely yours, A. C. GIRARD.

"Superfluous Spectacles."

KEOKUK, IOWA, Feb. 24, 1894.

To the Editor:—Superfluous spectacles are those prescribed by incompetent persons. Who are they? Surely not the educated physician who, after years of preparation, drops into ophthalmology by a sort of natural affinity; surely not the man or woman, who, when examining the eye, sees not only an optical apparatus but a living being behind it. No. The incompetents are those half-hatched and abortive products ground out by the so-called "ophthalmic colleges." These "colleges" are engaged in manufacturing opticians out of jewelers and oculists out of jays. Six weeks' time suffices in either case to produce a diploma-bearing individual who goes forth to prey upon the credulity of the populace. These are the persons who are to blame for "superfluous spectacles."

Every educated physician engaged in ophthalmic practice, knows that many cases of asthenopia in which refractive error exists, are not cured by glasses. The glasses are blamed, the oculist denounced, and regular medicine is brought into disrepute, all because too much confidence has been placed in the curative power of the lenses. In these very cases, glasses are needed because of the existence of error. The fact that asthenopic symptoms are not relieved by lenses should not lead us to regard such lenses as "superfluous spectacles." Glasses will cure many strange symptoms—but they are not omnipotent. Often change of air, of occupation or the treatment of nasal disease; often the use of tonics and other constitutional treatment will be necessary. It is in such cases that the "eye oculist" of six weeks' preparation will fail.

What is the remedy? *Abolish the "Ophthalmic Colleges."* If they are valuable, why not establish rectal, genito-urinary, hepatic, stomachic and pancreatic colleges? Specialism in medicine has gone mad. JAMES MOORES BALL, M.D.

A Suggestion.

INDIANAPOLIS, IND., Feb. 15, 1894.

To the Editor:—Permit your correspondent to express the opinion that our JOURNAL might be more useful, more generally read and kept closer in touch with the general profession by having a department for "Gleanings From the Reports of Medical Societies."

To utilize this suggestion each society should elect or appoint a competent reporter or corresponding secretary, whose duty it should be to give a brief report of each paper read and case reported that the society deemed of sufficient importance to interest the general profession.

These short reports should be sent to the JOURNAL for the consideration of its editors who would doubtless be glad to give them to their readers, or such parts of them as they might think proper.

This plan would identify every society with the JOURNAL, and make the members of the different societies anxious to read what might be reported from their own organization, and the comments thereon, as well as the reports from other societies.

I hope this plan or some other, for the above reasons, will meet the approval of the JOURNAL and of the many intelligent and hard working local societies throughout the United States. JAMES W. HERVEY, M.D.

Idaho State Medical Society.

MOSCOW, IDAHO, Feb. 18, 1894.

To the Editor:—I notice in your roster of "State Medical Societies of America," that Idaho is omitted. We organized in September, 1893, *strictly in line* with the AMERICAN MEDICAL ASSOCIATION, as the Idaho State Medical Society. Our annual meeting is at Boise City September 5.

Officered as follows: W. W. Watkins, M.D., President, Moscow; C. L. Sweet, M.D., Boise City.

Very truly yours, W. W. WATKINS, M.D.

Medical Department University of Wooster.

CLEVELAND, OHIO, Feb. 19, 1894.

To the Editor:—Will you kindly correct a statement made in a recent issue of your JOURNAL, to the effect that Dr. F. C. Taylor was elected to the position of Secretary of our Faculty. Such is not the case. The writer is holding the position at the present time and has for some time previously. Very truly yours, H. W. ROGERS, M.D., Sec'y.

From Professor Osler.

BALTIMORE, MD., Feb. 20, 1894.

To the Editor:—For one, I fail to see anything *undignified* in the letter of Dr. S. Solis-Cohen, of which "Constancy" complains. It seemed to me admirable in every respect—frank, straightforward and to the point.

Yours truly, WM. OSLER.

Hay Fever.

ST. LOUIS, MO., February, 1894.

To the Editor:—I am specially interested in hay fever. Please inform me where I can get a list of resorts in the United States frequented by victims of that malady?

Respectfully, F. C. EWING, M.D.

Hypnotized.—Sandow, the strong man, whose muscular development was recently made the subject of an article in this JOURNAL by Dr. Lydston, has been successfully hypnotized in New York. While in that state it is said that he lifted a two-pound dumb bell with the utmost difficulty.

ASSOCIATION NEWS.

The Association Train will leave Chicago Monday, May 28, via Santa Fe R. R., Denver & Western, and Southern Pacific, for San Francisco via Denver, Colorado Springs, Leadville, Manitou, Glenwood Springs, Salt Lake, Ogden, Truckee and Sacramento. Returning, after the meeting, the train will pass through Sacramento and Northern California to Portland, thence east by way of the Northern Pacific R. R. to St. Paul. A stop over at Yellowstone National Park for those who desire it has been arranged, and it is understood that at several places on the journey there will be short stops. President Hibberd's party in a special car join the train at Chicago, and the St. Louis party are expected to join at Kansas City. From all points east and south, concentration on this train should be effected at Chicago and St. Louis.

Announcement.—The Committee of Arrangements has secured Odd Fellows Hall Building, corner Market and Seventh Streets for the Association meeting June 5, 1894. Assembly Hall, for the general meeting, has a seating capacity of 1,500; the twelve smaller halls, for Section work, range in capacity from 500 downward, with committee rooms adjacent.

The engagement carries three of these rooms on Monday for accommodation of associate organizations, as that of the editors, colleges, etc.

The banquet room on the ground floor 65x95 feet, will be devoted to exhibition purposes for which it is admirably adapted, and has been secured for the entire week, that exhibitors may have Monday in which to place their goods, and Saturday in which to remove them. Nearly half of the space is already taken, and others who desire to make a display of their goods under the most auspicious circumstances ever presented on the Pacific Coast, should lose no time in applying to the chairman for space.

Headquarters for the Association have been located at the Palace Hotel corner Market and New Montgomery Streets, only four blocks from the place of meeting. Here we have "Marble Hall," 36x40 feet as a registration room where work will begin on Monday, and "Parlor A" for Committee work. R. H. Plummer, Chairman.

San Francisco, Feb. 21, 1894.

Nebraska Excursion.—We observe that our Omaha brethren are being posted on the coming meeting of the Association. An excursion has been arranged from Omaha, by the editor of the *Clinic*, Dr. Wilkinson, who will speak of it in the next issue of his journal as follows. We hope that his party will join the regular train at Denver, so all may enter the Golden State together:

"The rates for the excursion will probably be made very low. They now are those of the Midwinter Fair, which will also then be in progress, and until July 1, and the special train of Pullman coaches to be directed at the will of the profession, whether desiring to go by way of Salt Lake City and return by way of a trip on the Pacific Ocean from San Francisco to Portland and from Portland back to the starting point, or vice versa is a consideration that a glance at the map will show compasses, in a general way, all points of interest, as only the Union Pacific can offer, in those expansive countries known as the 'Far West' and the 'Pacific Slope.'

"Arrangements will be effected by which many details of the trip may be made most convenient and interesting. The editor, who is to take charge of the excursion, will make use to this end of all suggestions sent to him.

"It is proposed that the train be directed first to Denver, in order that those desirous may see the city and also that this train may accommodate those having on other lines transportation as far as Colorado. The rates will be made proportionately less at this point.

"Concerning the American Medical Association: It is America's representative body of medical men. It is that society to which, practically, all the societies of the Union can and do center, because its voice is thoroughly democratic.

"This voice is the Nominating Committee, composed of one member from each State represented at the yearly meeting; this member of each State is chosen at the meeting by the members of his State present. This is the balance-wheel of the democracy of the American Medical Association.

"As to the meetings they are thoroughly cosmopolitan, from the immaculate and more formal evening dress, after the going down of the sun, of the men who hail from the 'cities,' to the conventional garment of the physician everywhere, all are on the same footing at all times, whether at the receptions- in banquet halls or at work through the days of the four-days session in the many different sections.

"To become a member of the American Medical Association is a very simple matter. Have the indorsement of the president or secretary of any society of which you are a member in good standing (State, district, etc.), and which considers itself in affiliation with your State Medical Society or for that matter, with the American Medical Association. (This affiliation means to have subscribed to the Code of Ethics of the American Medical Association.)

"Send this indorsement together with $5 to Dr. Richard J. Dunglison, Treasurer, box 1274, Philadelphia, Pa. In this way you become privileged in all the functions of the Association, together with becoming a subscriber to the Journal of the Association, which is to-day in the front rank of American medical weeklies.

"One more suggestion. If you desire a vote on the important issues (the Code is one of them) at the next meeting it is as well at this time that you join a State medical society and go as a delegate.

"Full particulars are given in this issue of the *Clinic* as to membership of the Nebraska State Medical Society and we hope next issue to present the routine in full of the Iowa State Medical Society.

"You will be given official papers as a delegate to the American Medical Association at and after the time of meeting of the State societies in May, if you will furnish the respective secretaries of these societies with the request at any time between now and the time of the annual meeting.

"So far as we know the following societies in Iowa and Nebraska are in affiliation with the American Medical Association:

"Nebraska State Medical Society, Iowa State Medical Society, Medical Society of the Missouri Valley, Tri-State Medical Society, Omaha Medical Society, Richardson County (Neb.) Medical Society, Northwestern Medical Society, Loup Valley (Neb.) District Medical Association, Central Nebraska Medical Society, Lincoln (Neb.) Medical Society, Otoe County (Neb.) Medical Association, Cherokee (Ia.) Medical Association, Sioux City (Ia.) Medical Society, Johnson County (Neb.) Medical Society, Western Association of Gynecologists and Obstetricians, State Line Medical Society, Cedar Valley (Ia.) Medical Society, Des Moines County (Ia.) Medical Society, Dubuque (Ia.) Medical Society, Washington County (Ia.) Medical Society, Warren County (Ia.) Medical Society, Wapello County (Ia.) Medical Society, Society of Physicians and Surgeons of Muscatine County (Ia.), Shelby County (Ia.) Medical Society, Scott County (Ia.) Medical Society, Ringgold County (Ia.) Medical Society, Polk County (Ia.) Medical Society, North Iowa Medical Society, Muscatine (Ia.) Medical Society, Mitchen County (Ia.) Medical Society, Medical Association of Northwestern Iowa, Austin Flint Medical Society (Ia.), Botna Valley (Ia.) Medical Society, Bremer County (Ia.) Medical Society, Buchanan County (Ia.) Medical Society, Capital District Medical Society (Ia.), Central District Medical Association (Ia.), Clinton County (Ia.) Medical Society, Dallas County (Ia.) Medical Society Delaware County (Ia.) Medical Society, Des Moines Valley Medical Association (Ia.), Eastern Iowa Medical Association, Fayette (Ia.) Medical Society, Fort Dodge (Ia.) District Medical Society, Guthrie (Ia.) Medical Society, Jackson County (Ia.) Medical Society, Jefferson County (Ia.) Medical Society, Johnson County (Ia.) Medical Society, Keokuk County (Ia.) Medical Society, Louisa County (Ia.) Medical Society, Madison County (Ia.) Medical Society, Marion County (Ia.) Medical Society, Julien Medical and Surgical Society, (Ia.) Maple Valley Medical Association (Ia.)."—*Omaha Clinic.*

SOCIETY NEWS.

The Cheshire County (N. H.) Medical Society met at Hinsdale February 9. Dr. Herbert K. Faulkner read a paper on "Intestinal Obstruction," and Dr. Gardner C. Hill read a paper on "Hematuria."

The Orange Mountain (N. J.) Medical Society held a regular meeting February 16, on invitation of Dr. W. D. Robinson. About forty members were present. The paper of the evening was read by the retiring President, Dr. Carl Buttner, his subject being "Home Treatment for Consumption."

New York State Medical Society.—At the last annual meeting of the New York State Medical Society, the following officers were elected: President, George H. Fox, M.D., New York City; Vice-President, Frank Low, M.D., Pulaski; Secretary, Frederick C. Curtis, Albany; Treasurer, Chas. H. Porter, Albany.

Rockford, Ill., Medical Society.—The Rockford, Ill., Medical Society was formed Feb. 12, 1894, and the following officers were elected for the first year: President, G. S. Wing; Vice-President, T. N. Miller; Secretary, J. E. Allaben.

The regular meetings of the Society will be on the second Tuesday evening of each month. Those present at the first meeting were Drs. Henry Richings, A. N. Comings, T. H. Culhane, F. M. Hill, Starke, Fringer, Miller, Allaben, Tibbets and Winn.

The Northampton County, (Pa.) Medical Society held its bimonthly meeting at Bethlehem, Pa., February 16. These members attended: Dr. C. H. Ott of Chapman's; Dr. W. H. Seip of Bath; Drs. Chas. McIntire, David Engleman, Amos Seip, E. M. Green and W. B. Erdman of Easton; Drs. B. P. Breinig, E. H. Schnabel, W. L. Estes, John H. Wilson, H. C. Masland and H. Threlkeld-Edwards of the Bethlehems. Two papers were read at the session: Dr. McIntire on "How to Prevent Blindness," and Dr. Edwards on "Serum Therapeutics." The annual meeting will be held at the United States Hotel in Easton, in April.

The Monthly Meeting of the London, Ont., Medical Association was held on February 19, in the Medical School. A large number of members were present, and the proceedings were of much interest to the profession. The Association recognize the great evil that has wounded the practice of medicine in the way of lodge and contract practice, and propose to invoke the aid of the Ontario Medical Council to remedy the evil. Dr. Butler read a valuable paper on "Acute Inflammation of the Middle Ear," which is prevalent as a result of la grippe. Dr. Drake presented the notes of a very unusual and interesting case of rupture of the heart, and exhibited the specimen. The papers were discussed at length by many of the members.

Medical Club of Philadelphia.—The Medical Club of Philadelphia held its annual meeting at the Hotel Metropole February 15. Dr. H. G. McCormick, President of the State Medical Society, was the special guest of the Club at the banquet which followed the business meeting.

The following officers were elected: President, J. H. W. Chestnut; First Vice-President, Prof. Peter D. Keyser; Second Vice-President, Prof. Hobart A. Hare; Secretary, Lemuel J. Deal; Treasurer, Roland G. Curtin.

Board of Governors: J. M. Barton, Frank Fisher, Prof. William Pepper, Prof. Charles K. Mills, A. H. Hulshizer.

Additional Members of the Executive Committee: James VanBuskirk, Prof. E. E. Montgomery, M.D., Prof. James C. Wilson, M.D., L. Webster Fox and T. Chalmers Fulton.

The addresses referred principally to the new law creating a State Medical Council and Boards of Medical Examiners, towards the passage of which the untiring efforts of Dr. McCormick largely contributed. Among those who spoke were Dr. John H. Rauch of Chicago, who for so many years was President and Secretary of the State Board of Health of Illinois, which is in fact the Medical Examining Board of that State; Dr. William B. Newell of the New Jersey State Medical Examining Board; Dr. Hobart Hare of the Jefferson Medical School; Dr. Ernest L. Laplace of the Medico-Chirurgical College; Dr. Charles K. Mills of the Policlinic; Dr. Horatio C. Wood of the University of Pennsylvania, and Dr. John B. Roberts of Woman's Medical College. The speakers were introduced by the President, Dr. J. H. W. Chestnut, to whose indefatigable efforts the Club owes its existence. There were present about one hundred of the most prominent physicians of Philadelphia and other parts of the State, among whom may be named as members of the newly created Board of Examiners, Dr. W. S. Foster of Pittsburg, and Drs. Henry Beates and A. H. Hulshizer of Philadelphia. The affair passed off with much éclat and was greatly enjoyed by the participants.

Medical Society of the State of Pennsylvania.—Committee on Scientific Business. At its last meeting the Medical Society of the State of Pennsylvania appointed—under the provisions of a by-law proposed at Harrisburg and adopted at Williamsport—a Committee on Scientific Business, "to secure scientific papers and to provide scientific discussions for each annual meeting, and to coöperate with the Committee of Arrangements and Credentials in arranging the program." The members of this Committee are Drs. Dulles of Philadelphia; Gorgas of Harrisburg; LeMoyne of Pittsburg; Tyson of Philadelphia; and Towler of Marienville. The object of this change in the law is to have a permanent Committee which, becoming familiar with the subject, shall find it easier to secure good scientific work than is possible for a committee that is appointed new every year.

This Committee on Scientific Business is working in conjunction with the Committee of Arrangements, of which Dr. E. E. Montgomery is Chairman, and will coöperate with it in arranging the program.

The Committee hopes that each member of the State Society will aid it in attempting to make the meetings of the Society of greater scientific importance than they have been in the past. To this end the Committee will welcome suggestions from any member of the Society and especially, at this time, offers of contributions to the work of the next meeting at Gettysburg, May 15 to 18. It is desired that there should be as many brief, concise, practical papers as possible, and it is proposed to have a discussion on tuberculosis, devoting the morning to "Medical Tuberculosis," and the afternoon to "Surgical Tuberculosis."

Any communication from members of the Society in regard to the work of the Committee will be welcomed by it.

Members of the Society desiring to read papers, or to take part in the discussion on tuberculosis, will please notify the Chairman of the Committee, Dr. Charles W. Dulles, 4101 Walnut Street, Philadelphia.

BOOK NOTICES.

Antiseptic Therapeutics. By E. Trouessart, M.D. Translated from the French by E. P. Hurd, M.D. Two Vols. Paper. Detroit: Geo. S. Davis. 1893. Price, 50 cents.

This is one of the most timely books of the year, and will be welcomed by all who wish to practice medicine according to the modern theories of bacteriology. Whether this newer practice will stand the test of time or not, it must be confessed that our therapeutics has not, up to this time, kept pace with the histologic knowledge.

We give, as a sample, the therapeutics of typhoid fever, which, according to our author (pages 234 and 235) is probably produced by the bacillus typhosus of Eberth:

"There are few diseases in which vigorous intestinal antisepsis is more plainly suggested by reason of the ulcerations which are seated in the walls of the intestine.

"According to Bouchard, there are four indications to fulfill: General antisepsis; intestinal antisepsis; antipyretic medication; and lastly, regimen. He begins by a saline purgative; then gives calomel in the dose of 40 centigrams (6 grains) a day in twenty doses, for four days, taking care to avoid salivation. He gives quinin only when the temperature exceeds 104 degrees F. in the morning and 105 degrees in the evening; then he gives 2 grams (30 grains) daily during the first and second week, then 1½ grams during the third; then 1 gram only, taking care not to give another dose until after seventy-two hours. General baths at 38 degrees C. (100 degrees F.), cooled by degrees down to 30

degrees C. (86 degrees F.) and repeated eight times in the twenty-four hours, are only contra-indicated when there is intestinal hemorrhage or pulmonary hepatization. Beef peptones for nourishment, and glycerin (six to seven ounces a day). Vegetable acids under the form of lemon-juice.

For intestinal antisepsis, Bouchard prefers naphthol, α, which he administers under the following form:

"R. Naphthol α
Salicylate of bismuth ãã 5 gm.
"M. Div. in chart No. X. Sig: Take one powder every hour.

"Benzo-naphthol, recently introduced into therapeutics, may be substituted with advantage for naphthol, especially if the kidneys functionate badly. In the latter case it is well to avoid the salicylate of bismuth."

While there are yet many vacant places, enough is given in this book to show the great advances made in therapeutics based on antiseptic medication.

Atlas of Clinical Medicine. By Byron Bramwell, M.D., Assistant Physician to the Edinburgh Royal Infirmary. Volume II. Part III. Edinburgh: T. and A. Constable. University Press. 1893.

The third part of Volume II of this valuable clinical periodical, with finely executed plates illustrative of the text, has just been issued. The articles are: Exophthalmic Goitre: the clinical investigation of cases of exophthalmic goitre; Acromegaly: case of acromegaly in a giantess; the clinical investigation of cases of acromegaly; General Exfoliate Epidemic Dermatitis; Unilateral Hypertrophy of the Face.

There is an extra plate entitled "Old Age," which shows senile changes in the head and face in a very natural manner.

The number contains an index, title-pages and table of contents of the second volume. The high standard of this excellent work continues to be maintained.

MISCELLANY.

Dr. J. H. Cleaver, of Council Bluffs, Iowa, has been nominated for Mayor by the republicans of that city.

The Medical Department of Laval University, Montreal, has received a donation of $3,000 from Rev. Abbe Colin. The sum named is to provide certain necessary scientific apparatus.

Dr. Adolph Dusterhoff, has left to the Berlin University 100,000 marks, the interest of which will be awarded twice a year to the most diligent student in the Medical Department.

New York Academy of Medicine.—Dr. Mary Putnam Jacobi has been elected chairman of the section on nervous diseases by the New York Academy of Medicine.

Lewis Balch, M.D., who for the last seven years has been Secretary of the New York State Board of Health, has announced his intention to resign at the next meeting of the Board.

Dr. Livingston of Bennettsville, N. Y., has built up an extensive practice, notwithstanding that he has been deaf and dumb from the age of three years up to three years ago.

Died from Glanders.—Mrs. Sophie Bersford, died at San Francisco, February 20, from glanders, which she took from a horse purchased from a dealer, who it is said knew that the animal was diseased at the time of sale.

Savannah Medical Journal.—The Savannah Medical Journal Publishing Company announce a new monthly medical journal to be especially devoted to the interests of the medical profession of the Gulf States.

Veterinary Surgeons.—The annual meeting of the Illinois State Veterinary Association was held at Springfield, February 21, with a full attendance. Papers upon important subjects were read by prominent members of the Association.

Typhoid Fever.—We have several letters in regard to the paper of Dr. Woodbridge which recently appeared in the Journal on the abortive treatment of typhoid fever. The writers animadvert on the fact that the treatment has not been given in detail. We have in hand a supplementary article from Dr. Woodbridge, which will appear next week and give his treatment in full.

The Practitioners' Club of Chicago met at the Great Northern February 26. Professor N. Senn presided. The topic for discussion was the "Medical Department of the Newberry Library." Dr. Ephraim Ingals gave an account of the beginnings of the Library. Dr. Wire gave a detailed statement of its present condition, and Dr. Senn told the story of the procurement and development of the Senn collection. Dr. George W. Webster spoke of the library of the American Medical Association. Short speeches were made by Drs. Hollister, Andrews and Hamilton.

Quarantine at Fernandina.—A meeting of the State Board of Health was held in Jacksonville February 23. The meeting was called for the purpose of considering the erection of a quarantine station at Fernandina. The members of the Board are: William B. Henderson, President, Tampa; Dr. Joseph Y. Porter, Secretary and Health Officer, Key West; James P. Taliaferro of Jacksonville and Dr. Warren R. Anderson of Pensacola.

St. Louis Medical College Changes.—The Faculty of the College of Physicians and Surgeons has accepted the resignation of Dr. Barnes, who for many years has been Dean of the College, and the vacancy has been filled by the appointment of Dr. J. A. Close. Dr. George H. Thompson has been elected Secretary to fill the vacancy caused by the resignation of Dr. G. W. Cole several weeks ago. Changes in the staff of the College were recently made, when Dr. J. W. Smith, Assistant to the Professor of Surgery, was dismissed by the Dean and Dr. J. D. Nifong appointed in his place.

Consumption an Infectious Disease.—A committee of the Philadelphia Pathological Society, consisting of Drs. John Packard, W. E. Hughes, G. G. Davis, F. Eshner, W. L. Coplin, John H. Musser and Drs. Ball and Allyn, appeared before the Board of Health February 20, and presented the following action taken by the Society relative to the infectious nature of tuberculosis:

"Whereas, In the opinion of the Pathological Society tuberculosis is an infectious disease, and the Society recognizes the fact that the most frequent source of infection is the human subject affected with the disease, and that there are many practical obstacles to be overcome before a generally accepted system of preventive measures can be established; therefore, be it

"*Resolved*, That in the opinion of this Society the line of action to be followed by the health authorities should be one of education and preparation of the people for future action, and that the first step in this direction should take the form of frequent and well propagated announcements to the effect that the health authorities are prepared to undertake, upon request of the attending physician, with the sanction of the family, the disinfection of premises vacated by tuberculous patients."

After the subject had been discussed by the committee, and the members of the Board, the matter was referred to the Sanitary Committee.

The Medical Editors Travel.—February 15 the medical editors who are traveling through the South, passed through Raleigh. They stopped last night at Southern Pines and will then proceed to Charlotte. From Charlotte

they will return to Monroe and go to Atlanta. From Atlanta they will return to Wilmington, arriving there on the morning of the 20th. That evening at 6 o'clock they will arrive here and spend the night, leaving at 11.25 A.M. the morning of the 21st for Portsmouth, en route northward.

The party is composed of the following persons:

Dr. W. C. Wile, *New England Medical Monthly*, Mrs. Wile and daughter, Danbury, Conn.; Dr. E. C. Angell, of the *Sanitarian*, Brooklyn, N. Y.; Dr. Ferdinand King, *Polyclinic*, New York City; Clark Bell, Esq., *Medico-Legal Journal*, New York City; Dr. T. D. Crothers, *Journal of Inebriety*, Hartford, Conn.; Dr. T. D. Wood, *Brooklyn Medical and Surgical Journal*, Brooklyn, N. Y.; Dr. Howard Van Rensselaer, *Medical Annals*, Albany, N. Y.; Dr. W. Blair Stewart, *Medical Bulletin*, Philadelphia, Pa.; Mr. Griffing and wife, representing the *Connecticut Press;* Mr. R. G. S. McNeille, *Bridgeport Standard;* Dr. Geo. L. Porter, the *Times and Reporter*, Philadelphia; Dr. S. G. S. Stewart and wife, *New York Medical Times*.

The party is under the care of Mr. Geo. W. Taylor, passenger agent of the Seaboard Air Line, and of Captain Whistnant and Mr. Patrick.

Dr. Cheatham and Miss Cheatham of Henderson, N. C., are at present with the party.—*Raleigh, N. C., Chronicle*, February 16.

Hospital Notes.

New Hospital.—Ottumwa, Iowa, is to have a hospital.

The N. Y. State Hospital at Rochester was damaged by fire February 20. The loss is about $15,000.

Dubuque, Iowa, is to have an Emergency and Contagious Disease Hospital. It will be managed by the City Board of Health and the county authorities.

St. Mary's Hospital at Evansville.—The new St. Mary's Hospital at Evansville, Ind., was formally opened February 15. The new building occupies an entire block, and it is said that nearly 10,000 visitors inspected it at the opening.

The Missouri, Kansas and Texas Railroad Company are to build a branch hospital "somewhere in Texas." The good people of Fort Worth are bestirring themselves to secure its establishment in that place.

C. E. Riggs, M.D., Inspector of the Fergus Falls (Minn.) Hospital for the Insane has submitted his report to the Board, which among other recommendations includes one for the erection of a separate building for the confinement of the criminal insane.

Dr. B. G. Maercklein, a Milwaukee dentist, has purchased from Drs. William H. Earles and Walter H. Neilson a third interest in Trinity Hospital, with a view to establishing a medical and dental school. A new building will be erected at a cost of $75,000.

Mr. Guthman of Youngstown, Ohio, has devised a plan to endow the hospital of that city with $100,000. The plan is for one hundred men to take out insurance policies in the sum of $1,000 each, on the twenty years endowment plan. In this way, the $100,000 endowment can be obtained for the hospital and the donors not miss it. Only persons who can well afford to do so will be asked to contribute to the success of the scheme by taking policies.

Woman's Charity Club Hospital.—In 1893 the Woman's Charity Club of Boston, organized a hospital at Roxbury on Parker Hill. Matters have gone smoothly until recently when somebody proposed that medical students should be allowed admission to the hospital for purposes of instruction. Then the trouble commenced, and the new regulation was the subject of many ups and downs, but finally the Club voted, no, with such emphasis that the statues of Molly Pitcher and Priscilla Alden that ought to be over the door of the Council Chamber were observed to turn pale with fright.

Hospital Saturday and Sunday Association.—The thirteenth annual meeting of the Hospital Saturday and Sunday Association of Brooklyn was held last night at the residence of the President, William G. Low.

The most interesting report was that from the collections of Hospital Saturday and Sunday which came on the last Saturday and Sunday of the year. Despite the hard times, the collections this year are over five hundred dollars more than last year. The total amounts to $6,468. The following officers were unanimously reëlected for the ensuing year: William G. Low, President; David M. Stone, Vice-President; the Rev. Dr. C. Cuthbert Hall, Secretary; R. J. Kimball, Treasurer.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from February 17, 1894, to February 23, 1894.

First Lieut. BENJAMIN L. TEN EYCK, Asst. Surgeon U. S. A., will report in person to Col. JOSEPH C. BAILY, Asst. Surgeon General, President of the examining board appointed to meet at Ft. Sam Houston, Texas, at such time as he may be required by the board, for examination as to his fitness for promotion.

A board of medical officers, to consist of: Col. CHARLES H. ALDEN, Asst. Surgeon General; Lieut. Col. WILLIAM H. FORWOOD, Deputy Surgeon General; Major CHARLES SMART, Surgeon; Major WALTER REED, Surgeon; Capt. JAMES C. MERRILL, Asst. Surgeon, is constituted to meet at the Army Medical Museum Building, Washington, D. C., on the 12th day of March, 1894, at 10 A.M., for the examination of candidates for admission to the Medical Corps of the Army.

The National Guard —The Eighth Regiment Ohio National Guards Hospital Corps will be located at Canton, Ohio. Surgeon A. V. Smith is in command of the new corps.

Marine Hospital Changes. Official list of changes of stations and duties of medical officers of the U. S. Marine Hospital Service, for the four weeks ended February 17, 1894.

Surgeon R. D. MURRAY, to proceed to Key West, Fla., for special duty, Jan. 26, 1894.

Surgeon P. H. BAILHACHE, granted leave of absence for twenty days, Feb. 5, 1894.

Surgeon GEORGE PURVIANCE, detailed as chairman, Board of Examiners, Feb. 12, 1894.

Surgeon G. W. STONER, detailed as member, Board of Examiners, Feb. 12, 1894.

Surgeon H. R. CARTER, to report at Bureau for temporary duty, Feb. 2, 1894. To proceed to Brunswick, Ga., Quarantine as Inspector, Feb. 6, 1894. Detailed as recorder, Board of Examiners, Feb. 12, 1894.

P. A. Surgeon J. H. WHITE, granted leave of absence for seven days, Feb. 17, 1894.

P. A. Surgeon P. M. CARRINGTON, granted leave of absence for thirty days, Feb. 19, 1894.

P. A. Surgeon W. D. BRATTON, granted leave of absence for thirty days, Jan. 20, 1894.

P. A. Surgeon W. J. PETTUS, granted leave of absence for thirty days, Jan. 30, 1894.

P. A. Surgeon G. T. VAUGHAN, to report to the Secretary of the Treasury for special duty, Jan. 26, 1894.

Asst. Surgeon G. B. YOUNG, ordered to examination for promotion, Feb. 14, 1894.

Asst. Surgeon W. G. STIMPSON, ordered to examination for promotion, Feb. 14, 1894.

Asst. Surgeon B. W. BROWN, ordered to examination for promotion, Feb. 14, 1894.

Asst. Surgeon M. J. ROSENAU, granted leave of absence for thirty days, Feb. 26, 1894.

Asst. Surgeon L. E. COPER, to proceed to Mobile, Ala., for duty, Jan. 30, 1894.

Asst. Surgeon J. M. EAGER, granted leave of absence for four days, Jan. 30, 1894.

Asst. Surgeon RUPERT BLUE, granted leave of absence for eight days, Jan. 26, 1894.

Asst. Surgeon SEATON NORMAN, ordered to examination for promotion, Feb. 14, 1894.

Asst. Surgeon EMIL PROCHAZKA, to proceed to New York City for duty, Jan. 24, 1894. To proceed to Buffalo, N. Y., for temporary duty, Feb. 2, 1894.

LETTERS RECEIVED.

(A) Allen, D. P., Cleveland, Ohio; Atkinson, Wm. B., Philadelphia, Pa.; Appleton, D. & Co., New York, N. Y.; Ayers, D., Syracuse, N. Y.

(B) Burnett, D. L., So. Royalton, Vt.; Ball, Jas. Moores, Keokuk, Iowa.

(C) Cutter, E., & J. A., New York, N, Y.; Connor, Leartua, Detroit, Mich.; Collins, T. S., Globe, Arizona; Chisholm, Harold, Chattanooga, Tenn.; Canfield, W. B., Baltimore, Md.

(D) Danforth, L. L., New York, N. Y.; Dunglison, R. J., (3) Philadelphia, Pa.

(E) Ewing, F. C., St. Louis, Mo.; Englemann, Rosa, Chicago, Ill.

(F) Fehr, Julius, Hoboken, N. J.; Fletcher, C. A., Kalamazoo, Mich.

(G) Garcelon, Alonzo, Lewiston, Me.; Gray, L. C., Brooklyn, N. Y.

(H) Hofheimer, J. A., New York, N. Y.; Haldenstein, J., New York, N. Y.; Henderson, N. H., Chicago, Ill.; Hopkins, J. G., Thomasville, Ga.; Hollister, Mary C., Chicago, Ill.

(I) Ingals, E. Fletcher, Chicago, Ill.

(K) Keiper, Geo. S., Lafayette, Ind.

(L) Larkin & Scheffer, St. Louis, Mo.; Lanphear, E., Kansas City, Mo.

(M) Martin, Jeffry, Clinton, Iowa; McMurtry, L. S., Louisville, Ky.; Montgomery, E. E., Philadelphia, Pa.; Medical Review Ass'n, St. Louis, Mo.; McSwain, I. A., Paris, Tenn.; Middleton, Wm. D., Davenport, Iowa.

(P) Probst, C. O., Columbus, Ohio; Pantagraph Printing & Stationery Co., Bloomington, Ill.; Phenix, N. J., Alvin, Texas; Parkinaon, W. B., Logan, Utah.

(R) Rauch, J. H., Lebanon, Pa.

(S) St. Peter State Hospital, St. Peter, Minn.; Sutton, R. S., Allegheny, Pa.; Stechert, G. E., New York, N. Y.; Shurley, E. L., Detroit, Mich.; Shurtleff, G. A., Stockton, Cal.

(T) The Tilden Company, New Lebanon, N. Y.; Towler, S. S., Marienville, Pa.; The Maltine Manufacturing Co., New York, N. Y.; Turner, H. J., Wayland, Mich.

(W) Wells, E. F., Chicago, Ill.; Woodbridge, J. B., Youngstown, Ohio.

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ORIGINAL ARTICLES.

SLEEP, SLEEPLESSNESS AND HYPNOTICS.

BY S. V. CLEVENGER, M.D.
CHICAGO.

A theory of sleep phenomena, to be complete, must have data for its construction drawn from wider sources than we find have been surveyed in the average physiologic essay on the subject.

Notwithstanding the strides made by biology, more particularly in its morphologic aspects, the past quarter century has added but little to Wm. B. Carpenter's summary of "Sleep and Somnambulism," in his famous "Physiology," or what is contained in J. G. McKendrick's article in the Encyclopædia Brittanica. A full bibliography is given in the *Dictionnaire Encyclopédique des Sciences Médicales;* McNish, Durham, Kohlschütter, Pflüger and Mosso afforded the main discussions, which have been added to but little by later writers.

Herbert Spencer (Principles of Biology, Vol. I., Chap. IV.) on "Waste and Repair," summarizes much that could be more directly applied to a satisfactory consideration of the study than was required in his "Synthetic Philosophy."

Spencer notes that reptiles maintaining no great temperature and passing their lives mostly in a state of torpor, suffer but little diminution of mass by waste, but with the higher order of animals which are active and hot-blooded we see that waste is rapid, and when unchecked, bulk and weight decrease, ending very shortly in death. From these and allied considerations, he formulates the dictum that in the same creatures there is most waste when most motion is generated. Valentin computes the carbonic acid exhaled by the waking marmot as seventy-five times more than when it was hibernating, and the oxygen inhaled was forty-one times greater in the waking state. Invalids who are able to take scarcely any nutriment, by being kept warm and still, are able to lessen waste by thus reducing force expenditure.

Experimental comparison between the hibernating marmot and starving pigeon shows the latter loses forty times more muscular substance than the torpid marmot, eleven times more fat, thirty-three times more alimentary canal tissue, eighteen and three-tenth times more liver, fifteen times more lung, five times more skin, so that the parts least consumed in hibernation are the hydro-carbonaceous deposits which serve as a store of force, while in the awake and active pigeon, equally unsupplied with food, the greatest loss takes place in the motor organs. The diminished ability of bodily organs to perform their functions after activity, is noted. That legs, arms and eyes become enfeebled, and that concentrated attention prostrates the brain, are familiar truths.

Repair is everywhere and always making up for waste. While awake, waste is in excess and repair is going on, but not to the same extent as when asleep; though repair is at this time in excess, still some waste is necessitated by the carrying on of never-ceasing functions.

"During activity, the reintegration falls in arrears of the disintegration, until, as a consequence, there presently comes a general state of functional languor, ending at length in a quiescence which permits the reintegration to exceed the disintegration and restore the parts to their state of integrity."

Extending these considerations of Spencer and those who had previously written to the same effect, we are confronted with the fact that tissue restoration is undeniably a chemic process, and the queries arise, why, in such states as cerebral congestion, with its surplusage of blood, the brain may not rest, and why should sleep occur at all if there is proximity of food to the tissues undergoing waste?

Surveying the physiologic accompaniments of sleep in all animal life, we find that in the simplest forms, surfeit and extreme privation arrest motions, and the rational explanation of this would be that the majority of molecules that compose such simple forms are relieved of tension, either by the completion of molecular construction or by their not having within combining reach, atoms with which combinations are possible.

Nutritive processes are certainly carried on during sleep, and the quiescence of sleep facilitates this action by staying the waste of such tissues as are most in need of such reparation and, obviously, nourishment is transferred from such parts as can spare it best to those that are deficient in this regard. If repair were instant and incessant upon waste, then sleep would not be needed to transfer nutrition about the body, and one of the best evidences of this is that, often, massage may so redistribute blood and feed the jaded tissues as to largely take the place of sleep, at times rendering it unnecessary. At other times, massage or a warm bath may induce sleep more rapidly by starting a redistribution such as takes place normally during profound sleep.

If we look upon sleep as merely an *effect*, or an accompaniment of a nutritive process, and as not in every case even a necessary one, we substitute a regard for the real instead of the apparent phenomenon.

In æstivation, amœbic encystment, hibernation, the absence of food requires quietude that will conserve what little there is present in the animal itself. In plethora, apnœa, etc., this quietude is enforced by the surcharged molecules being incapable of further assimilation, which drops the activity of the entire animal towards the lowest expression.

A parallel is afforded by the action of soil which at times agriculturists claim "needs a rest." It is conceivable that time may be necessary to effect certain chemic combinations even in the presence of

the requisite elements for the soil restoration. Fertilizers of appropriate sorts may cover the exhausted soil, but time is needed for the assimilation of such fertilizers and the ground must lie fallow until its productive capacity is regained, however long this may require; and very likely this necessity for a greater or less loss of time in building up complex cerebral or sarcodal structures explains why sleep occurs, and shuts off further decomposition until reconstruction can take place. The limit of comfortable activity having been reached, sleep takes place because further drain through waste may be distressing, and this discomfort becomes agonizing when prolonged, a fact taken advantage of by the Chinese as a method of torturing criminals.

Less heat and carbonic acid being produced during sleep further indicates the reduction in chemic decomposition that then occurs. Helmholtz estimates 40 calories produced during sleep and 112 when awake. "He who sleeps, dines," is an old saying, and much sleep favors obesity.

Mass motion being suppressed in sleep enables molecular rebuilding the better, as the molecules are not then engaged in the major activities but eat, so to speak, themselves, while the body rests, just as workmen take an hour off to dine, and discontinue the work upon which they are aggregatedly engaged.

Whenever supply is constant to the animal or to its tissues, the necessity for sleep diminishes in proportion to the ability of such animal or tissues to rapidly reintegrate the compounds destroyed. The differences between the sleeping habits of animals are thus at once explained. It is conceivable that animals may exist whose nearly every cell is so constantly bathed in absorbable food as to place it comparatively beyond the need of sleep, but such animal, as a rule, could not be very highly organized, or, like the sloth, could not be very active, and the rete mirabile in the axilla of the sloth shows how part of the muscular strain is provided for while the animal hangs to the tree.

A still further important factor in this connection I communicated to *Science*, New York, Nov. 11, 1892, in an article entitled, "Preliminary Note on Sleep:"

"That there is a relative anemia of the brain during sleep is well established, but the hypotheses advanced to account for this or any other of the sleep phenomena are unsatisfactory. In "Comparative Physiology and Psychology," 1884, I treated the subject briefly, and since then have been gradually accumulating and arranging data for a theory which I have finally adopted, and which appears to me to be fairly complete as enabling the major phenomena to be accounted for.

"Briefly stated, where there is physiologic waste there is, normally, repair, and the activities of the brain demonstrably are kept up by renewed nutrition derived from a blood supply adjusted to the ordinary needs. When there is cerebral anemia, as in chlorosis, then there is increased desire to sleep, the brain does not receive the necessary quantity to compensate waste, and it rests, just as any commercial activity will cease with withdrawal of means to continue it. Those who are familiar with my nutrient reflex theory, mentioned in the book referred to (Professor C. K. Mills of the Pennsylvania University, and Professor C. L. Herrick of the Dennison, Ohio, University, have written approvingly thereon), will understand that with the cessation of sensory stimulation there will be less blood attracted to the brain and other nerve centers, the heart-beats lessen in vigor and number, and, with the pulse-rate fall there is ordinarily less blood in the brain.

"Now, it is evident that the anemia of sleep is not caused by constricted blood vessels, else there would be the facial pallor seen during an attack of epilepsy, or paroxysm of anger or fright; and with this quieting of the brain processes by stimuli withdrawal, such as is afforded by darkness, silence and absence of irritation generally, a further lessening of molecular interchange in the brain occurs; and I claim that *it is the molecular activity in the brain that attracts the blood there chemically and mechanically*, and the sympathetic, or vaso motor system has evolved to facilitate this regulation of demand and supply. Then, granting this, there will be, during sleep, a passive condition of the blood vessels, and the blood supply will fall to a minimum.

"An extension of these considerations will enable all that pertains to sleep to be accounted for, such as aestivation, hibernation, insomnia, dreams, and all derangements of sleep."

At this stage we may conveniently condense what otherwise could easily fill a volume, in reviewing as much of sleep phenomena as may be necessary to test the consistency of this mainly chemic theory. Larval and fetal inactivity or sleep, the prolonged sleep of infants and the drowsiness of pregnant females can be understood as demands for lessened activity during constructive processes. An army is recruited and accoutered before it fights, and the molecular cell building is the process of getting ready for the major life activities.

The suspension of consciousness during sleep is apparently due to the lessening of function of organs generally. Consciousness, being a function of the gray matter, or central nervous system, is in abeyance because the gray matter is undergoing reconstructive rest as well as other portions of the organism. Imperfect sleep and dreams are caused by this rest not being complete, the circulation in these centers being irregular.

Worry notoriously exhausts more than many kinds and degrees of work, and sleep overcomes the exhaustion produced by this as well as other excessive brain taxation. In such instances we have a painful cerebral activity, and the molecular breakdown is greater than in simple mental application.

Stimuli withdrawal ordinarily lessens the nutrient reflexes, less blood is forced to the head, and the fall of blood pressure in the medulla drops the heart beats to a lesser number through pneumogastric action. Closing the eye reduces optic excitation, noises are heard and the blood does not immediately fall to a minimum in the brain, hence sleep may not appear until time has passed. As the vaso-motor reflexes are less and less called upon, an ebb of blood finally admits of obtuseness to noises, etc., when they do occur. With the restoration of general cell nutrition, the desire for activity increases and general reflexes are easier provoked. The nutrient reflexes of the brain now begin to send blood there upon stimulation, and the person awakes with the noises and light of day, or upon slighter provocation, if these are absent. The instance is often cited of a boy who was blind and anesthetic, who fell asleep when his ears were closed to sounds.

But stimulation is a relative matter, for many who are accustomed to continuous noises become adjusted thereto, as does the miller who is awakened by the machinery stopping. In Arctic regions, also, the exclusion of light is not necessary to induce profound sleep.

Somnambulists have been separately classed as the speaking, the acting, the speaking and acting, and the hearing, seeing, speaking and acting. In all these, consciousness is absent, hence somnambulism is more or less automatism of important organs; dream acting. Sleep, to be complete, must overtake all portions of the body, and if from any cause irritation persists in any part, as during pain, then imperfect sleep results. It is conceivable that a speech center, centers for arm and leg movements, etc., may be hyperesthetic independently of the adjacent parts. Dr. George W. Jacoby, in a paper read before the New York Metropolitan Medical Society, Feb. 15, 1893, ably surveys the matter of "periodical sleep seizures of an epileptic nature," in which this sort of unconscious automatism is mentioned, and he believes that there is a relationship between the corpulence in some of these cases, such as that of Dickens' fat boy, Joe, and perverted nutrition due to a pathologic condition in the psychic centers. Dr. Jacoby concludes that "sleeping attacks, occurring alone or in combination with other symptoms, if of brief duration and followed by amnesia, are probably epileptic in character. If somnambulism, particularly of a noisy kind, is present, this probability becomes a certainty."

In narcolepsy, he claims that there is consciousness of what is going on during the attacks, the patient is not obtuse when awakened and he at once has full possession of his intellectual faculties. In this instance it would seem as though consciousness was the only faculty that was not asleep. Hysterical lethargy is associated with other evidences of the disease, such as more or less hemianesthesia. Hysterical sleep, in my opinion, is directly due to partial brain ischemia through contracted blood vessels to one or more parts. The amblyopia, deafness, aphonia, etc., could be also thus accounted for, as well as the fact that sudden impressions, or the cerebral suffusion produced by nitrite of amyl, cut short the attack.

The prolonged somnolence of cerebral syphilis, Buzzard (Diseases of the Nervous System, p. 288) assigns to the remarkably thickened walls of the arteries at the brain base—usually of a nodular character—diminishing the caliber of the vessels. Huebner, in Ziemssen's Cyclopædia, also has important observations upon this subject: "The consequence would appear to be that the cortical substance of the hemispheres must be starved of blood to a considerable extent."

The great sleeplessness of mania for long periods and the supervening emaciation, show that not only cerebral but general rehabilitation is interfered with; waste is not only in excess of repair but the latter is seriously impeded by disease. Hence the necessity for sustaining treatment in this disorder. I have occasionally known stimulants to secure an abatement of the furor and produce sleep, when other routine measures merely added to the trouble. The hot bath, while temporarily beneficial, too often is followed by collapse, additionally going to show the necessity for sustentation in many of the cases that are frequently overdosed with depressants.

Warmth, judiciously used, however, is attended with good results. The fact that so many of the insane sleep best on hot nights should not be lost sight of. In Griesinger's "Mental Pathology and Therapeutics," page 75, et seq., sleep, in connection with insanity is well considered, and he particularly compares insanity to dreaming.

Preyer originated the blunder that sleep was caused by a toxic substance in the blood, upon the inference that as fatigue was associated with sarcolactic acid in the muscles, the latter was the cause of the former. Pflüger regarded sleep as cerebral asphyxiation from excess of carbonic acid accumulation. On the other hand, recent experiments point to increased consumption of oxygen during sleep. Evidently, as a definite amount of nitrogenized hydro-carbonaceous matter is consumed in all waking effort, cessation of activity lessens this consumption, but not to the extent of arresting it altogether, for the inevitable result would be a disintegration of the tissues.

The complex albumen molecule, $C_{72}\ H_{112}\ N_{18}\ SO_{22}$, with its 225 atoms, in undergoing metabolic changes, adds to and subtracts from its number of atoms within a certain range, and maintains its life and potencies. Let us say that twenty-five of its atoms are used up, exploded in exertion, and its limit of exhaustion has been reached. Plainly, these twenty-five atoms should be regained during comparative quiescence by other than toxic or asphyxiating means. In short, the cell eats while the colonial activity ceases, and this is the meaning, the end and aim of sleep. If, in addition, twenty-five more atoms enter into the combination, making it a still more complex molecule, a margin of fifty atoms may thus be imagined as enabling extra exertion within safe limits. Destructive metabolism could be supposed to ensue from several hundred of these atoms being parted with.

The chemic composition of the hypnotics affords no clue to their modus operandi. The mere presence of nitrogen in many is negatived by this element also occurring in ammonia and thousands of compounds with varying properties. Chlorin also appears as a food constituent in salt, as part of the anesthetic chloroform, and as a suffocant in its gaseous form. Neither the number nor the position of the atoms of carbon, hydrogen, nitrogen and oxygen in morphin explain why it differs from quinin which also contains these elements in other proportions.

Neither complexity nor simplicity of atomic combinations guarantees any explanation of the molecular rationale, but in a general way the more useful drugs have a constitution admitting of more or less direct conversion into animal constituents, and yet this is far from being a safe universal guide, for some of the deadliest poisons, even in small quantities resemble foods in their chemic structure.

In some instances, solubility modifies actions materially for better or worse, in others the looseness of the atomic make-up explains some effects, and the resistance to atomic splitting up, or the temperature necessary for decomposition, explains other effects. With what knowledge we possess we can formulate something in general from specific instances:

Alcohol, $C_2\ H_6\ O$, is rapidly assimilated and in a certain sense is a food. This rapid assimilation by reconstructing the tissue could account for its stimulant effect, and when there had previously been cell waste upon which the insomnia depended, the sleep-inducing properties of alcohol are accounted for.

The stupidity that follows over-indulgence is precisely what would occur from cerebral tissue surfeit.

Morphin, $C_{17}H_{19}NO_3$, upon thorough consideration also falls into this dangerous food category. It, with alcohol, though less rapidly, enters into molecular combinations with nerve tissues and induces a certain exhilaration and subsequent dulling of the senses.

The exhilaration caused by oxygen and the stimulant effects and later anesthesia of nitrous oxid gas, without doubt are owing to the rapid assimilation of these articles by the blood and nerve centers. The stimulant effects of all these agents could be ascribed to rapid atomic interchanges, such as occur with less swiftness and danger in the ordinary course of nutritive supply.

The warmer blooded birds take up oxygen more rapidly than mammals, and far more so than reptiles. The acidity of muscle and nerve substance in connection with blood alkalinity renders possible the conveyance of alkaloids, and make it likely that soluble alkaloidal hydrocarbons of the neurotic group, assimilable by the organism, have sufficiently close molecular resemblances to the acid protagon as to account for their mutual affinities and bio-chemistry.

In the constitution of protoplasm, as well as that of any compound whatever, there is a necessity for the absence of certain molecular groupings which would destroy the combinations if integrity is to be preserved. The cell environment is reached by adaptability, and in the differentiation of cells it is easily seen that what would be nutrient to one may easily poison another by combustion conversion, as with sulphuric acid, or affinities in lesser degree existing between the toxicant and molecule.

The life of the cell depends upon the absence of these deleterious molecules for which there are affinities, precisely as animals must avoid fire. Prussic acid, H C N, presents the simplest example. The nitrogen therein is in a dangerously assimilable form, and its sudden surcharging of the nerve centers with carbonized blood paralyzes the body. Even though the venous blood occurs after prussic acid has first caused the blood to appear to be arterialized, at least destructive chemic changes are instantly induced by this simply constructed poison. The action of nitroglycerin and amyl nitrite exhibit the swiftness of union between the nitrogen and important structures. Nitrogen has a persistent tendency towards its free inert state, and this very disposition confers upon it great physiologic importance. On the other hand, oxygen has a great antipathy to uncombined existence. These two mechanically mixed ingredients of the air play complementary parts in biologic phenomena.

Certain drugs have special affinities for certain groups of nerves, and white pigs and sheep are said to be differently affected by vegetable poisons from colored individuals, a fact accounted for, doubtless, by the presence or absence of pigment compounds which have affinities for or resist the influence of certain poisons.

The antidotal action of chlorin gas in prussic acid poisoning may be due to the former directly lessening the surfeit (so to speak) imparted by the hydrocyanic acid. The sedative property of small doses of the latter show that it has a nutritive value which larger doses exaggerated poisonously.

The theory that chloral, C_2HCl_3O, liberates chloroform in the blood is tenable notwithstanding the definite urochloralic and other urinary excretion after chloral ingestion, but how does chloroform, $CHCl_3$, cause anesthesia? Its solvent power over sulphur, phosphorus and fatty bodies, conjoined with its primarily intoxicating properties, might make it appear to combine slight nutrient with destructive effects, the latter acting later but more powerfully.

The greater safety of ether (sulphuric ether, $(C_2H_5)_2SO_4$) and its readily decomposing into alcohol, sulphurous acid and olefiant gas, together with its stimulating property in small doses, point to the nutrient action outweighing its toxic or to the relative proportion of each being within safer amounts in ether.

It is doubtful if the bromids become substitution compounds in any of the animal tissues, further than to pervade the secretions and lessen activity by taking the place of nutrient materials. About as free nitrogen dilutes the air and lessens the quantity of oxygen respired, so may the inert bromid salts saturate the circulation in place of other materials that could enter into combination. If bromid salt ingestion passes a certain point, distressing insomnia may result, probably from the anemia exceeding what ordinarily occurs in sleep. Chloral, also, in large doses may utterly fail to do anything but cause distressing wakefulness and gastric irritability, especially in senile debility associated with heart disease. The significance of this being that waste is but increased by the chloral. Alcoholics in such instances act promptly and beneficially for easily understood reasons.

Ergot has an indirect hypnotic effect through its contraction of the blood vessels, upon the muscles of which it acts directly. Winckler's discovery of a coloring matter in secale closely resembling hematin might mean that oxygenation of the involuntary muscles is accomplished by ergot, and the contractility is thereby induced.

Though, strictly speaking, phenacetin and phenocoll can not be classed as hypnotics, their effects as sedatives and certain chemic considerations make them specially interesting as neurotics.

The antipyretic effects of acetanilid and phenacetin when combined with acids are destroyed; the earliest discovery of the kind being that of Ehrlich, that the acid sulphone group abolished the affinities of certain substances which they previously possessed for the nervous system. The existence of so many alkaloids having this affinity, taken in that connection, afford hints that some of the combining efficacy of neurotics depend upon the union of a base and radical in the nerve tissues, notwithstanding the fact that these alkaloids may be introduced into the system combined with sulphuric or other acids; such acidulation being looser than in the coal tar series.

An ingenious introduction of the basic glycocoll into the group whence phenacetin is derived rendered it much more soluble, and to this extent increased its ease of administration without altering the antipyretic and analgesic properties of phenacetin when thus converted into phenocoll.

Unlike the majority of synthetical antipyretics, phenocoll, according to Kobert of Dorpat, is not poisonous to animals and does not affect the blood. It has a slight stimulant effect upon the circulatory system. Phenacetin is closely allied chemically to acetanilid

and physiologically both phenacetin and phenocoll act as a modified acetanilid or antipyrin. What particular change in the construction accounts for this modification only great advances in bio-chemic knowledge will reveal, but it can be conjectured that differences in the closeness with which nitrogen, as well as other atoms are held in a compound, may unlock a molecule quicker or retard its entering into new combinations.

Considering the derivation of paraldehyde, its somnifacient influence might be regarded as similar to that caused by alcohol. The ordinary ethyl or acetic aldehyde being alcohol, minus two atoms of hydrogen, and paraldehyde is formed by the condensation of three molecules of aldehyde into one molecule. It is so easily split up, so sensitive to oxidizing agents, and so much care is required in securing a pure article, that with safer and better hypnotics in the field paraldehyde is not likely to come into general favor. Not only has the pungent aldehyde been found in it as an admixture but the poisonous amyldehyde also.

Urethane and its derivative, somnal, have been pretty well abandoned by physicians. "Antikamnia" owes its present popularity to advertising, and being but a mixture of acetanilid, bicarbonate of soda and caffein, according to Helbing (Modern Materia Medica, p. 3), it needs no further mention.

Were it not for chloralamid, which is rapidly superseding all modern synthetically constructed hypnotics, sulphonal would have remained in high esteem. In treating the insane, sulphonal has the advantage of solubility in hot tea or coffee and can therefore be given without the patient's knowledge. The common practice of administering the dry sulphonal leads to undesired effects, such as a prolonged but unsatisfactory drowsiness or stupidity usually the day after it is taken. The action of sulphonal has apparent reference to its alcoholic derivation through mercaptan. The derivatives, trional and tetronal, possess few if any advantages over the original drug, while it is claimed that the latter sometimes caused vomiting.

The substitution of chloral for opium created an epoch in therapeutics, notwithstanding the fact that chloral was found to have very disagreeable after effects and some dangers in its use. The advent of sulphonal enabled chloral to be largely superseded, but finally the discovery of chloralamid affords us all the advantages of chloral in the absence of its disadvantages.

The poisonous dose of chloral hydrate is not established; small doses have caused death and large doses have been tolerated. Idiosyncrasies cause wide variance in effects.

Chloralamid requires a slightly larger dose than chloral, but the former causes what resembles ordinary physiologic sleep to a far greater degree than is induced by chloral. In other respects the drugs are closely allied, except that the deleterious properties of chloral appear to be absent from the newer compound. Particularly the gastric irritation induced by chloral frequently destroys its usefulness, and chloralamid has no such influence upon the stomach, nor is it an irritant to any mucous membrane.

Some laboratory experiments of Kny of Strassburg, demonstrated that chloralamid was free from action upon the heart and digestive tract, nor did it cause congestion and the other unpleasant after effects of chloral, though he inferred that the latter was slowly released in the circulation from chloralamid, and its depressant effects were counteracted by the formamid which acted as a stimulant.

Thirty years ago, formiate of ammonium was used by Ramskill in the London Hospital for the Epileptic and Paralytic. He considered it useful in chronic paralytic diseases with general torpor, and he thought that it had a special tendency to the nervous centers. Formic acid is a circulatory stimulant, but too energetic to be useful except when chemically combined. It is one of the fatty acid series and has been found to exist in small quantities in the spleen, pancreas, thymus, muscle and brain, and in leucocythemia in the blood, urine, sweat and marrow.

An important group of animal constituents, called the amido-acids, is derived from the fatty acids by replacing one or more hydrogen atoms by the radicle amidogen NH_2. This includes leucin, tyrosin, glycocin, taurin, creatin.

As the amines, amides and amido-acids are nitrogenous organic compounds among the simpler organic proximate principles, it is a safe assertion to make that the union of the formamid with the chloral in chloralamid justifies the classing of this new preparation *among the nutrient hypnotics;* that is, among those like alcohol, which, when properly administered, supplies material that has been exhausted in the nervous centers, notwithstanding the superficial objection that some of these organic compounds are decomposition products.

Reasonably, much of the toxic influence of chloroform may be ascribed to the solvent power of that anesthetic over sulphur, phosphorus and fatty bodies, as these substances are important ingredients of nerve tissue. Now if this toxic effect is obtunded or prevented by the union of chloral with formamid through the former expending this deleterious solvent propensity upon the latter, and the formamid being so closely allied to the normal nitrogenous proximate principles as to act practically like a food, which we can all the readier assume from its slight stimulant effect upon the circulation, the combined nutrient and toxic effect of chloral in that drug and chloroform is replaced by *an almost wholly nutrient hypnotic in the compounding of chloralamid.*

Glycocoll (also known as glycocin, and amido-acetic acid) is the base which united with the phenetidine group forms phenocoll and renders it soluble. This base being an amido-acid, on the principle enunciated above, phenocoll should be a safer and more effective antipyretic and sedative than phenacetin.

The published attestations of physicians as to the usefulness of chloralamid are so numerous, but at the same time so uniform, that brief mention of most of the references would swell this article unduly.

There has been a notable absence of any disposition to decry the drug in any quarter worth attention. In the use of every hypnotic, as well as any other therapeutic agent, bungling administration occurs but this should not discredit rational exhibition. We may as well inveigh against water because it drowns.

Briscoe of Chicago, accounts for a few failures through some practitioners using hot liquids as a vehicle, when chloralamid should never be offered in any other than cold solution.

In my experience, the elixir has a delayed action as compared to the powder dissolved just before use, an effect for which I have not tried to account.

The facts that chloralamid is about one-half as expensive as sulphonal, and superior to it, one would imagine were inducements for hospitals to purchase it in preference to the older and costlier hypnotic, but in certain quarters the error prevails that chloralamid is only soluble in alcohol. This arises from the fact that in twenty parts of water, chloralamid dissolves very slowly at ordinary temperatures, between 60 and 70 degrees F. Where, for any reason, it is not desirable or convenient to use the small amount of alcohol, about a minim and a half to the grain, in preparing it for use, the aqueous solution can be prepared beforehand, half a day, or kept in the dispensary stock in that form.

Brandy or raspberry syrup are the most used vehicles; a drop or two of dilute hydrochloric acid to the ordinary dose facilitating solution.

It is to be hoped that the mistake so often made in giving sulphonal dry, will not be made in chloralamid administration, as its action may be delayed until the next day and cause a stupid half wakefulness not at all desirable.

Dr. Joseph Collins contributed to the July, 1892, *Journal of Nervous and Mental Diseases*, an excellent review of his experience with chloralamid in insomnia associated with various troubles, such as phthisis, pneumonia, neurasthenia, alcoholic delirium, senility, chorea, sciatica, lithemic headache, overwork, opium habituation, meningitis, and reports that he was particularly struck with its efficacy in two conditions, viz.: pain and excessive irritable activity of the brain.

An important feature he notes, in the treatment of certain cases, is to beware of giving drugs which will in any way militate against the excretion of deleterious matters from the system and lower the condition of vascularity, such as the preparations of opium and the bromids.

"In conditions where chloral is indicated," states Dr. Collins, "but some intervening symptoms contraindicate its use, such as weak heart and respiration, as in the asthenic stage of acute disease, or in diseases of the heart and lungs, chloralamid can be substituted with safety and with good results."

He sums up in favor of its safety and reliability, its absence of after effects such as headaches and its value as a hypnotic where pain or cerebral activity are prominent factors.

Taking other authors at random, we find that as to the time of action, personal idiosyncrasy determines differences, but to no greater degree than was observed with chloral, the average limit being from one-half to three hours intervening between the dose and its effect, the duration of sleep varying from two to nine hours.

In many forms of mental disease, chloralamid acted beneficially in relieving insomnia; regular sleep was induced in chronic alcoholics and in patients suffering from locomotor ataxia, even when they had been taking large doses of morphin. Other ailments in which sleeplessness occurred were alleviated to the extent of sleep procuring by chloralamid as follows: Cardiac asthma, chorea, neuralgia, rectal carcinoma, hysteria, spinal disease, delirium of cerebral hemorrhage, rheumatic fever, thoracic aneurism, gastric carcinoma, hepatic carcinoma, bronchitis, cephalalgia, chlorosis with mitral insufficiency, endocarditis and renal colic.

It has been effectively used as a sedative in seasickness, neuralgias and the sufferings of gastric ulcer.

The United States Dispensatory designated chloral as the most efficient soporific and the one most often used, and claimed that for producing sleep no medicine equaled it except opium, and to this it was preferable as wanting the properties which render opium inapplicable in certain cases, as in active congestion and acute inflammation of the brain and to a certain degree in constipation of the bowels.

In the rapidly accumulating literature of the subject, we begin to note that where chloralamid appeared to be ineffective in a certain disorder, in the experience of one author, other physicians obtained good results from its administration in the same ailment. In short, the history of chloral discussion is repeating itself in some of the contradictory experiences, but with the advantage for the later drug, that, wherever chloral has been established as of use, chloralamid proves not only more satisfactory, but where through deleterious properties contraindications for chloral using forbid its use in a large list of diseases, chloralamid has been proven to be perfectly safe. No hypnotic has won so universal favor in as short a period and without the arraignment against it of occasional unfortunate episodes.

The largest dose on record used at one time is reported by Dr. Lackersteen, *Medical News*, Nov. 25, 1893. A patient swallowed a mixture containing 140 grains of chloralamid with about 40 grains of bromids and fully recovered from the stupor which followed.

Personally, I have found it useful in facial neuralgia in small doses, and often sleep was induced by from fifteen to thirty grains when pain had previously prevented rest, showing that chloralamid has sedative or analgesic effects.

The restlessness of anemic states has been allayed by small doses, and in a few cases I have substituted chloralamid for the bromids in treating epilepsy with apparent benefit, alternating the drugs or using them conjointly so as to diminish the dose of each. It would require at least a year's experimentation in this disease with chloralamid to enable a more conclusive statement than that it has been satisfactory as far as used by me; but I have not excluded other medicines at these times except for such short periods in treating epileptics that not only will a lengthened period be required to determine how far chloralamid is useful in this ailment, but I would prefer to hear from numerous other physicians who may make similar trials before pronouncing unqualifiedly in favor of its continued use in epilepsy.

Against the distressing activity of hemichorea in adults, which destroys rest and prevents sleep for so long as to imperil life, I hope much from chloralamid as I had previously found that chloral was absolutely the only remedy that would afford the required sleep for a few hours at a time; had chloralamid been then known it could have been continuously used where the chloral had to be withdrawn owing to the stomach irritability it induced, substituting a source of danger equally grave. Dr. Barrs of Leeds, reports good effects from chloralamid in ordinary chorea. Some reports from psychiatrical institutes venture statements to the effect that chloralamid is good in one psychosis and not in another. Now the trials have been far too few to enable such assertions to be extended generally.

There is a strong probability that a large percentage of all cases of insomnia in the insane can be relieved by judicious chloralamid exhibition, particularly if attention is paid to accompanying conditions and general physiologic treatment is adopted at the same time. To merely impute the sleeplessness to brain disorder and give a hypnotic without reference to the condition of the heart, liver, kidneys, or emunctories generally, would be extremely irrational, and would fully account for failures in some instances. At times I have found that the insane patient would be affected differently by the same dose from no discoverable cause, but where proper attention has been paid to the general bodily condition, as a rule, good results were secured with chloralamid.

In delirium tremens, it is only common sense to see that elimination is carried on properly, and often eliminants alone will end the furor of alcoholism.

In some of the congestive attacks of paretic dementia, ergot if anything, would prove more useful, but paretics will secure sleep from chloralamid ordinarily, as well as other patients.

I have found it useful in the sleeplessness and painful cerebral states of melancholia, and particularly so in the case of one recurrent melancholiac whose relapses were cut short by the prompt action of the drug.

In cerebral and spinal syphilis, pain is assuaged markedly by chloralamid, but of course it should not be given where there is a stuporous tendency, nor with expectation of anything but amelioration.

In the traumatic neuroses it is particularly valuable. Several cases of Erichsen's disease from concussion of the spine were enabled to secure sleep from chloralamid when ergot, massage and hot water applications which had previously been helpful had failed.

If the small doses of chloralamid, when substituted for bromid of potassium, are found to be generally applicable, I do not believe that ill effects can follow from the abuse of the chloralamid in this way, at all comparable to what has been experienced in the wretched overdosing of the bromids. At least the anemia and mental hebetude produced by bromids will be escaped from by the substitution. And how far these small doses of chloralamid can be properly used remains to be ascertained, but my experience has been satisfactory enough to lead me to continue their use in many of the nervous affections where irritability or pain are prominent.

There is such a thing as the chloral habit, which is much more readily stopped than the opium addiction, but whether it is too early to assert that there is or is not a chloralamid habit, certainly nothing denoting any liability to habituation has been prominently mentioned, though so far as that is concerned any drug that proves serviceable in continued suffering may be used too long, and the only question of concern is what undesirable consequences may come from such prolonged use. If chloralamid is a reconstituent hypnotic there can be no such bad effects following its over-indulgence as are recorded against opium and chloral.

It would be folly to expect that any single remedy for insomnia would be available in all instances, for just as sleepless states may be caused by any of the multitude of maladies to which the body is liable, so must there be numerous appropriate measures of relief, when relief is at all possible. The advice to seek and remove the cause of the sleeplessness is sensible enough, though in too many instances the cause is only conjecturable. Nevertheless, a rational system of hypnotic use can be secured on a physiologic basis, and with far more satisfactory results if we duly regard the cause of the loss of sleep and existing bodily conditions. For example, a dose of ergot in some hyperemic states may relieve pain or cause sleep by lessening the vascular tension upon which these disabilities depended. A hot bath may distribute the circulation and act derivatively upon organs which, when congested, caused the distress and wakefulness. Massage acts similarly when scientifically applied, and when unskilfully made use of may add to the discomfort; for example, if derivation from the head is set up by massage it will relieve cerebral hyperemia, but add to cerebral anemia, so this method must be resorted to with full knowledge of the physiologic results aimed at.

In a general way, we may classify hypnotic action as accomplished by derivation, such as by removing irritative quantitative causes; by elimination of quantitative or qualitative causes, as of some toxic agent; reconstructive action by resupplying parts in states of defective nutrition; sometimes by minimizing activity until rehabilitation can overtake waste with supply; by restoring normal function as with digitalis or alcoholics. The least desirable of all methods being such as merely stupefy and overload the circulation with effete or poisonous material through interfering with elimination, or by destructive changes induced in nerve tissues or the blood upon which the nerves depend for sustenance.

So eliminative functions should be kept in good repair, if possible, when almost any kind of a hypnotic is given, particularly such as are likely to add some toxic material to the system; but the ideal sleep procurer would be one that abstracted nothing from the nervous system that it contained normally, nor added thereto anything deleterious; and as sleep is a process of repair or feeding of the nerves and their ganglionic centers, still more effective would be whatever caused sleep by repair of such waste; and unless credible evidence to the contrary appears in the course of time, we are in possession of such a hypnotic in chloralamid.

"CAN TYPHOID FEVER BE ABORTED?"

A FEW ADDITIONAL CASES, THEIR PROGNOSIS AND TREATMENT.

Read before the Mahoning County Medical Society, Feb. 12, 1894.

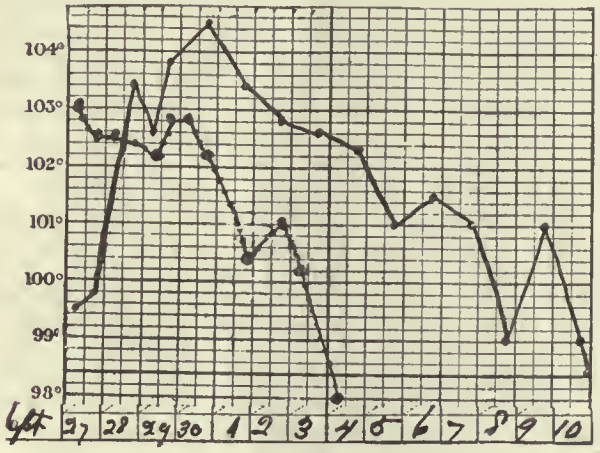
BY JOHN ELIOT WOODBRIDGE, M.D.
YOUNGSTOWN, OHIO.

[Continued from page 187, Feb. 10, 1894.]

In my last paper, published in the current issue of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, I concluded the history of my cases with No. 41, John Holland, and with a promise to report the case of his brother, Ralph Holland, together with six or eight other cases under treatment. Some of these cases recovered without having developed pathognomonic symptoms of typhoid fever, and consequently can not be reported as such.

Case 41—is especially interesting. I was not aware until several weeks after his recovery, that his attending physician, a personal friend of mine, after having made a diagnosis of typhoid fever, had been discharged and myself sent

for, although I *did* think the family unusually inquisitive; and answering questions I gave a diagnosis of typhoid fever and a prognosis of ten or twelve days sickness—no danger. On the seventh day of treatment when the rose spots were abundant and other symptoms well marked I asked Dr. Thomas, one of the best diagnosticians in our Society, to examine him and make a diagnosis; he did so and said: "Doctor, that is typhoid fever, and I will sustain you in that diagnosis at any and all times;" and added: "My experience with cases of this character is that recovery is slow and tedious." I said: "Well, I shall ask you to come here in two or three days to see a case of *aborted* typhoid fever." I said further: "Doctor, would you dare to give this man solid food?" "If he were my case I certainly should not," he said. Turning to the man I warned him of the opinions held by the best thinkers of the profession, and then asked him if he would be willing to eat a piece of beefsteak. He said: "Yes, if I told him to." He ate the steak without ill effects and on the ninth day I asked Dr. Thomas to reëxamine him when his temperature was 97. He was discharged cured on September 28. His brother, Case 47, residing with him, was taken sick September 29. Pulse 100; temperature 103. Tongue, severe headache and other symptoms characteristic; later, petechia abundant; duilness over spleen well marked. After treating him five days I wished to be away at the meeting of the Mississippi Valley Medical Association and the World's Fair, and asked Dr. McCurdy, a member of our Society, to take charge of him together with Cases 43 and 44 which he did continuing my treatment, so that in all these cases I had the advantage of his valued confirmation of my diagnosis. Temperature normal twelfth day.



Cases Nos. 43 and 44. Diagnosis, typhoid fever. Names, F. G. and Mrs. F. F. Date of admission, Sept. 27, 1893.

Case 45—was diagnosed by the attending physician, confirmed by counsel called from a neighboring town and after ten days I was sent for with the statement that little hope was entertained of his recovery. In five days his temperature was normal and recovery was rapid and complete. Oct. 31, 1893, Dr. J. J. Thomas who had seen the result of my treatment in two or three cases, telephoned me that he had a typical case of typhoid fever to which he would like to have my treatment applied. Examining the case, No. 49, I expressed the opinion that this was one of more than ten days' duration, that there was but a limited area involved, and that it was bordering closely on the stage of ulceration. He recovered in eighteen days.

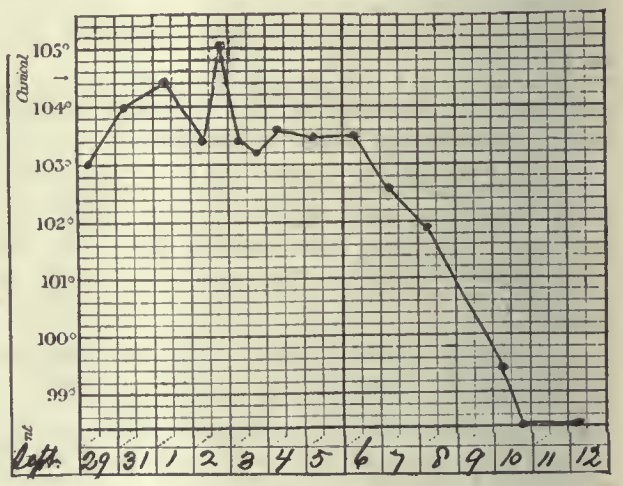
Case 50—presented well-marked and characteristic symptoms. (Recovery followed by alopecia.)

Cases 40, 46 and 48—are excluded from the estimate, because they recovered before a positive diagnosis was possible, as is also Case 42, because there was unquestionably ulceration of Peyer's glands before I was called.

Case 51—In the evening of Jan. 22, 1894, I was called to see Angus McFee. Examining him I said: "This man has had typhoid fever more than two weeks." They said: "Yes, he had a chill two weeks ago last night." The next morning I took Dr. McCurdy with me. We failed to get his morning temperature, which the night before had been 105½. He was voiding both urine and feces involuntarily, teeth, gums and lips covered with sordes which his faithful nurse, his wife, was unable to keep cleared away. His bowels were intensely tympanitic; in short, all symptoms characteristic. I hand you his chart to show the result of treatment during the first few days, which since has been far from satisfactory and the end is not yet. On returning from my first visit to McFee on January 22, I found a gentleman waiting to have me go to 221 Belmont Avenue to see Willis Hume supposed to have typhoid fever. He had been with his mother who was nursing her brother through a five weeks attack of the disease. His symptoms were well marked. Dr. Barnes examined him and confirmed my diagnosis. I hand you his chart, No. 52. Shortly afterward his brother, Guy Hume, was taken sick with symptoms of the disease. Pulse 112, temperature 104, but recovered before a positive diagnosis could be made.

On February 6 I was called to 940 Shehy Street to see Thomas Murdock, living within a few rods of McFee, his helper in the mill, and his friend and nurse during his present sickness. His symptoms were characteristic and indicated the beginning of a very severe attack of typhoid fever. His chart, No. 55, shows the result of treatment to the present time. After visiting him two or three times I told him he had typhoid fever, would be able to sit up and eat solid food in a few days. That there was no danger of his being as sick as his friend, or of dying. Dr. Robert D. Gibson, our last President, visited this case and confirmed the diagnosis.

Case 43—Frank Vogelbarger was a rather severe case of typhoid fever. I had attended his brother through an attack of the same disease some time before, from which he made a most satisfactory recovery. However, I did not keep a special record of his case.

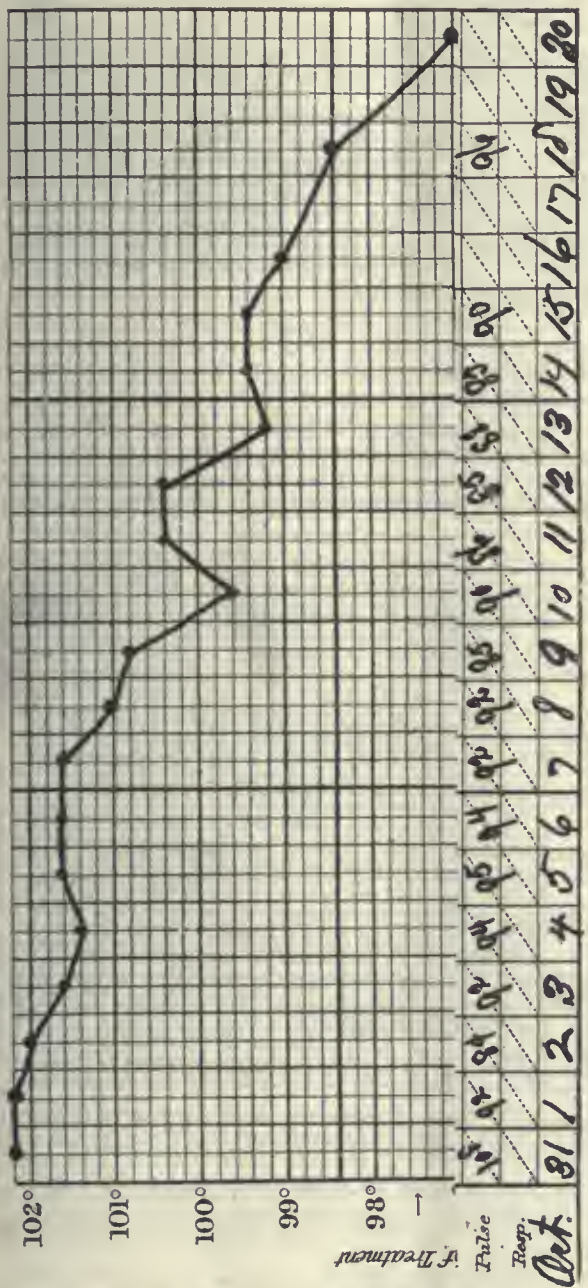


Case No. 47. Diagnosis, typhoid fever. Name, R. H. Date of admission, September 29.

With the exception of one patient who was dying when I was called, in consultation with the attending physician, and one other who had been sick thirty-five days, and recovered, and a few doubtful cases who recovered before a positive diagnosis was possible, these are *all* the cases of typhoid fever I have seen since my last paper was written. They round out more than twelve years of active work without a death in my private practice from this disease, while my brother practitioners are having no better average results than in former years, when *my* death rate was so high. Accept them for what they are worth, as additional evidence that my claim that typhoid fever can be aborted, and that the life of every uncomplicated case of typhoid fever can be saved is a valid one. That this claim will be hotly contested, no one familiar with the most recent literature on the subject can doubt.

What a contrast when compared with my personal experience during the first sixteen years of my practice, which amply justifies the editorial quoted in my last paper, when my death rate was enormous, and the average duration of illness of those who recov-

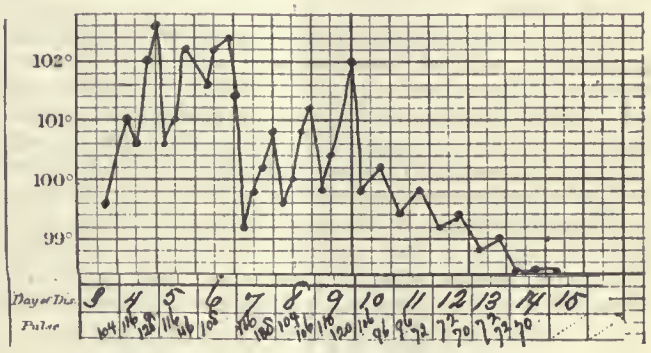
ered, as accurately as I can estimate it, was more than thirty-four days. As these estimates are made from memory aided by very insufficient data, the accidental omission of some of the milder cases may make both death rate and duration of disease too high. But giving myself the benefit of every doubt, and excluding the large percentage of those who died, the estimates show that those who recovered did so after more than a month of sickness that must have left their constitutions fearfully shattered. They



Case No. 49. Diagnosis, typhoid fever. Name, W. S.

recovered, too, probably more in defiance than as a result of treatment; a sad commentary on sixteen years of careful and conscientious work according to the best light obtainable from any text-book within my reach at that, or at the present time, as far as internal medication is concerned.

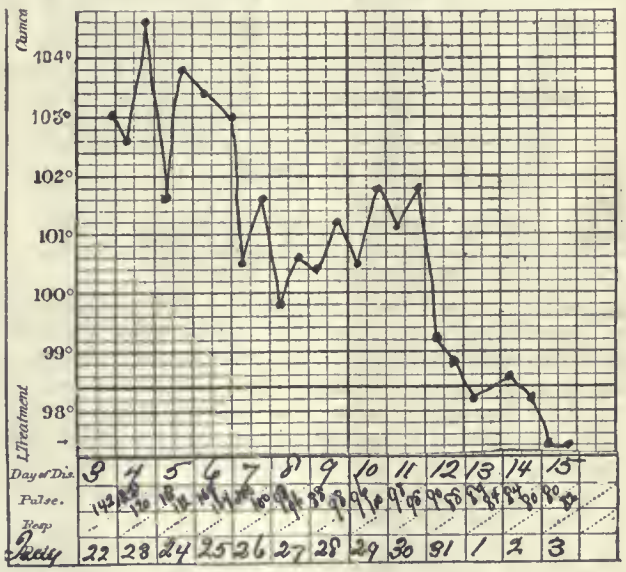
Do not understand me to state that the result of treatment during all of those sixteen years was equally bad. In 1876 a new light began to dawn on me, and during the following seven years to the beginning of 1882, when I had my last death from typhoid fever, my results were manifestly better, not alone in a greatly reduced death rate, but also in a great shortening of the average duration of sickness. In 1880, believing myself in possession of valuable knowledge on the treatment of typhoid fever, which ought to be given to my brother practitioners, I availed myself of the opportunity offered by a paper on the subject read in this Society by one of



Case No. 50. Name, B. C. W. W.

its ablest members; after criticising the paper in most unmeasured terms, I gave my own theories, and was much chagrined to find myself standing entirely alone in the advocacy of a method of treatment which, though crude indeed, had yielded to me most excellent results as compared with my earlier experiences.

Years passed, and in 1891 another paper on the same subject was read in this Society, advising a



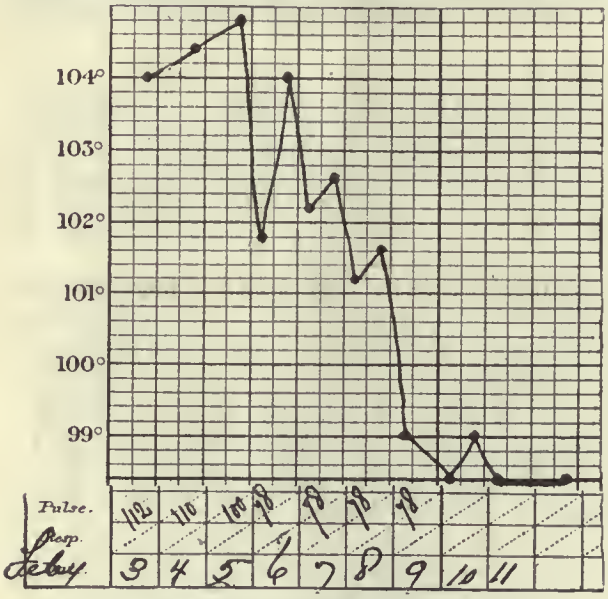
Case No. 52. Diagnosis, typhoid fever. Name, W. H. Date o admission, Jan. 22, 1894.

course of treatment only a little worse than the one I had so mercilessly criticised eleven years before. In criticising this last paper, after showing why its recommendations were not only unwise but absolutely dangerous, and driving its author to the refuge of the high authorities he had copied, and to the further statement that he had advised the remedies I had condemned as dangerous in *small* doses only; I said that I had long believed typhoid fever to be due to a germ having its earliest habitat in man in the ali-

mentary canal, and that when a germicide powerful enough to destroy the germ without detriment to the patient, could be brought in contact with it, that the problem of the abortive treatment of typhoid fever would have been solved, and that I believed the means of doing this were already at our disposal.

The questions now are, what are they, and how are they to be brought in contact with the germ they are intended to destroy, and what other object, if any, are we to seek to accomplish that we may most speedily restore our patients to their normal condition of health.

I must confess myself at a loss how to approach this part of my subject; admitting that the germ enters the system most frequently with the water and food taken into the stomach, finds lodgment there and multiplying, finds its way into the small intestines and further. I conceive that he will treat typhoid fever best who best measures the condition of his patient, or rather the extent of territory over which the germs have spread and the amount of mischief already done, and having done this, to select and apply his remedies in such manner as to most speedily stop their



Case No. 54. Diagnosis, typhoid fever. Name, D. N.

ravages and most effectually relieve the patient of the ptomaines, tox albumens, injuries to Peyer's glands or other ill effects of their temporary sojourn. This is a much too difficult task, I fear, for me to undertake to-night. Some time in the future I hope to give expression to my views on these points, but at present I think I can do no better than give the treatment of two or three typical cases, in connection with their bedside histories.

Case 51.—A. McF., (whose chart you have), as stated before, had been sick sixteen days when I was first called; his temperature was 105½; his bowels intensely tympanitic; he was voiding both urine and feces involuntarily. During the first two days he took about 60 minims eucalyptol,[1] 15 minims guaiacol,[1] 30 minims turpentine, and perpaps 15 grains of the following mixture:

No. 1.

℞	Podophyllin,	gr. i.
	Hydrarg. chlor. mitis.	ʒi.
	Guaiacol carb.	ʒ vi.
	Thymol	ʒ v.
	Menthol	ʒ i.
	Sacch. alb.	ʒ ii.
	Eucalyptol, (as much as possible).	
M.	In very minute doses every half hour to one hour.	

During the following three days, he took 2½ minims guaiacol and 5 minims eucalyptol every three or four hours all of the time, and part of the time double that quantity with an occasional 10 drop dose of turpentine added; and in addition small doses of quinin continuously every three hours; occasionally a 2½ grain tablet of Dover's powder. Nearly every day during his sickness, and sometimes twice a day, he had rubbed on his abdomen a mixture of eucalyptol and guaiacol, with the addition, sometimes, of turpentine. His kidneys failing to respond to the turpentine, there was given him a diuretic as follows:

No. 2.

℞	Potass acet.	ʒi.
	Spir. nitri. dulc.	ʒss.
	Aquæ dest. q. s. ad.	ʒiv.
Sig.	One teaspoonful every half hour in water or lemonade.	

And when the bowels became constipated "glycerin suppositories" were used. Whisky, milk, eggnog and Fairchild Brothers and Foster's panopepton were given freely. This is the first and only case in which I have ordered thorough and systematic sponging, in my own practice, during the past twelve years; and I did so in this case only because he came under my care on the sixteenth day of his sickness.

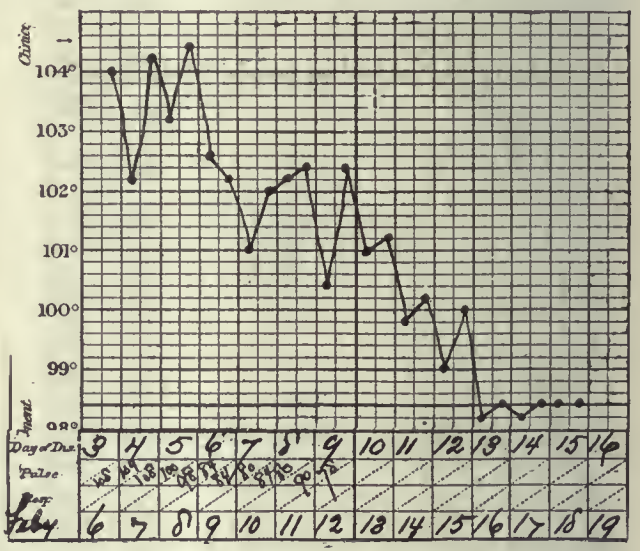
Case 52.—W. H. took ℞ No. 1 two days in about ¼ grain doses every thirty minutes.

For two days:

No. 3.

℞	Eucalyptol.	ʒss.
	Spir. rect.	ʒi.
	Guaiacol	ʒii.
	Aquæ dest. q. s. ad.	ʒiv.
Sig.	One-half teaspoonful every three or four hours.	

For one day, No. 1; No. 3, two days; No. 1, one day; then No. 3 until the temperature had been subnormal two days.



Case No. 55. Diagnosis, typhoid fever. Name, T. M. Date of admission, Feb. 6, 1894. Diet: Ate beefsteak on eighth day, beefsteak and blanc mange on ninth day, and whatever food he desired thereafter.

Case 55—T. M. took No. 1 two days; eucalyptol and guaiacol, two days; No. 1, one day; eucalyptol and guaiacol in one mixture, and thymol in another, to the present time. (Feb. 12, 1894.)

This was practically the course pursued with the cases reported. I should have much preferred giving exact rules for a general course of treatment, applicable to every case, but do not feel competent to do so; nor do I know how much medicine has been given in any case because I never wrote a prescription for any of these preparations, but have always carried them with me and I poured out a sufficient quantity to last a day or two and when exhausted replenished it from my case. Since I see my dilemma, however, I shall leave a definite quantity and in a future paper

write more concisely; and yet I fear it will ever be a difficult thing to lay down fixed rules by which to treat such a disease as typhoid fever, in which the symptoms of the disease constitute a very imperfect criterion by which to measure either its duration or gravity, and almost none for treatment. While my cases may have been too few to establish the value of my theory of treatment, they have been too many and the results have been too good to admit of longer silence on my part.

Thus far in my private practice I have had no death from typhoid fever for twelve years. I have been able to abort two or three cases when first seen on the tenth day, and *all* who came under my care on or before the eighth day of sickness. It may not be possible to abort every case, beginning on the eighth day, nor is it necessary, for when the profession and the people understand that typhoid fever can invariably be cured when proper treatment is instituted at a sufficiently early period, the physician will no longer wait until his patient is covered with petechia, or has had one or more hemorrhages before making a diagnosis or beginning treatment.

In conclusion, I beg the gentlemen to understand that in criticising these papers by Youngstown physicians I wish to cast no slur upon my brother members of this Society. Their work was neither better nor worse than the teachings of the most learned members of the profession. I believe that the members of this Society are the peers of an equal number of the members of the profession in any spot on the globe. And when I invite criticism of my claims here, I feel that I am standing before a tribunal that would quickly find errors, if there were errors to be found.

OPERATION FOR THE RELIEF OF VALVE-FORMATION AND STRICTURE OF THE URETER IN HYDRO- OR PYO-NEPHROSIS.

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In all cases of pyonephrosis we may expect to find some obstruction to the flow of urine either in the renal pelvis, the ureter, the bladder or the urethra. If the obstruction is external to the ureteral opening in the bladder, the pyonephrosis is double; if on one side, the obstruction must be in the ureter or the pelvis of the kidney.

Lumbar nephrotomy for pyonephrosis has a mortality of 23.3 per cent., and primary lumbar nephrectomy a mortality of 34 per cent. (Tuffier.)[1] Secondary nephrectomy must be made to close the fistula after some time has passed, but this should not be delayed until amyloid nephritis of the other kidney has set in. The mortality from this operation is low, 5.9 per cent. If we add the 5.9 per cent. mortality from secondary nephrectomy to the 23.3 per cent. mortality from primary nephrotomy, the total of 29.2 per cent. is still 7.8 per cent. less than the mortality from primary abdominal nephrectomy, which is 37 per cent. and 4.8 per cent. less than the mortality from primary lumbar nephrectomy, which is 34 per cent. Consequently, in pyonephrosis, nephrotomy is the operation of choice. (Tuffier.)

The disadvantage of nephrotomy as compared with nephrectomy for pyonephrosis is that a fistula remains in 45 per cent. of the cases. This means that after a time a secondary nephrectomy must be made. Fistulas remained in 34 per cent. of the cases of calculous pyelitis and in 54 per cent. of the cases of non-calculous pyelitis. The smaller number of fistulas in calculous pyelitis is to be accounted for by the fact that in a certain number of these cases, the stone prevents the passage of urine, and with the removal of the stone, the obstruction is removed. Where there is no stone, simple nephrotomy will leave the impediment in all cases. If in both calculous and non-calculous pyonephrosis we can reëstablish the permeability of the ureter, we may expect to materially diminish the percentage of permanent fistulas.

Tuffier, in the discussion of pyonephrosis, in his excellent monograph on surgery of the urinary organs remarks: "It would be interesting to know the condition of the ureter, the strictures, bands, valve-formations that transform an open pyelonephritis into a temporarily closed hydro- or pyonephrosis. As yet these investigations for the intermittent pyonephrosis have not been made."

VALVE FORMATION AND BENDING AT THE PELVIC ORIFICE OF THE URETER.

Valve formation and oblique insertion of the ureter was first noticed in a case reported by Glass[2] and cited by Rayer.[3] A girl was born with right hydronephrosis and died at age of 23. At autopsy three gallons of liquid was found in the sac. On interior surface of sac the orifice of the ureter was seen as large as a goose quill. The ureter passed obliquely for twelve inches between the membranes of the sac, and was patent the entire distance to the bladder. On account of the non-obstruction of ureter, Rayer considers this the most remarkable case on record.

Rayer observed a case of double hydronephrosis in which the ureters were also patent, which he attributes to congenital malformation. The patient was a boy of 17, who had been sickly all his life, and had had pain for seven years in the region of the left kidney. A tumor was found and the diagnosis made of left hydronephrosis. He died from septic infection of the sacs. At autopsy, left ureter was found patent, the upper portion situated in wall of sac with an opening almost similar to a valve in a vein. Water passed easily from below upward, but not down from the sac into the ureter. There was a smaller hydronephrosis in the right kidney. The right ureter was dilated to the size of a lead pencil from the bladder up to the sac. At the upper end it was retracted and when water was injected from below, it entered the sac through an opening the size of the lachrymal punctum.

Virchow[4] in discussing hydronephrosis remarks: "The cases are extraordinary in which hydronephrosis exists with the ureter patent. I have examined such cases several times, and have found in each case a valvular obstruction caused by folding of the wall, due to oblique origin of the ureter from the renal pelvis."

[1] A word of caution about guaiacol and eucalyptol. Many of the specimens of both, obtained from highly reputable houses are wholly unfit for administration. In my earlier experience I had some very unpleasant results, especially from eucalyptol, much of which is inert and some absolutely poisonous. I have a dozen or more samples in my office now, all obtained from the best sources, and yet one-tenth of an ordinary dose of some of these would act as a most violent emetic. I believe guaiacol carb. to be the best of its class.

Simon [5] gives a full and comprehensive description of this condition. The ureter does not enter the pelvis of the kidney at its lowest point, with a funnel-shaped opening, but enters it at the side, at an acute angle, and often even runs for a variable distance in the wall of the pelvis. In two similar observed cases, the ureter ran, not in the wall proper, but between the wall and the peritoneal covering for seven to ten centimeters. In contra-distinction to the previous authors, who thought that valve formation was the cause of the hydronephrosis and therefore congenital, Simon believes that the hydronephrosis in its beginning causes the valve-formation and consequently that valve-formation is not a congenital affection. He has examined a specimen in which a stone was found in the ureter five centimeters from the pelvic orifice, in a case of hydronephrosis the size of a child's head, and with valve-formation in the upper end of the ureter. He believes that temporary obstruction from any cause may produce sufficient asymmetrical dilatation of the pelvis to give rise to oblique insertion and valve-formation, which when it once exists, even if the primary cause of obstruction disappear, may remain as a permanent obstruction of greater or less degree to the passage of urine. He considers valve-formation in hydronephrosis very common, as he found it in eleven out of eighteen reported cases.

The mechanical aspect of valve-formation in the causation of intermittent hydronephrosis was studied by Krakauer,[6] who made experiments designed to explain the fact that spontaneous evacuation of urine is sometimes seen in hydronephrosis due to this cause. Acting upon the proposal of Simon, Krakauer produced an imitation of the hydronephrosis due to valve formation in the following manner: He caused to be made a rubber balloon having a capacity of 150 cubic centimeters with a tube which ran for several centimeters in the wall before opening at an acute angle into the side of the balloon. When the balloon was filled to distension he observed that the first fifty cubic centimeters were evacuated readily, the second fifty cubic centimeters less, and the remainder still less readily. From this experiment Krakauer concluded that a higher pressure in the balloon, equivalent to an over-filling of the distended pelvis, is capable of overcoming a greater hindrance or impediment in the tube of exit, the ureter, than is a lower pressure. Applying this fact to the obliquely inserted ureter in the dilated renal pelvis, he concludes that partial filling of the dilated pelvis will close the valve of entrance and permit no evacuation through the ureter; further accumulation of urine and over-distension of the dilated pelvis will overcome the obstacle and the urine will be evacuated through the ureter. This fact explains the intermittent hydronephrosis observed in Case 1.

Landau[7] states that intermittent hydronephrosis, where there is no gross pathologic impediment to the passage of urine, is not so rare as might be judged from the infrequency of reports of this condition in the literature. He has seen four cases, all women aged from 30 to 60 years. In one case, infection pyonephrosis and perinephritis took place which necessitated nephrotomy.

The etiology of this condition was given by Landau as: *a*, bending; *b*, torsion; *c*, oblique insertion of the ureter. These conditions caused stagnation of urine in the pelvis of the kidney, dilatation of the pelvis, and then compression of the upper part of the ureter by the distended pelvis. These pathologic conditions of the ureter are in many cases caused by floating kidney. Direct traction upon the ureter has also been reported as the cause of hydronephrosis in certain cases of prolapsus of the uterus.

The amount of secreting kidney substance left is very variable; more of it is to be found in the smaller tumors, but even in large tumors secreting kidney substance may be spread out over a large surface. In one of Simon's cases he could feel the calices from the tenth rib to the crest of the ilium.

The ureter is small on account of atrophy from non-use. Its upper portion, which passes up through or in the wall of the pelvis, is stenosed from pressure of the sac. Its opening into the pelvis is a narrow crescentic slit sometimes only a line in length and often difficult to find on the specimen. (Simon.)

Spontaneous cure with *restitutio ad integrum* is impossible, because more or less kidney substance must necessarily be destroyed by the dilatation; but a condition almost identical with recovery is seen when the obstacle to the passage of urine disappears spontaneously, as for instance when a stone passes away. This is only possible, however, when no secondary valve formation has taken place. (Simon.)

TREATMENT.

Nephrectomy.—In large hydronephroses, often mistaken for ovarian tumors, nephrectomy or rather extirpation, is exceedingly difficult, as hydronephrosis is a retro-peritoneal tumor, and as in the course of the extirpation the meso-colon must be divided. At the time of Simon's report the mortality was absolute; in two cases where total extirpation was made, and in four cases in which it was tried and given up as impossible, all the patients died.

Puncture and Aspiration—are only palliative measures, and in only one out of eleven cases collected by Simon was there even temporary improvement.

Nephrotomy.—An abdominal opening into the sac of a hydronephrosis can not be done without first procuring adhesions to the wall, either by leaving the canula in or by Recamier's cauterization. The patients died either from the operation or later from infection through the fistulas, with the exception of two out of the eight, one of whom, (Spencer Wells' case) recovered accidentally by passing of stones. In the other case (Simon's) a fistula remained. Spencer Wells'[8] case was as follows: "A woman of 50 had had intermittent attacks of pain in the region of the right kidney for seventeen years. Having made a diagnosis of intermittent pyonephrosis and finding a large tumor with indistinct outlines, on May 19, 1865, he evacuated by puncture through the abdomen with a fine trocar, two to three pints of pus. Eight days later he reopened the wound and dilated with a laminaria tent to evacuate the accumulated fluid. One month after the first puncture, on June 20, two uric acid calculi the size and shape of a broad bean passed, followed by relief. After a few weeks the tumor disappeared and the patient was well for the fifteen remaining years of her life."

Obliteration of Sac after Nephrotomy.—The difficulty, we might almost say impossibility of curing hydronephrosis without reëstablishing the passage through the ureter, is well illustrated by one of Simon's cases. A man of 22 had a hydronephrosis

of sixteen years' standing, for which five abdominal aspirations had been made in seven years. A large abdominal incision was made after double puncture to get adhesions. Unsuccessful attempts were made to obliterate the sac by cauterization of the sac wall and its kidney substance. Partial extirpation of the secreting kidney substance was abandoned on account of hemorrhage. After this, the daily secretion diminished one-fourth, but 150 cubic centimeters were still secreted. He then attempted to open up the ureter from the pelvis, without success, in the following manner: He filled the sac with milk, but none passed down into the bladder. He therefore concluded to open the pelvic ostium of the ureter, or dilate it if valve formation was present. He enlarged the abdominal wound until the opening would admit the hand and then searched all over with artificial light and probes, but in vain. A year later the patient's condition was satisfactory as to general health, but 150 to 180 cubic centimeters of fluid containing 0.7 per cent. to 1.1 per cent. of urea was passed daily.

Simon therefore came to the conclusion that it is probably impossible to obliterate the sac of a hydronephrosis as long as secreting kidney substance remains.

Reëstablishment of the Passage through the Ureter—would give the best results in the treatment of hydro- and pyonephrosis, even if no *restitutio ad integrum* of the kidney is possible. (Simon.) Spencer Wells' case has proven that a condition may result in which the patient may be restored to perfect health. If it should be possible to reopen the ureter, the same good results may be expected as in Spencer Wells' case.

There are two ways in which the ureter might be opened; from the bladder or from the pelvis of the kidney.

1. Catheterization of the Ureter from the Bladder.—This is considered by Simon as the more natural and easy way in women. He succeeded in finding the ureter in fifteen out of seventeen cases. He therefore proposes in this way to empty the contents of a hydro- or pyonephrosis, but he has never put the method in practice.

The catheterization proposed by Simon, was taken up by Pawlik[9] who constructed his ureteral sound, later improved by Howard Kelly.[10] The catheterization of the ureters in women has thus been made practicable, but for the purpose of overcoming stenosis, or the cure of pyo- or hydronephrosis, little or nothing has been accomplished.

Pawlik mentions a case from Billroth's clinic, of pyonephrosis in which he introduced through the ureter from the bladder, a long elastic catheter with a metal point, which passed through a stenosis of the ureter up into a cavity above. From previous nephrotomy, the patient had an abdomdominal fistula, a probe passed through which would touch the metal tip of the ureteral catheter. On attempting to withdraw the catheter, the tip was caught in the stenosis and broken off. Dr. v. Hacker removed it through the abdominal fistula.

Pawlik[11] cited by Alberran,[12] has two reports of cases of hydronephrosis in which his method was used. In one case (observation 6) cure was accomplished after thirty successive soundings of the ureter. In the other (observation 10) the ureter was impermeable and nephrotomy had to be resorted to. As regards leaving the catheter permanently in the ureter, Pawlik mentions a case of uretero-vaginal fistula in which a catheter was left in for seven days. Force was necessary to remove it and it was found incrusted with salts.

2. Catheterization of the Ureter from the Pelvis of the Kidney.—Simon, after his unsuccessful trial in the case above cited, states that the opening in the pelvis must be large, in order to find the ureteral opening, and still, even if access is good, we will probably be able only in exceptional cases to sound the ureter and remove the obstruction, because in large tumors there is valve formation and so small a pelvic ostium that it can not be found in the large cavity, anatomic landmarks being absent, by inspection either with natural or artificial light. It would be only in exceptional cases where the pelvic ostium is dilated or not too small that it could be found and a probe inserted. If the pelvic ostium was found, a stenosis could be dilated with bougies or knives and the valve might be operated upon by cutting the inner wall away. Simon, however, never had occasion to bring these proposals into execution.

Landau recommends not nephrectomy but rather abdominal nephrotomy, eventually followed by probing of the ureter and perhaps by high fixation of the hydronephrotic sac, nephropexy, so as to facilitate the exit of urine from the pelvis into the ureter. Landau, however, has not yet operated in this manner.

The valve formation can be remedied by a plastic operation after previous opening of the dilated pelvis following lumbar nephrotomy. It is natural to select the lumbar region for entering the pelvis because the operation is extra-peritoneal, and consequently there is no danger of infecting the peritoneal cavity, and because the lumbar incision gives the readiest access to the upper portion of the ureter. If it is possible in this manner to reëstablish the flow of urine, we can save for future function what active kidney tissue may be left, the danger of primary nephrectomy is avoided, and the patient may regain perfect health without urinary fistula. That this can be accomplished satisfactorily and promptly is illustrated by the following case:

Case 1.—Synopsis: Valvular stricture or stenosis of pelvic orifice of ureter in a somewhat floating kidney; intermittent hydronephrosis for eight years; more and more frequent attacks until finally one a week; nephrotomy in interval between attacks; no stone in pelvis; pelvic orifice of ureter could not be found through opening in kidney; incision of pelvis; valvular opening of ureter seen; plastic operation on valve; bougie left in ureter for two days; pelvic wound sutured; fixation of floating kidney; recovery without fistula.

Mrs. D. H. consulted me at my office Feb. 22, 1892. She gave the following history: Age 28; family history good; previous health good; married eight years; two children living, one dead. Four months after marriage had an attack of pain in the region of the left kidney, with the formation of a tumor at the site of pain, immovable and tender on pressure. At the end of two weeks, tumor and pain suddenly disappeared. Two or three days after the birth of her first child she had a similar attack which lasted about eight days. She had intermittent attacks, every month or two from that time until 1878. The attacks varied little in intensity and persisted usually for about one week. In September, 1888, after the birth of her third child she had a severe attack of pain in the region of the kidney with frequent shooting pains along the course of the ureter and accompanied by a swelling, tender on pressure, and by difficult but painless micturition. This attack lasted for two or three weeks. Since that time she has had similar attacks every two weeks, which last on the average two days, and

are always accompanied by difficult urination. The last attack, which occurred on Feb. 8, 1892, lasted for a week. Since that time she has had no pain.

The patient began to menstruate at 10 years of age and has been regular until a year ago. Flow normal, but considerable dysmenorrhea. For the past year menstruation has been irregular, every two to four weeks, but the flow has been normal.

Present condition: The patient is somewhat emaciated, has a nervous suffering expression, not pale, abdomen easy to palpate, heart and lungs normal. Temperature 99 degrees. Urine contains pus, but neither albumen nor sugar.

On March 11, during an attack of pain, a tumor could be felt in the region of the left kidney, but five days later no tumor could be found. During and immediately after the disappearance of the tumor the urine was milky from pus. May 24 she had another attack which lasted two days. During the days of pain, urine is scanty and dark-colored.

Diagnosis: Intermittent hydronephrosis; stenosis in pelvis of kidney or ureter, probably from stone. Advised nephrotomy, removal of stone from kidney or ureter without opening into ureter if possible. If necessary to open ureter, pass bougie from opening in kidney to bladder, and suture ureter over bougie.

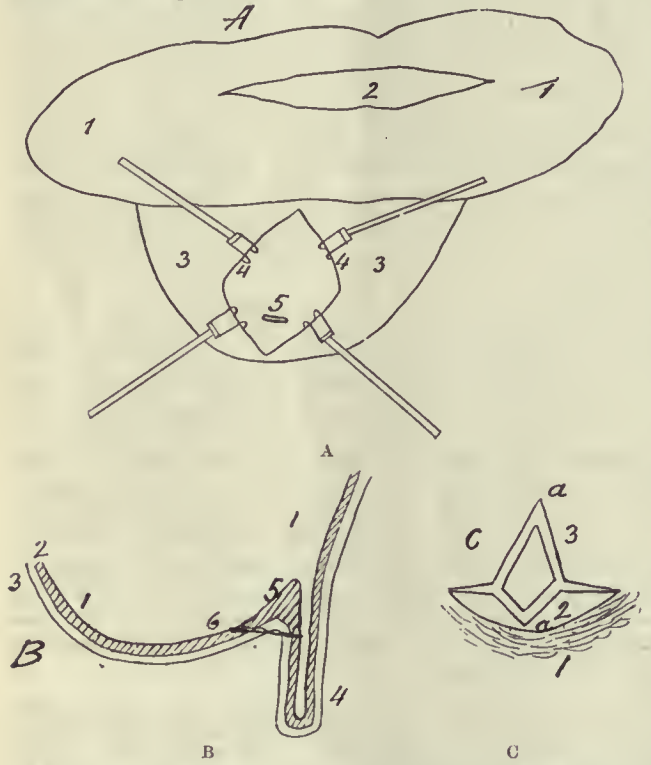


Fig. 1.—CASE 1.—ILLUSTRATING OPERATION FOR VALVE FORMATION.

A.—Kidney and dilated pelvis 1, kidney; 2, opening on its convex surface after nephrotomy; 3, dilated pelvis, 4, with opening on its posterior surface from pelviotomy; 5, opening of the ureter into the pelvis, a small transverse crescent-shaped slit.

B.—Dilated pelvis and ureter, showing valve-formation. 1, pelvis; 2, mucous membrane; 3, muscular and external coat; 4, ureter; 5, valve; 6, line of incision dividing valve.

C.—Valve seen from the pelvis and divided to illustrate the plastic operation. 1, Inner wall of pelvis above the ureteral opening; 2, ureteral opening; 3, the divided valve; a and a' the corners of incision to be united by a suture.

Operation: May 31, at the Emergency Hospital in the presence of the doctors from the Policlinic, and Drs. Waters, Bernauer and Krost, the patient was anesthetized with ether, and placed on the right side with a pillow under the loin. No tumor could be felt. An incision four inches long was made from the angle of the twelfth rib and the extensor dorsi muscle, obliquely downward and forward to the iliac crest above the anterior superior spine. It was necessary to divide the quadratus lumborum for an inch and a half below the rib, in order to gain space for operating. The transversalis fascia was now divided. The retro-peritoneal adipose tissue was scanty. Two tumors could now be felt; one close under the margin of the ribs was recognized as the spleen. Behind and below this could be felt the convex posterior border of the left kidney. During inspiration the spleen was pushed down upon the kidney, but it could be easily replaced. Dissection of the adipose capsule from the kidney was difficult, on account of a plastic perinephritis which had made the capsule tense and adherent to the kidney. The surface of the kidney was not smooth and glistening, but velvety from connective tissue strips. By pressure over the anterior portion of the lumbar region of the abdomen, the kidney was pushed into the wound and the adipose capsule dissected off by forceps and the finger, so as to permit palpation of the kidney between the thumb and index finger. The kidney was rather small, three and one-half inches long, one and one-half inches broad and one and one-half inches thick. Neither hard or soft spots could be felt. Palpation of the pelvis was accomplished by pushing the fingers of the left hand forward toward the hilum, holding the upper half of the kidney meanwhile between the thumb and index finger of the right hand. The pelvis contained no fluid and no stone could be felt. Following down from the pelvis no ureter could be felt, nor could any hard spot or stone be discovered.

A long exploring needle was introduced through the convex surface of the kidney, at a point between the middle and lower thirds, in the direction of the pelvis for a distance of two inches. An empty cavity was entered by the needle, in which no stone could be felt. The needle was next inserted into the upper half of the kidney but neither fluid or stone could be felt.

The pelvis was now opened through the kidney by means of the Paquelin cautery along the needle as a guide, in the middle third of the kidney. The hemorrhage was slight; no fluid escaped. The opening was dilated with forceps so as to permit palpation of the pelvis and calices with the left index finger. The calices were dilated, but still the kidney substance was half an inch thick. The pelvis was a large cavity extending to the lower border of the kidney with a round, smooth, soft surface. No stone could be felt, nor was the ureteral entrance perceptible to the finger. Through a small opening, or over a ridge, the palpating finger could be passed into the upper part of the pelvis. The calices here were dilated but no stone could be felt. Examination with a steel urethral sound gave similar negative results.

In order to find, if possible, a stone in the ureter a small bent metal probe was passed into the pelvis, but the ureteral entrance could not be discovered. The dilated pelvis was now isolated and opened for ocular inspection, to determine the pelvic entrance to the ureter. The lower third of the kidney was lifted forward and drawn into the wound by means of a blunt retractor passed through the wound in the kidney, the posterior surface of the pelvis isolated from the adipose tissue and an incision three-quarters of an inch to an inch in length, made obliquely downward from about one-quarter of an inch from the hilum of the kidney. The wall of the pelvis was two millimeters thick. Neither fluid or urine escaped. The borders of the wound were grasped and held open with forceps. The inner surface of the pelvis was now seen to be normal in color and appearance. At the lower posterior portion of its inner wall was seen a small semicircular opening two lines in length from above downward, and three lines in transverse diameter. The posterior border was convex; the anterior border straight. A metal probe introduced through this opening passed easily down seven or eight inches into the bladder without encountering resistance, either from stricture or stone.

An olive pointed bougie, No. 5 French, which was passed down was tightly grasped by the ureter. By lifting up the pelvis the ureter could now be palpated. The wall was thin and seemed liable to rupture unless great care was exercised. The bougie was removed and on again lifting the pelvis and inspecting the entrance into the ureter it was seen that the ureter came off not from the most dependent portion of the dilated pelvis, but from its posterior half or wall. Thus the anterior straight border of the ureteral entrance formed a valve or fold, resembling the valve in a vein, which would close against the posterior wall of the opening when the pelvis was filled with urine or fluid to a slight or medium degree. A greater degree of dilatation would push away the posterior wall of the pelvis and thus reopen the entrance to the ureter. This accounted for the evacuation of urine containing pus after a period of occlusion of two days duration.

To do away with this valve formation, the following operation was performed on the plan of the Heinecke-Mikulicz operation for stricture of the pylorus (Fig. 1.): An incision two and a half lines in length was made through the mucous membrane into the muscular wall or fold of the pelvis. The terminal points of the incision through the valve were now approximated by a fine silk suture, thereby changing the

former vertical incision into a horizontal line. The entrance into the ureter was by this means made wider and more nearly circular.

A No. 11 French bougie was now passed through the opening in the pelvis down five inches into the ureter, and the upper end brought up through the pelvis and out of the wound in the kidney, to keep the opening into the ureter dilated during healing of the wound.

The incision in the pelvis was united by ten fine silk interrupted sutures passed through the pelvic wall but not including the mucosa. A piece of the cortical substance of the kidney was removed for microscopic examination.

The kidney was now replaced and fixed in normal position by two sutures passed through it which anchored it to the transversalis fascia. The pelvis was drained by a rubber drainage tube half an inch in diameter, inserted along the side of the bougie through the wound in the kidney, into the pelvis. The drainage of the external wound was accomplished by the employment of a gauze drain on anterior surface of the kidney, one on posterior surface of kidney, one down along the ureter and a rubber drainage tube on posterior surface of pelvis, over the wound in the pelvis. The lower part of the abdominal wound was united by silk sutures; the upper half left open for drainage and the usual dressings applied. The operation required two hours; at its close the patient was in good condition; pulse strong, 90; the operation was mechanically easy on account of the lax abdominal walls due to childbearing and the leanness of the patient.

The bougie was removed on the second day. The patient suffered considerable pain for four days; the pain along the course of the ureter persisted for two weeks. Four weeks after the operation the tube was removed and a smaller one introduced which was taken out a week later. The discharge was excessive at first but gradually decreased. Two weeks after operation she could lie on the left side without pain. The patient recovered without fistula and up to the present time has had no return of the hydronephrosis.

A somewhat different method of operating on this valve has been suggested by Küster,[13] but has not yet been tried. He reports a case in which he divided the valve longitudinally as I did. He proposed to freshen each flap and unite it by sutures to the freshened inner wall of the sac. Küster was not able to carry out this plan because he found in addition to the valve, a stricture in the ureter two centimeters below the pelvis. This condition caused him to resect the upper three centimeters of the ureter and unite the upper end of the distal portion to the pelvis by a plastic operation to which I shall refer later.

It appears to me that my method of operating upon the valve is simpler than Küster's; his requires at least two sutures, mine only one; the method, moreover, proved efficient in my case just reported.

STRICTURES IN THE UPPER PORTION OF THE URETER.

It has been seen, in the description of valve formation, that stricture often forms in the portion of the ureter located in the wall of the dilated pelvis; but this stricture is treated by the operation for valve formation—as described above. Independent strictures below the pelvis require different treatment. If such strictures are single and accessible they can be operated upon with a view to reëstablishing the continuity of the canal.

Outside of observations at the postmortem table, little attention has been called to the question of strictures of the ureter, because in the cases of hydro- and pyonephrosis operated upon, the kidney has been opened or extirpated, and no attention has been paid to the ureter. From the postmortem table we know that multiple strictures can be found as a result of chronic inflammation of the canal, as in the instance depicted by Hallé[14] mentioned by Tuffier, in which not less than three strictures were found, the canal between the strictures being dilated. It is doubtful if cases of this kind would be suitable for operation.

As a result of traumatism, limited strictures have been seen to be formed, as in the cases of Pye-Smith[15] and Sollier.[16] Pye-Smith reports the following case of stricture of the ureter and dilatation of the kidney, apparently of traumatic origin:

PYE-SMITH'S CASE.

Aug. 16, 1871. Guy's Hospital. Male, 24; farrier. Never had stricture. Frequently been kicked in abdomen. Two years before kicked on left side "under the short ribs" and passed blood with urine several days. In bed only three days. August 7, diarrhea, swelling of abdomen, vomiting, pain in abdomen. No difficulty in passing water. Examination: Large tumor occupying left half of abdomen, smooth, deep fluctuation. Urine contained trace of albumen. Diagnosis: Probable vascular fibro-cystic growth. August 22. Tapped, and six and one-half pints of a reddish fluid containing pus and blood corpuscles flowed out. Tumor gradually filled and was again tapped. Patient improved and went home in October. He had return of the diarrhea and died October 14. Autopsy October 17: Renal tumor firmly adherent to surroundings. Right kidney swollen, early parenchymatous nephritis. Bladder normal, ureter dilated one and one-half inches, then contracted so as not to admit smallest probe. No impacted calculus; no sign of recent inflammation. Tumor; little renal tissue remained. Organ dilated into a series of communicating cysts containing yellow puriform fluid; scarcely any blood. No trace of calculus; no cheesy material. No abnormal tissue. In one of the cavities vegetable fibers, apple core and fragment of clove were found; therefore opening must have existed during life with communication with adherent bowel. Disease probably traumatic. Ureter probably injured. During two years following, canal was gradually contracting and forming stricture. Consequently, pelvis of kidney gradually expanded. Adhesion to colon determined diarrhea and suppuration from which patient died.

Sollier's case was one of traumatic stricture of the ureter in a man of 45 who, in 1870, sustained a traumatism by a kick from a horse in the left hypochondrium. The injury was followed by pain in the left side gradually increasing for nine years, when symptoms of nephritis appeared and the patient died from uremia. At the autopsy it was found that the left kidney had been transformed into a number of cavities the size of nuts. The calices, pelvis and upper portion of ureter were dilated. In the middle portion of the ureter was found a "cicatricial stenosis." Hypertrophy of the heart was found which had already been diagnosed during the patient's life.

Little is also known as to the frequency of strictures, but it may possibly be concluded from the frequency of permanent urinary fistulas following nephrotomy that they are not of infrequent occurrence. Tuffier states that fistulas followed nephrotomy in 45 per cent. of the cases collected, and we are forced to believe that the permanency of the fistula is caused by imperviousness of the ureter either from valve-formation or from stricture. How often this is caused by a stone lodged in the canal and how often by a stricture without stone we will not know until the ureter has been investigated by probing from above in a large number of nephrotomies. From the statistics collected by Tuffier, which show that nephrotomy for calculous pyelitis was followed by 34 per cent of fistulas in 114 collected cases, and that nephrotomy for non-calculous pyelitis was followed by 57 per cent. of fistulas, we can not draw any certain conclusions as to the frequency of stricture in non-calculous pyelitis as compared with the frequency of stones in the ureter; but it is likely that strictures are common.

As to the frequency with which strictures occur in different parts of the ureter, we have a statement from Tuffier to the effect that in twenty-nine instances of congenital hydronephrosis, a stricture was found in the upper end of the ureter in fifteen cases, and at

the lower end in fourteen. In Sollier's case of traumatic stricture, it was located in the middle portion of the ureter.

The question of gaining access to different portions of the ureter in order to overcome obstruction, has been solved as far as the removal of stones is concerned, by a number of operations already on record as follows: The vesical end of the ureter has been reached from the bladder by Emmet, Richmond and others; from the vagina, by Emmet and Cabot.

The pelvic portion of the ureter has been reached by extra-peritoneal lumbar incision, and the stones removed either by pushing them up into the pelvis, and pyelotomy in four cases (Tuffier), or by longitudinal incision of the ureter, in four cases (Tuffier), and in my case published in *Chicago Medical Recorder*.

From the middle portion of the ureter, stones have been removed in four cases (Tuffier,) by longitudinal ureterotomy by the prolonged lumbar incision. There is no difficulty in gaining access to the upper two-thirds or three-fourths of the ureter by the oblique lumbar incision. It is different with the lower third or fourth of the ureter, which is located deep down in the pelvis, and is even held by La Dentu to be inaccessible. But Cabot has justly pointed out that this portion of the ureter is also accessible without opening into the peritoneum by means of the sacral operation of Kraske, with removal of part of the sacrum, or temporary resection of the latter.

As far as strictures are concerned, there have as yet been made only two attempts at operating, namely, by Küster and myself, and a successful result in both cases was reached by a somewhat different method. Both were strictures in the upper part of the ureter close to the pelvis of the kidney.

Küster resorted to resection of the narrow portion of the ureter and united the distal portion to the pelvis of the kidney. His most remarkable and interesting case was as follows:

The patient was a boy 11 years of age. As a baby and until his fifth year he was sickly, but afterwards was healthy. In June, 1889, spontaneous enlargement of the abdomen was noticed accompanied by pain. This was diagnosed as left hydronephrosis. The urine was clear and sufficient in quantity, indicating open hydronephrosis. On June 23, Professor Braun made a lumbar nephrotomy which was followed by vesical anuria and the patient left the hospital with a fistula.

On May 25, 1891, the boy was seen by Küster. The fistula was permanent and little or no urine came from the bladder. The fistula in the lumbar region was dilated and digital exploration of the pelvis made. Catheterization of the ureter from the dilated pelvis could not be effected. The operation was followed by septic pyelitis.

July 14, 1891, it was decided to attempt to make the ureter patent, which was accomplished by Küster in the following manner: A lumbar extra-peritoneal incision was first made into the sac, but the ureter could not be found. The lower end of the sac, the dilated pelvis, was then incised, on the upper border of which was seen a layer of kidney substance the thickness of a thumb. The ureter could now be seen running several centimeters in or upon the posterior wall of the sac, and terminating in a slit in the pelvis. It was then intended to divide the pelvic wall of the ureter by pushing a probe-pointed knife down into the ureter from the pelvis to a point close to its exit from the sac to spread out the divided walls and unite them to the wall of the sac, thus making a funnel-shaped opening into the ureter. (See Fig. 2); but on attempting to introduce a fine probe into the ureter, a stricture was encountered two centimeters below the pelvis. The ureter was therefore divided from above downward, as far as the stricture, through which a fine probe could now be passed.

As cure seemed impossible without removing the stricture, the ureter was transversely divided below the stricture and at the entrance to the sac. The ureter was now united to the pelvis by dividing the upper end of the ureter, unfolding the divided end, suturing it to the opening into the sac, and closing the remainder of the wound in the pelvis by catgut sutures.

The next day some bloody urine escaped into the bladder, but ordinarily the urine passed out through the lumbar fistula. From this time more and more urine passed into the bladder, until four months after the operation as much as 100 cubic centimeters passed in the twenty-four hours. The pelvis was now washed out for pyuria with one-fourth of 1 per cent. solution of nitrate of silver; this was followed by local and general improvement.

Nov. 6, 1891, the fistula was closed by curetting, dilating and closing the canal by step sutures. In the first twenty-four hours after the operation the patient passed 1,300 cubic centimeters of bloody urine from the bladder. He recovered, but with a lumbar hernia which had to be held in place with a bandage; the fistula remained closed. The boy is able to work and has excellent health. The urine contains a few pus corpuscles and a small quantity of albumen.

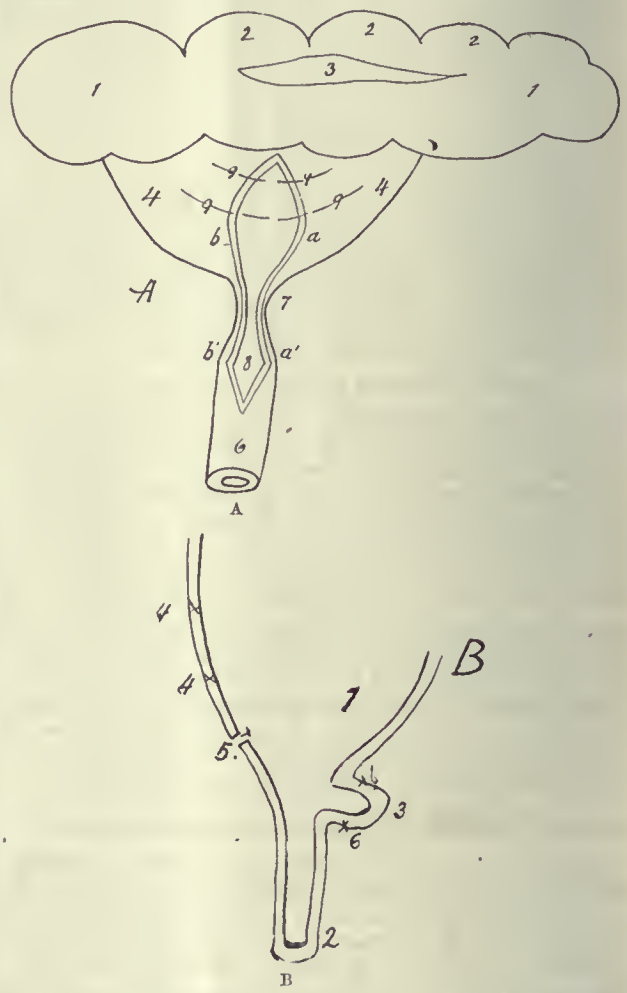


Fig. 2. CASE 2. ILLUSTRATING OPERATION FOR STRICTURE OF URETER.

A.—Sacculated kidney, dilated pelvis, ureter with stricture at its upper end. 1, kidney; 2, sacs corresponding to dilated calices; 3, nephrotomy; 4, dilated pelvis; 5, opening in posterior surface of pelvis-pelviotomy wound; 6, ureter below stricture; 7, stricture in upper end of ureter; 8, opening in ureter below stricture, extending up through the stricture into the pelvis; 9, sutures closing the upper half of the wound in the pelvis; a-a' and b-b', points of incision in ureter and pelvis to be united by sutures after folding the ureter upon itself at the place of stricture.

B.—Pelvis and ureter after union by sutures. 1, pelvis; 2, ureter; 3, fold of ureter at place of stricture; 4, sutures of wound in pelvis; 5, place of sutures between points a-a' and b-b'; 6, 6, additional sutures, as many as needed, to close borders of the fold formed by approximations of a to a' and b to b'.

Plastic operation on the stricture without resection of the ureter was practiced by me in the following case:

Case 2.—Synopsis: Traumatic stricture of ureter close to entrance into pelvis of the kidney; intermittent pyoneph-

rosis of four years' standing; increased frequency of attacks; nephrotomy; no stone found in sacculated kidney; ureteral entrance could neither be found through wound in kidney nor through incised pelvis; longitudinal ureterotomy revealed stricture at upper end of ureter; longitudinal division of stricture and plastic operation on ureter; recovery without fistula in six weeks.

W. B., a farmer 47 years of age came under my care Nov. 12, 1892. Father died as a result of accident. Mother dead; cause unknown; one brother died of phthisis. Patient's health good up to age of 13. The present trouble dates back thirty-four years, when as a boy of 13, in jumping from a horse to the ground, on account of miscalculation of distance he sustained a violent jerk, his feet not having touched the ground while his hands still retained hold of the hames. This injury was immediately followed by a sharp constant pain in the left side, which was mitigated by blistering, but he was obliged to remain in bed for a month. He suffered no inconvenience with the exception of slight soreness in the region of the left kidney, increased by hard work, until ten years later when, after over-exertion, he had an attack of sharp pain in the left side; at this time he was in bed about a week. One year later he had a third attack which followed free indulgence in liquor. This attack was attended by pain, soreness and obstinate constipation. For the next ten or fifteen years he had four or five attacks a year, lasting from two to three days and always after indulgence in liquor. During the last six years the attacks have apparently been caused by over-exertion, with the exception of one attack a year ago for which no cause could be assigned. The last attack occurred Oct. 22, 1892. It was no more violent than previous attacks but was of longer duration.

Examination: Nov. 12, 1892. Patient well nourished. In left hypochondrium could be found a tumor immovable, hard and not nodular, which extended two inches below the ribs and to within three inches of the umbilicus. Temperature 101 degrees; urine contained a little pus. Diagnosis: Nephrolithiasis in the pelvis or infundibulum, or pyonephrosis from stone or obstruction in the ureter.

November 26. For the past week there has been more pus in the urine, indicating that the contents of the pyonephrosis has been evacuated through the ureter. Examination in narcosis showed that the tumor had disappeared. Operation at the German Hospital. The patient was anesthetized with ether and placed on the right side with a pillow under the loin. An incision was made from the angle of the twelfth rib six inches downward and forward, to within one inch above and anterior to the crest of the ilium. The muscles were strong. After division of the transversalis fascia and removal of a layer of adipose tissue, the adipose capsule of the kidney was exposed, which was so adherent to the surface of the kidney that when it was removed the fibrous capsule was stripped off also. The exposed surface of the kidney was not shining but was red and velvety. It was nodulated, each nodule forming a flat prominence, about two centimeters in diameter. Each prominence was compressible and resembled a dilated calyx. The kidney was of normal size, about nine centimeters long, four centimeters broad and three centimeters thick. In one place a cyst the size of a pea with clear yellowish contents was seen. After excision of a piece of the kidney substance for microscopic examination, the dilated cavity of pelvis and calices was opened, and a jet of urine tinged with pus came out over the wound. The incision along the convex border of the kidney was enlarged by the Paquelin cautery.

Digital exploration revealed that the globular protuberances were dilated calices, which communicated with the pelvis, forming a common cavity. Some of the calices had openings large enough to admit the tip of the finger; others had openings which would admit a No. 10 urethral sound. No small abscesses could be seen on the surface of the kidney or in the incised substance. The protuberances now appeared to be collapsed, but a reasonable amount of kidney substance appeared to be present, especially in the lower part. The index finger was passed through the wound in the kidney down into the pelvis which was seven centimeters long and four centimeters deep. The wall was smooth and there was no stone or gravel. Neither by the palpating finger nor by the sound or probe could anything be discovered resembling an entrance to the ureter.

The kidney was therefore lifted up over the border of the twelfth rib, so that its anterior surface was directed upward and toward the median line, and its posterior surface backward and downward, thus exposing the posterior surface of the dilated ureteral half of the pelvis. A longitudinal incision, one inch long, was made in the pelvis and the edges held apart with retractors. The pelvic mucosa looked red and inflamed, but no ureteral entrance could be seen or felt.

The external wound was now prolonged downward for an inch and a half, to within an inch of the anterior superior spine of the ilium, to secure more operating space. The ureter could now be seen as a string or band, not dilated. Its upper end for half an inch was imbedded in cicatricial tissue. A longitudinal incision one centimeter long was made in the ureter half or three-quarters of an inch below the pelvic opening. A small metal probe introduced into the ureter through this incision passed downward freely for six inches. In passing it upward, however, a stricture was found just below the point of entrance of the ureter into the pelvis. The ureter was adherent to the surrounding adipose tissue at this point. The adhesions were separated by the handle of the scalpel and the stricture opened by a longitudinal incision on the probe as a guide. The opened stricture was seen to be one centimeter long. The remainder of the ureter was examined by a French bougie, which would pass down four or five inches, but would then be caught by the ureter. There was no stricture, but a diffuse atrophic narrowing of the ureter. A fine probe or a small bougie could, however, be passed without difficulty into the bladder.

The patency of the ureter was reëstablished by uniting the wall of the ureter below the stricture to the pelvic wall, leaving the stricture as a loop as shown in Fig. 3. This procedure was similar to the Heinecke-Mikulicz operation upon the pylorus.

The upper part of the wound in the pelvis was closed by sutures. No bougie was left in the ureter. The wound was drained by a large tube passed into the wound in the kidney three inches upward to the upper corner of the kidney. A smaller drain was passed down to the pelvis and ureter. Gauze strips were packed around the anterior and posterior surfaces of the kidney, and three inches down along the ureter. The divided muscles of the abdominal wall were then united, with the exception of the lower three inches, which was packed with gauze. The external wound was united by sutures and dressed in the usual way. The operation occupied two hours. The patient was weak at its close, pulse 130; much pain along course of ureter. The next day he passed naturally water containing no blood. The wound was dressed daily, and the dressings were found to be saturated with five ounces of urine. The amount was determined by the difference in weight of the dressings on application and after removal. The patient steadily improved. The pain decreased, and the amount of urine in the dressings became progressively less. November 29 to 31 blood was found in the urine, which showed that the ureter was patent from the third day after the operation. December 19, half the tube was removed and a day later the remainder was taken out.

Jan. 5, 1893, the wound was closed. The patient was well and strong, suffered no pain and could walk around all day. No tumor could be made out. Pressure in renal region was painless. The urine at this time was normal in quantity, forty-six ounces, and upon microscopic examination of the sediment a few pus cells could be seen. No trace of albumen could be found in the urine. The patient thinks he has gained flesh and is much better than before the operation.

November 14 while the tumor was present and the temperature high, the quantity of urine for the twenty-four hours was eighteen ounces. After the disappearance of the tumor on November 17 and 18, the temperature fell to normal, and the amount of urine increased to thirty-four ounces on November 19, and to thirty-two ounces on November 20. On the evening of the day of operation the patient passed eighteen ounces of urine; on November 27, twenty-six ounces; on November 28, thirty-two ounces, and from this time on the amount of urine passed averaged thirty ounces a day.

Reunion of a transversely divided ureter first studied experimentally on dogs by Tuffier[17] and others, was not successful until the method of invaginating the upper into the lower portion was devised by Poggi[18] and Van Hook. It was first practiced successfully in man by Kelly who used Van Hook's method. Poggi found that by invaginating the upper end into the lower, union would take place. He divided both ureters in dogs, dilated the lower end

with a forceps, invaginated the upper end into the lower and united with sutures. When the animals were killed fifteen days and three and one-half months later, respectively, he found union without stenosis at the point of operation.

Van Hook [19] in a preliminary contribution has also succeeded in reuniting the completely divided ureter by a different method which might be termed lateral implantation of the upper into the lower end after the closure of the end of the latter. In a very elaborate paper upon the surgery of the ureter [20] he gives the reasons why his method of lateral implantation is preferable to the simple invagination of Poggi. He believes that the ureter can sustain resection involving a considerable amount of tissue, since ureters measuring ten inches while in situ will easily measure twelve to fourteen inches when removed, and he further remarks that traction on the divided ends, is probably admissible to a very considerable extent.

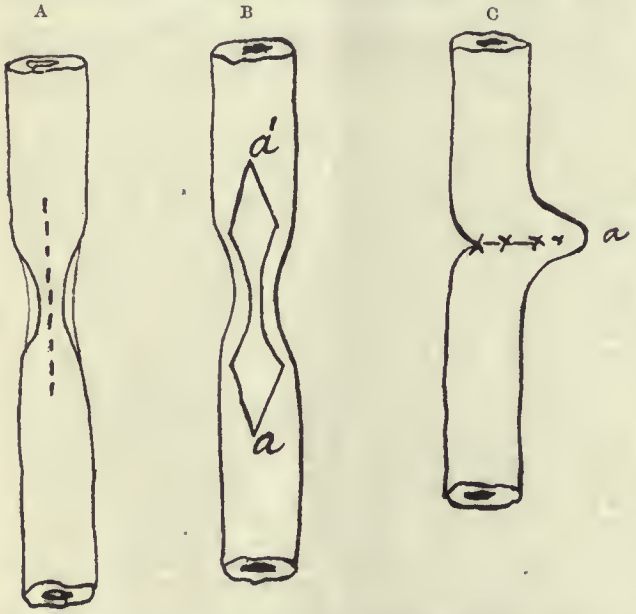


FIG. 3.—MY PLAN OF OPERATING FOR URETERAL STRICTURE ON EXTRA-PERITONEAL SURFACE OF URETER.

A.—Ureter showing stricture and line of incision.
B.—Opening through the stricture extending into the proximal and distal portion of the ureter. The extreme ends of the incision a and a' to be united.
C.—Ureter after suturing; a, the bend at the site of the stricture.

The first reunion of a completely divided ureter by uretero-ureteral anastomosis, or uretero-ureterostomy in the human subject has recently been reported by Kelly.[21] Eight years ago his attention was called to the danger of cutting a ureter during operation for an abdominal tumor which had displaced it. He now reports:

Mulatto, 25 years of age, who had a large uterine myoma the uterus filled true and false pelvis and extended above umbilicus. Hysteromyomectomy was performed May 1, 1892. Ureter ligated and cut supposing it to be an engorged vein. Ureter was four times its normal size by reason of pressure from the tumor (hydro-ureter). On removal of upper ligature twenty cubic centimeters of clear urine escaped. Van Hook's plan tried of tying lower end of divided ureter, making slit in ureter below ligature and invaginating upper into lower end by means of silk traction sutures. Edges also sutured to intussuscepted portion by ten fine silk rectangular sutures passed through outer coat only. Gauze laid over anastomosed end, and brought out at lower angle of abdominal wound to insure drainage. No urinary odor about dressings. Passed water second day. Discharged in six weeks. After Kelly's successful operation Bloodgood made an experiment upon the dog. He performed anastomosis of right ureter after section. Kidney and ureter were removed two and one-half months later. The kidney was found normal, ureter not dilated, caliber and mucous membrane restored without stricture.

CONCLUSIONS.

1. Exploration of the ureter as to its permeability should be done from the renal wound by a long flexible silver probe (a uterine probe) or an elastic bougie, either olive pointed or not. If the bougie passes into the bladder, the examination is at an end. The size of bougie that will pass through a healthy ureter is from 9 to 12 French scale.

2. If the pelvic orifice of the ureter can not be found from the renal wound, it should be sought for by opening the pelvis, pyelotomy, or by incising the ureter, ureterotomy.

3. A longitudinal incision, half an inch to an inch long, in the posterior wall of the pelvis can be made while the kidney is lifted upward against the twelfth rib. This procedure is easy if the pelvis is dilated, but may be impossible if the pelvis is of normal size.

4. A stricture in the ureter, if not too extensive, can be treated by a plastic operation on the plan of the Heinecke-Mikulicz operation for stenosis of the pylorus; namely, longitudinal division of the stricture and transverse union of the longitudinal wound. (Fig. 3). This method of operating for ureteral stricture seems to me preferable to resection of the strictured part of the ureter (Küster's operation) for the following reason: It is a more economical operation and preferable when the elongation of the ureter is not sufficient to permit the two cut ends of the ureter, after excision of the stricture, not only to come in contact but even to permit of closure and invagination without stretching.

5. Resection of the upper end of the ureter and implantation of the distal end into the pelvis has been performed in an important and interesting case by Küster, and the result was a brilliant success. His method was to split and unfold the end of the ureter, and to implant it into the opened pelvis, to which it was united with sutures.

6. In a similar case of stricture in the upper end of the ureter, especially if the ureter were not elongated or the kidney movable, I should prefer the plastic operation already described, as it is easier of technique, and as it proved successful in my case of traumatic stricture in the ureter below the pelvic orifice.

7. The ureter is accessible through an extra-peritoneal incision, a continuation of the oblique incision for lumbar nephrotomy, from the twelfth rib down along and one inch anterior to the ilium and along Poupart's ligament to about its middle. This incision gives access to the upper three-fourths of the ureter and down to within an inch and a half or two inches above the bladder.

8. The vesical and lower pelvic portions of the ureter may be reached, as Cabot of Boston, has pointed out, by means of the sacral operation, or Kraske's method modified by osteoplastic, temporary resection of the os sacrum. In woman, the vesical portion of the ureter is accessible through the vagina.

9. The vesical orifice of the ureter may be reached from within the bladder by supra-pubic cystotomy in man, or by dilatation of the urethra, or supra-pubic or vaginal cystotomy in woman.

In conclusion, I wish to cite literally the remarks made by Küster at the conclusion of his communication to the German Surgical Congress, because I fully

agree with Küster and think that his remarks apply well to my suggestions made above. Küster says:

"Gentlemen: When I bring this case before you, it is not to present to you a curious operation or a curiosity in the line of operating. The value of the observation appears to me to lie in the fact that it shows a method by which it may be possible to avoid the mutilating and dangerous operation of nephrectomy in cases of pyonephrosis where and when we do not know that the other kidney is perfectly healthy."

I would add—and a means to save or avoid some instances of permanent fistulas following nephrotomy for pyo- or hydronephrosis.

NOTE:—When I commenced to investigate the question of stenosis of the ureter and its possible operative treatment, I did not know that Küster had commenced work in the same direction. The first publication of Küster's case which reached me was his report before the Twenty-first German Surgical Congress, June 8 to 11, 1892, which appeared in the *Centralblatt für Gesammte Medicin*, for Aug. 13, 1892.

My first operation for stenosis was performed at a clinic and described in a clinical lecture given on May 31, 1892, at the Emergency Hospital, Chicago, for the Chicago Policlinic.

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THE IDEAL KNEE SPLINT.

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The ideal splint for treatment of disease at the knee-joint is one that gives 100 per cent. of immobilization and, at the same time, protects the joint from the traumatism incident to locomotion.

The early form of the Thomas knee splint, the one with the patten bottom, which is pretty generally used in this country, was markedly in advance of all the short splints, and of the splints making traction from adhesive plasters applied from the knee upward and downward; but the splint lacked somewhat in power to immobilize, and on that account confined the patient to bed unnecessarily long. Besides this, a high patten was required for the opposite leg and the apparatus became a clumsy one.

The form of splint to which I wish to call attention is not new; it was used to the exclusion of the "patten" splint by Mr. Thomas for at least four years prior to his death, and has been exclusively used by Mr. Robert Jones and myself since that time. It

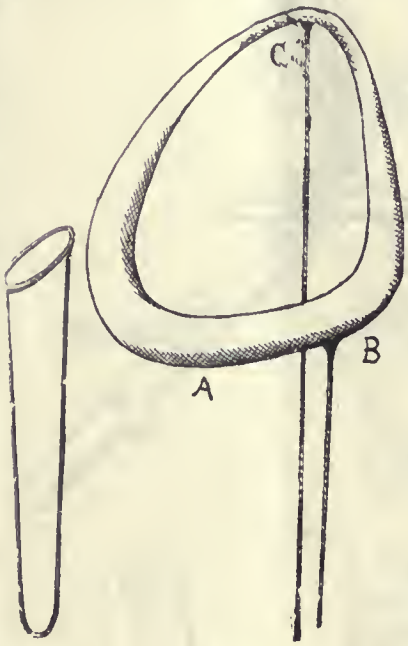


Fig. 1.

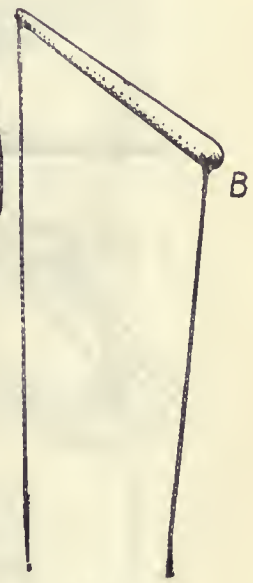


Fig. 2.

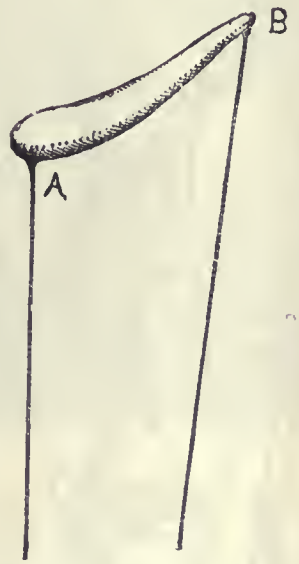


Fig. 4.

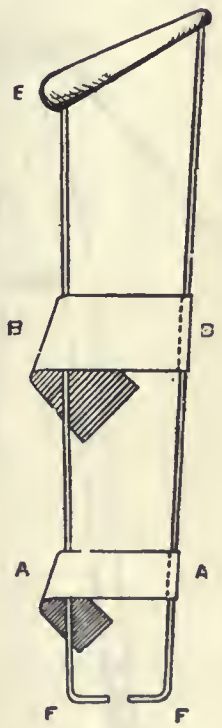


Fig. 5.

Fig. 3.

was called by Mr. Thomas the "Caliper" splint, and may be readily made without the help of the instrument maker from the "bed" splint.

The bed splint consists of a ring of iron wire to which is welded a long loop of the same wire, Fig. 1. The ring, in shape, is an irregular ovoid, flattened in front, and drawn out at the posterior and

inner portion so that when padded it shall fit the upper circumference of the thigh, Fig. 2, and as here observed, the inner wire of the loop B, is joined more anteriorly than the outer wire C. The ring slopes from without inward, and from backward in

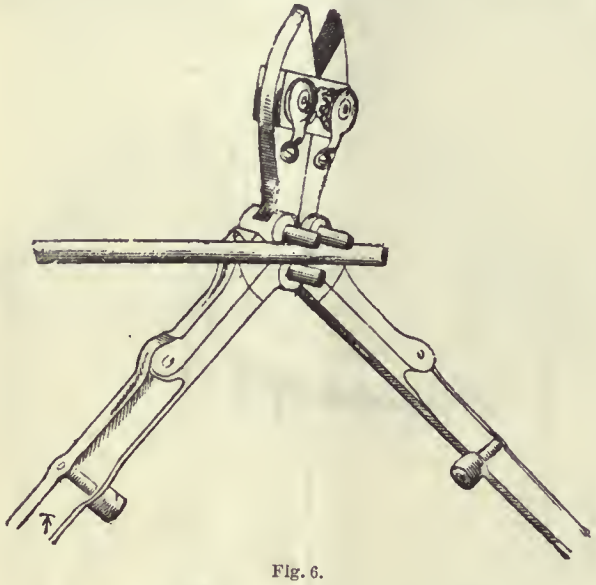


Fig. 6.

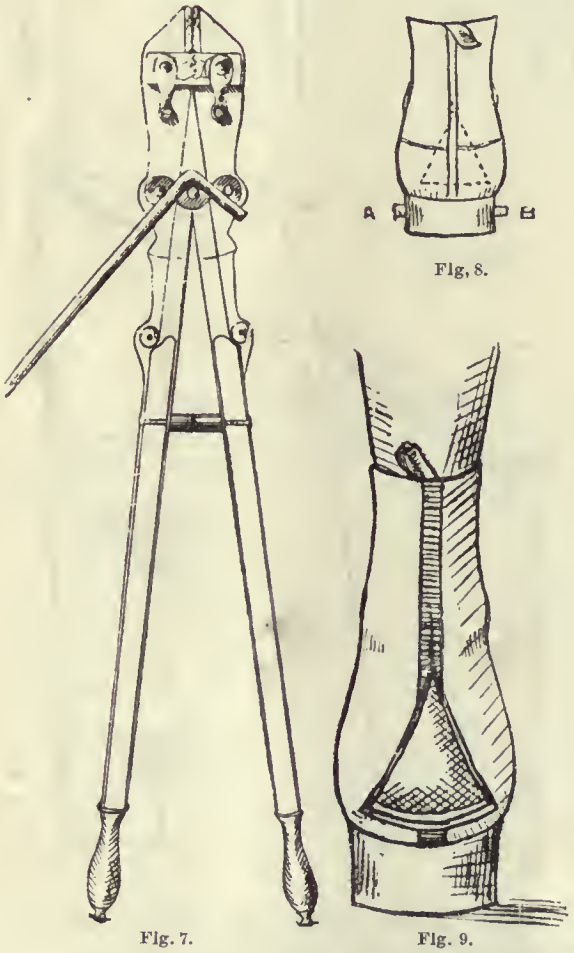


Fig. 7.

Fig. 8.

Fig. 9.

such a way that the point A upon which rests the tuberosity of the ischium is the lowest part of the ring. Fig. 3 shows front view and Fig. 4 the rear view. The angle formed by the lateral plane ring and the inner bar is about 135 degrees, and the anterior angle formed by the antero-posterior plane of the ring and the inner bar is about 145 degrees. The wire used depends upon the weight of the patient and is from three-sixteenths to three-eighths of an inch. In making the ring the ends should be joined by welding, and the side bars of the long loop are joined to the ring in the same manner. Few surgical instrument makers are good blacksmiths and therefore find it easier to braze than to weld, but a brazed joint breaks on bending, while a welded joint holds fast. The lower end of the long loop is dimpled somewhat to receive and retain the strap from the adhesive plasters. The ring is padded with boiler felting to the thickness of about half an inch in its outer portion and from an inch to an inch and a half in thickness at the inner posterior portion upon which the tuberosity of the ischium is to rest, and then covered with basil leather, tan sheepskin, put on wet, and sewed after the manner of the harness



Fig. 10.



Fig. 11.

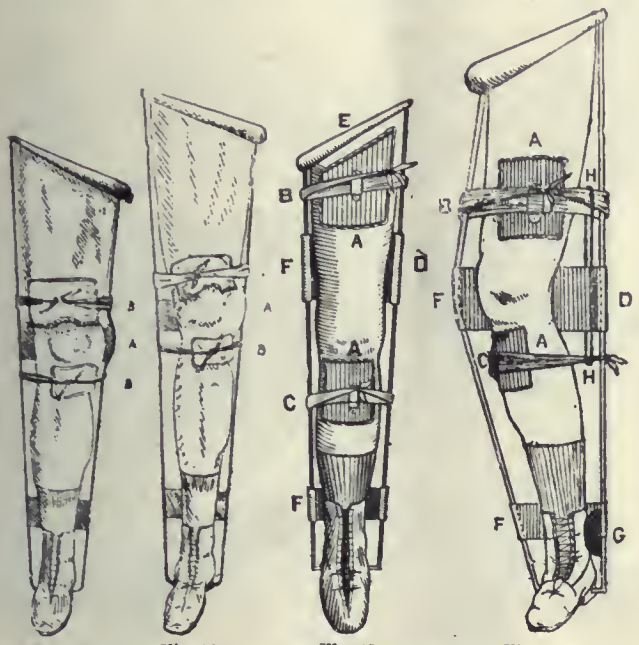


Fig. 12.

maker along the lower and outer border of the ring, i. e., where the seam will not chafe the patient. Two strips, from three to four inches wide, of the same leather, are sewed to one of the side bars, the other end being left free and of sufficient length to be drawn across to the opposite bar, and when sewed there, forms a support to the back of the limb when the splint is applied; one of these strips is to be back of the knee and the other back of the ankle.

The splint is applied by slipping the ring on over the leg and pushing it well up against the tuberosity of the ischium. If fixative traction is to be used, strips of long adhesive plaster in width about one-fourth of the circumference of the leg, and in length equal to the distance from the knee to the ankle, to the lower ends of which pieces of strong tape, webbing, or muslin bandage, have been sewed, are applied to the outer and inner surfaces of the leg; if these pieces of adhesive plaster are supplied with

narrow, oblique, lateral strips for winding around the leg, they will remain much longer attached to the skin. The plasters applied are held in place by an ordinary bandage. The surgeon now grasps the patient's foot, and pulls steadily downward, at the same time pushing the splint upward, and having straightened the limb as much as the patient will



F g. 13. Fig. 14. Flg. 15. Flg. 16.

one side bar and then the other; or a thick pad may be placed across the lower end of the thigh, well down upon the patella, and backward pressure made by a strong strip of muslin bandage, passed across

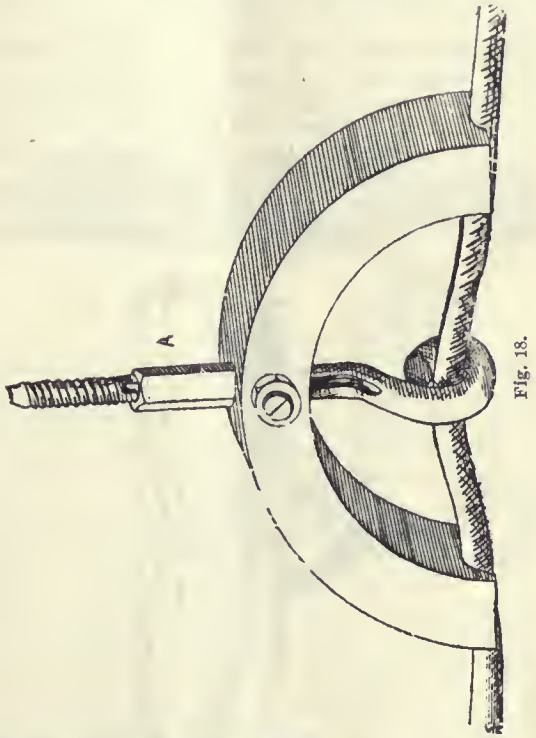


Fig. 18.



Flg. 17.

tolerate, ties the tape terminations of the adhesive plasters at the dimple, or upward bend, at the lower end of the splint. The lower leather cross strip is now placed back of the ankle, drawn snugly across and sewed fast. The other leather strip is placed back of the knee, or back of some part of the thigh if the knee is too greatly flexed to rest upon it, and it is drawn across to the opposite bar and sewed there. The knee is now pressed backward, straightening it as much as the patient will tolerate, and held there by a roller bandage carried back and forth across the front of the limb, and around first from side to side and somewhat downward, and tied to each side bar by a half-hitch, and then carried across the pad and tied. After this, the traction tapes at the bottom are again tightened. The limb is left thus, if everything remains in place, for two or three days, when it can again be made straighter and the fastenings tighter. In this way, the limb is straightened. If the limb is to be straightened at once under an anesthetic, it is better to apply at once after the straightening, the caliper splint, which will now be described.

The caliper splint is made from the bed splint by

cutting off the lower end of the loop and bending an inch or more of each side bar inward at a right angle. Fig. 5. The bed splint is applied and pushed well upon the straightened limb, a point is marked on each side bar an inch below the sole of the foot, and an inch or an inch and a half below this; the side bars are cut off and the bend is made at the point marked. Figs. 6 and 7 show the tool used for cutting off these bars, and the process of bending them. A shoe is cut at the heel as shown at Fig. 8 or Fig. 9; a hole is bored through the heel, Fig. 10, line AB, or a slot made by a second hole, line CD, Fig. 11, and a tube inserted, Figs. 8 and 12, into the hole or tube the bent ends of the side bars are passed, the leather

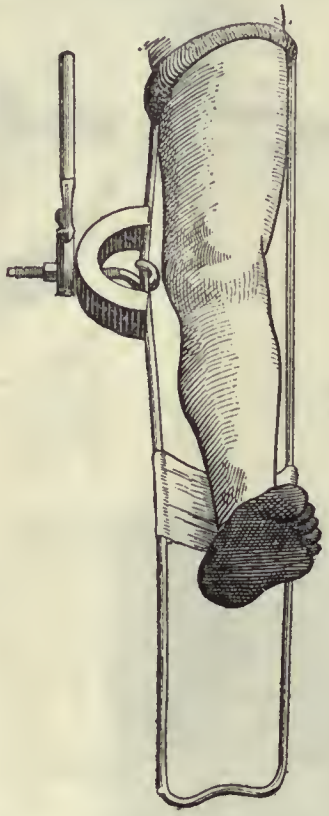


Fig. 19.

strips drawn fast and sewed, and the limb tied or bandaged in place, as shown in Figs. 13, 14, 15, 16, 17. If the knee is swollen so that the inner bar presses against it, this bar is drawn outward with wrenches, or the tool, Figs. 18 and 19, employed. When a joint has been straightened under an anesthetic, it should be left in the splint, without change of shoe, stocking or bandages until all pain and tenderness have passed off. In a word, the joint has been more or less sprained by the maneuver, and must be treated with all the consideration which a sprain demands.

The deformity corrected, the patient should be kept off his feet until the muscular spasm which tends to deformity has subsided; then he may be allowed to walk about. If, for any reason, the patient has to be gotten up before this time, he should use crutches.

Is Fond of Press Clinics.—Superintendent Marks of the City Hospital, St. Louis, according to the veracious *Chronicle* of that city, has decided to admit reporters of the daily papers to the clinics of that institution.

STENOSIS OF THE LARYNX AND TRACHEA.

(Reported from the Transactions of the Chicago Medical Society.)

BY E. FLETCHER INGALS, A.M., M.D.

PROFESSOR OF LARYNGOLOGY AND DISEASES OF THE CHEST AT RUSH MEDICAL COLLEGE, ETC.

Dr. Ingals presented the history of a young woman, 23 years of age, who came under his care for stenosis of the larynx and trachea:

Five years previously she had been on the point of suffocation from the pressure of a large goitre, when tracheotomy had been done by Dr. Senn and artificial respiration established, which had saved her life. Dr. Senn had at that time removed a wedge-shaped piece of the thyroid and opened the trachea with the thermo-cautery. He had then introduced as a tracheotomy tube, a new device of his own, which possessed some advantages over the ordinary tubes.



Fig. 1.—Half size. Senn's tracheotomy tube.
A B—Rubber trachea tube. C D—Silver tube to be worn inside the rubber tube A B, as shown at c d.

This tube, represented in Fig. 1, consists of a curved silver tube about one-quarter of an inch in diameter and two and one-half inches in length, which was placed inside a rubber tube of the same caliber and about five inches in length, but which might have been either longer or shorter, according to the indications in the special case. The silver tube maintained the proper curve, and the whole was easily retained in the trachea. This tube, while in position, was cleansed by the patient by means of a feather, or after it had been worn for a few weeks it could be removed and cleansed, the patient having a similar tube to insert immediately after its removal to prevent contraction of the wound and trachea. The enlargement of the thyroid had practically all disappeared.

The patient had been referred to Dr. Ingals during the past summer by Prof. Senn, whom she had consulted at the Presbyterian Hospital, on account of inability to speak, or to breathe through the mouth. Dr. Ingals found complete closure of the lower portion of the larynx between the cords and the tracheal wound. Finding a cicatricial tissue so firm that it could not be torn, he passed a forceps down upon it from the mouth and cut down to the instrument from the external wound. The cicatricial tissue was very tough and about six millimeters in thickness. It was cut away upon the sides with the punch forceps shown in Fig. 2, which had

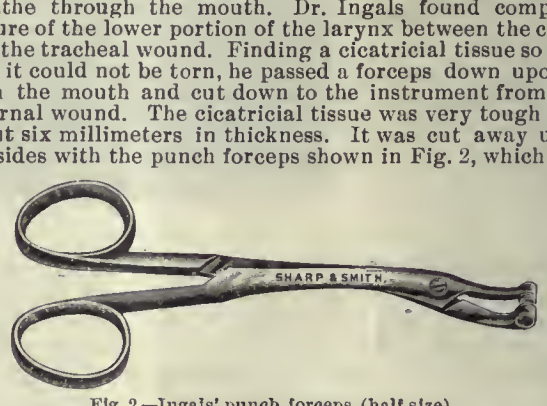


Fig. 2.—Ingals' punch forceps (half size).

been devised for this special purpose. The wound was then kept open by a rubber tube similar in size to that which had been used for the trachea. This tube was split down about three-quarters of an inch at one end, and the two sides were sewed together at the extremity, the edges of the cut being pared off so as to make an opening through which the tracheal tube could be passed. This laryngeal rubber tube

was passed upward, through the opening in the trachea, to the larynx, and the tracheal tube was passed through the place prepared for it in the end of the laryngeal tube.

Subsequently, after several experimental tubes had been made the laryngo-tracheal tubes, shown in Fig. 3 were constructed. Although somewhat larger in caliber than the rubber tube, the first of the silver tubes made had proven too small, and a tube, the caliber of which was about two millimeters greater than that of the rubber tube formerly worn had to be procured. Owing to the contraction of the trachea about two inches below the opening, whenever the tracheal tube was left out for fifteen or twenty minutes, it was necessary to make the silver tracheal tube long and formed, at its lower extremity, like the Durham tube. This silver tube the patient wore comfortably and with it was able to talk naturally. The author thought that the patient would be obliged to wear the tube the remainder of her life, because of the elastric stricture of the trachea about three inches below the glottis.

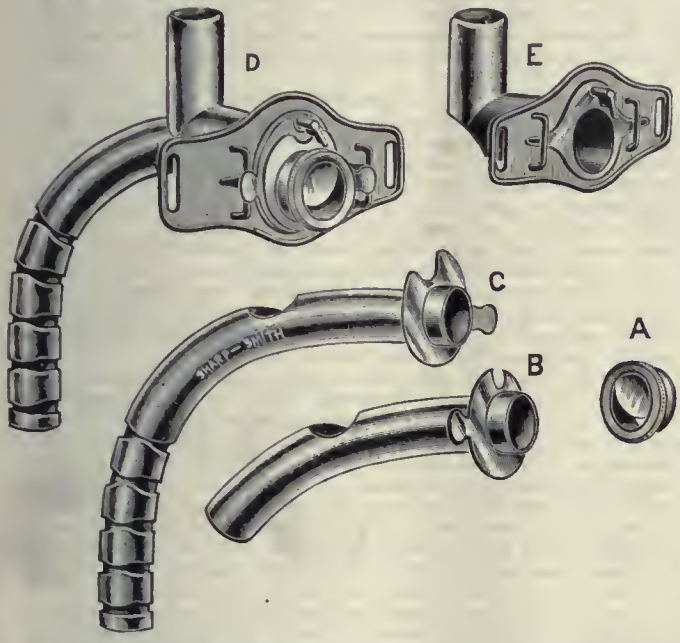


Fig. 3.—Ingals' laryngo-tracheal stenosis tubes (two-thirds size) A, cap with valve to prevent the escape of blast of air during phonation. B, middle tube. C, inner tube. D, instrument complete, all parts in position. E, outer tube.

In the discussion which followed, Dr. Wm. E. Casselberry referred to an interesting case which had been presented to the American Laryngological Association by Dr. Cohen, where the patient was able not only to speak, but to sing, although no air whatever could pass from the trachea to the mouth; and he inquired of the author of the paper especially regarding the voice in the case reported.

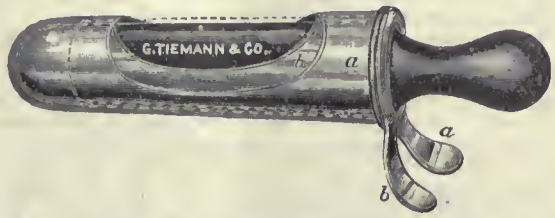
Dr. Ingals stated that the patient was unable to speak even in a whisper that could be understood; though by sucking air into her mouth before attempting to speak she could make some sounds with her lips, but the nurses and physicians at the hospital were unable to understand more than one word in ten; her friends, however, had learned to understand her by the movements of the lips.

Several months after the operation the patient was wearing the silver tracheal tube and speaking naturally.

A NEW RECTAL SPECULUM.

BY N. H. HENDERSON, M.D.
SURGEON LAKESIDE HOSPITAL, CHICAGO.

While one would think after examining the various rectal specula now on the market that there would be no room for another, experience has demonstrated that there is. The new rectal speculum as shown in the cut below is sure to find a place in the hands of those who are giving attention to diseases of the rectum. By rotating handle, B, one-half, we completely close the opening, in which position the instrument should be when introduced. As will be observed, when the handle, B, is rotated directly over handle, A, we have a large opening, exposing almost one-half of the caliber of the rectum.



After introducing the speculum the handle, B, is to be rotated little or much, to expose little or much of the field as may be desired. In using the speculum in this way the plug is not necessary, but is only designed to be used in a rectum small enough to indicate a smaller sized speculum; in which case the inner speculum should be withdrawn and used with the plug. We now have two complete instruments capable of a great variety of adaptations.

It is not claimed for this instrument that it takes the place of all other rectal specula, but it will be found on trial, specially valuable in the management of diseases of the rectum. I claim for this speculum some advantages which others do not possess. Many patients present a redundancy of tissue just within the anus, so that when a bi-valve speculum is introduced the field of observation is obscured.

This speculum overcomes this, by supporting the entire circumference of the anus to a depth of three-fourths of an inch. It also holds back from the field of observation any fecal matter that may be in the rectum, which no other speculum does.

This instrument was made for me by Geo.Tiemann & Co., New York, and is also manufactured by Chas. Truax, Greene & Co., Chicago.

APPENDICITIS; WITH ORIGINAL REPORT AND ANALYSIS OF ONE HUNDRED AND FORTY-ONE HISTORIES AND LAPAROTOMIES FOR THAT DISEASE UNDER PERSONAL OBSERVATION.

Read before the Pan-American Medical Congress.

BY J. B. MURPHY, M.D.
CHICAGO.
PROFESSOR OF SURGERY, AND CLINICAL SURGERY, COLLEGE OF PHYSICIANS AND SURGEONS, CHICAGO; PROFESSOR OF SURGERY, POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL; ATTENDING SURGEON TO COOK COUNTY HOSPITAL; ATTENDING SURGEON TO ALEXIAN BROTHERS' HOSPITAL; CONSULTING SURGEON TO HOSPITAL FOR CRIPPLED CHILDREN, ETC.

(*Continued from page 308*).

Case 21.—Date of operation July 24, 1890. Operator, Dr. E. W. Lee. N. C., aged 34 years; female. Present sickness commenced July 16; complained of chills, fever, vomiting, and abdominal pain, latter more pronounced in ileo-cecal region. July 18, pulse 120, temperature 103 degrees. Slight tenderness in ileo-cecal region. July 21, pulse 124, temperture 102.5 degrees. Great pain over whole abdomen. Tenderness over ileo-cecal region marked and induration present. Operation: Appendicisectomy. Appendix large, swollen, and tortuous; no perforation. Appendix contained enterolith in which was imbedded a small spicula of bone. There

were no adhesions around the appendix. Peritoneal cavity opened. No abscess. Pus in the appendix around the enterolith. Gauze drainage. Temperature fell to normal immediately after operation; recovery.

Case 22.—Date of operation Aug. 2, 1890. Operator, Dr. Lee. H. McQ., aged 10 years; female. Present illness of patient began July 27 with pain in ileo-cecal region and diarrhea. August 1, pulse 130, temperature 103 degrees. Tenderness in right iliac region; induration. Operation: Drainage of circumscribed abscess; general peritoneal cavity not opened. Appendix not removed. No foreign body found. Temperature fell to normal within twenty-four hours after operation; recovery.

Case 23.—Date of operation Aug. 22, 1890. Operator, Dr. Lee; present Dr. Bridge, Cook County Hospital. C. P. A., aged 21 years; male. Patient had a similar attack five years ago. Three days previous to operation, patient was seized with sudden pain in right iliac region, temperature 102.2 degrees; temperature August 20, 103.3 degrees; temperature August 21 100.8 degrees. Examination: Abdomen moderately distended, tympanitic. Dulness in right iliac region and marked tenderness over appendix. Tongue slightly coated. Operation: Incision over induration, escape of pus and two enteroliths. Drainage; recovery.

Case 24.—Date of operation Sept. 6, 1890. Operator, Dr. Lee. J. R., 16 years; male. Case occurred in the practice of Dr. McCarthy. Patient's present sickness began August 29 with acute pain in lower part of abdomen; diarrhea. Temperature 101.8 degrees, pulse 112, August 30; temperature 101.3, pulse 106 on August 31; on September 1, temperature 101.1 degrees, pulse 100; on September 2, temperature 101 degrees, pulse 98. Tenderness on pressure over lower part of abdomen which gradually became localized in right iliac region and induration developed. Operation: Incision and drainage of intra-peritoneal abscess. General peritoneal cavity opened. Appendix not removed. Temperature fell to normal inside of forty-eight hours; recovery.

Case 25.—Date of operation Sept. 18, 1890. Operator, Dr. Lee. F. W. H., aged 25 years; male. Case occurred in the practice of Dr. McCarthy. Present illness commenced suddenly September 14 with intense pain in right iliac region, persistent vomiting and diarrhea. General abdominal tenderness, more marked in the right iliac region. Tympanites. Patient lies with knees drawn up and bears a distressed look, temperature 102.2 degrees, pulse 116. September 15, temperature 102.6 degrees, pulse 122. Nausea, singultus. Tenderness and tympanites general. Slight induration in right iliac region. September 16, temperature 102.2 degrees, pulse 126, induration more marked and extensive, tenderness increased. Dr. Lee called in consultation. Diagnosis: Rupture of appendix with intra-peritoneal abscess. Operation: Typical incision; no induration to be felt after incision; dry septic peritonitis; appendix perforated; small abscess around base; drainage. *Exitus lethalis* on third day. Postmortem: General dry septic peritonitis; perfect adhesions around gauze packing.

Case 26.—Date of operation Nov. 9, 1890. Operator, Dr. Lee. Cook County Hospital. Mrs. M. P., aged 32 years. Patient has had several attacks of same nature as present one in last three years. One week before admission to Hospital, present attack began with fever, chills, sweats and pain in right iliac region. Patient presents appearance of a grave typhoid, tongue and teeth heavily coated, lips covered with a herpetic eruption. At time of admission patient had a temperature of 104.6 degrees and had severe septic symptoms. In right iliac region, three and one-half inches from anterior superior spine of ilium is an induration. Operation: Incision over tumor into abscess; pus and feces escaped; packed with iodoform gauze. Death from pyemia, which was present at time of operation, three days later. Temperature reached 106 degrees several times. Frequent chills. No septic peritonitis.

Case 27.—Date of operation Nov. 15, 1890. Operator, Dr. Lee. O. P. P., aged 31 years; male. Patient had sudden attack; severe pain in right iliac region, chills, fever, temperature 103 degrees, vomiting, general abdominal tenderness, more marked in right iliac region where induration could be felt which was dull on percussion. Operation: Incision, drainage of an abscess without opening peritoneal cavity. Appendix not removed. Fecal fistula. Recovery. Patient subsequently had recurrent attacks and was again operated. (See history No. 30.)

Case 28.—Operation Feb. 14, 1891. Operator, Dr. E. W. Lee. R. S., male; aged 28 years. History: For past two years patient has been subject to frequent attacks, beginning with pain in right iliac region, generally accompanied with nausea and vomiting. Attacks usually lasted from a week to ten days. During past six months patient had an attack about every three weeks. Examination: Induration in right iliac region. Operation: Appendicisectomy. General peritoneal cavity opened. The vermiform appendix was found perforated near the base which communicated with an abscess cavity that had opened into the cecum. A probe could be passed through the opening into the cecum. Enterolith. Drainage; recovery.

Case 29.—Date of operation March 9, 1891. Operator, Dr. Murphy. Miss McC., aged 23 years. History: First attack of pain in 1889. Sudden pain in right loin followed by fever, tenderness and vomiting. The swelling gradually increased in loin and was seen by several physicians in the next year, all agreeing that it was a sarcoma of the kidney. It finally was opened in the back and a small quantity of pus escaped. Two fecal stones escaped from the opening after some months; this was followed by the discharge of berry seeds for several months, no other material escaping. At the end of about a month, I operated to close the fistula in the cecum. This was done by suture and was successful. The history of this case extends over a period of three years. Recovery.

Case 30.—Date of operation May 19, 1891. Operator, Dr. Lee. P. O. P., aged 31; male. Cook County Hospital. Patient had a primary operation for appendicitis in November, 1890. An intra-peritoneal abscess was drained but the appendix was not removed. In April, 1891, a laparotomy was performed for removal of the appendix, but on account of the extensive adhesions this was impossible. Patient was seen three days after onset of present attack and by an operation the appendix was amputated; two enteroliths were found in it; a rubber drain was inserted and the abdominal incision partially closed. Patient made a rapid recovery. There remained a small sinus leading down to the iliac fossa for several weeks.

Case 31.—Date of operation, June 4, 1891. Operator, Dr. Murphy. Cook County Hospital. J. H. C., male; aged 27 years. Patient was seen five weeks after onset of attack. His illness commenced with pain in right iliac region. Examination: Hard tumor in right iliac region, not movable, seemingly attached to ilium. Percussion dull over tumor, otherwise normal. Temperature 101.2 degrees. Operation: Incision into pus cavity. The appendix which was difficult to locate was drawn into abdominal incision, ligated near its base and amputated. Drainage; recovery in three weeks. The appendix was perforated near its base.

Case 32.—Date of operation June 9, 1891. Operator, Dr. Murphy. Alexian Brothers' Hospital. F. F., aged 18 years; male. Patient had a typical attack and entered the Hospital five days after the onset when he showed symptoms of a circumscribed suppurative peritonitis. The operation was at once performed and a large abscess drained. The appendix was not removed. Recovery.

Case 33.—Date of operation June 25, 1891. Operator, Dr. Murphy. D. M., male, aged 19 years. Alexian Brothers' Hospital. This case was operated on four days after the onset of a typical attack. A circumscribed abscess was opened; a fecal stone escaped. The appendix was perforated and was removed after simple ligature. Recovery.

Case 34.—Date of operation July 28, 1891. Operator, Dr. Murphy. J. A., age 56; male. Alexian Brothers' Hospital. History: Patient entered Hospital fourteen days after onset of a typical attack. A large induration in right iliac fossa to be felt. Operation: Incision into large pus cavity. Appendix not removed; drained. General peritoneal cavity not opened; circumscribed abscess. Recovery.

Case 35.—Date of operation Aug. 5, 1891. Operator, Dr. J. B. Murphy. Cook County Hospital. A. H., aged 30 years; male. Had an attack six months previous similar to the present. Typical attack July 27. Induration in right iliac region. Operation: Lateral incision. General peritoneal cavity opened. Peritoneum very much congested. Appendix situated along the lower border of ilium. Appendix perforated; one side surrounded by a mass of granulations where it was adherent to the cecum. The probe could be passed through a small opening into the cecum showing where the abscess had emptied. The appendix was ligated and removed. There had been a local gangrene, the defect now in process of cicatrization. Recovery. This is one of the cases that is classed by some authors as cecitis, but the opening in the cecum was made from without inward by an accumulation of pus around the gangrenous appendix.

Case 36.—Date of operation Aug. 10. 1891. Operator, Dr. Murphy. Cook County Hospital. F. D., aged 32 years. Patient was always healthy up to present illness. He was

taken ill with severe pain in the umbilical region; fever and vomiting. The pain increased rapidly and at time of operation was diffuse and uniformly severe. Examination; Pulse rapid and small; legs drawn up; percussion shows abdomen full of fluid nearly up to umbilicus; abdominal walls tense: tenderness diffuse. Operation: Median incision; escape of a large quantity of sero-purulent fluid with fecal odor. Drainage after irrigation of abdominal cavity. Appendix adherent. Patient died on following day. Postmortem: Appendix adherent to under surface of cecum except about one-half inch of tip which was free. At base of appendix was an ulcerated perforation. At side of perforation, enterolith, size of cherry stone. No evidence of a previous abscess cavity. General suppurative peritonitis which had developed before adhesions could take place. The peritoneum of the abdominal and intestinal walls was eroded of endothelium.

Case 37.—Date of operation Sept. 14, 1891. Operator, Dr. Murphy. G. A., male. History: Typical attack. Operation: A circumscribed intra-peritoneal abscess was opened and drained with iodoform gauze. A fecal stone escaped with the pus. Abscess extended deep into back. Recovery.

Case 38.—Operation Nov. 13, 1891. Operator, Dr. E. W. Lee. Miss B. aged 16 years. Sickness commenced with sudden pain in right iliac region; vomiting. Sudden rise of temperature (103 degrees) and pulse. Induration in right iliac region and tenderness more marked in this locality. Operation: Drainage of a large circumscribed abscess. Fecal calculus. Appendix not removed. Recovery.

Case 39.—Date of operation Dec. 14, 1891. Operator, Dr. J. B. Murphy. Miss F., aged 17 years. History: Typical attack. Operation: Performed on fifth day after onset. Intra-peritoneal pus cavity opened. Fecal stone removed. The appendix was gangrenous and perforated; amputated. Abscess cavity packed with iodoform gauze. Recovery.

Case 40.—Date of operation Dec. 19, 1891. Operator, Dr. Murphy. H. F., aged 24 years. History: For the past three years has had repeated attacks of pain in the right iliac region. With these attacks he occasionally had vomiting; always great tenderness in right side. Status Præsens: Patient is emaciated, has evening elevations of temperature and night sweats. For the last three days has suffered from great pain in right iliac region. Examination: Heart and lungs normal. An area of dulness in right side extending from Poupart's ligament to within two inches of the margin of the ribs and as far forward as the linea semilunaris. The induration extended behind from the crest of the ilium to the margin of the ribs. It was most sensitive and approximated the surface more closely an inch to the right and a little below the anterior superior spinous process. No induration could be felt from the rectum. Urine normal. Diagnosis: Recurrent appendicitis with extensive infiltration of the cellular tissue. Operation: Lateral incision an inch to the inner side of the spinous process. The cellular tissue was found infiltrated and indurated a quarter of an inch from the skin. This induration was perforated with the handle of the scalpel until an abscess was reached one and one-half inches below. A small quantity of thin odorless pus escaped. It was found on exploration with the finger that only a sinus had been opened. This sinus was followed upward and backward, and at the lower end of the right kidney was found a renal calculus the shape of a Maltese cross, the bars being one inch in length and three-eighths inches in diameter. It was broken with a heavy forceps and extracted. It had escaped completely from the kidney, and the opening closed, as no urine escaped at time of operation or subsequently. The closure of this opening accounts for the absence of pus in the urine at the time of examination. Patient made an uneventful recovery.

Case 41.—Date of operation Jan. 10, 1892. Operator, Dr. Hartmann. F., aged 9 years; male. Patient was seen one week after a typical attack; had quite a high temperature with a distinct induration over appendix. Operation: At time of operation temperature 105 degrees. An intra-peritoneal abscess was drained; the appendix was not removed. Recovery.

Case 42.—Date of operation Jan. 26, 1892. Operator, Dr. J. B. Murphy. Alexian Brothers' Hospital. J. J. G., aged 26 years; male. During past two years patient has had about a dozen attacks of appendicitis. Operation: (intermediate stage). Appendicisectomy. Appendix was adherent to cecum and showed many cicatrices from previous perforations. Enterolith. Recovery.

Case 43.—Date of operation Feb. 20, 1892. Operator, Dr. E. W. Lee. Miss D., aged 25 years. Sudden attack of pain in right iliac region. Vomiting. Diffuse abdominal tenderness. Temperature 105 degrees, pulse 130 at time of operation. Operation: third day after attack. Usual incision. Drainage of an intra-peritoneal abscess which had previously ruptured and caused a general dry septic peritonitis; no limiting adhesions. Enterolith removed. Symptoms of peritonitis continued and patient died in forty-eight hours. Autopsy not allowed.

Case 44.—Date of operation Feb. 26, 1892. Operator, Dr. Lee. Cook County Hospital. L. J., aged 19 years; female. Patient was admitted to the gynecologic ward of the Cook County Hospital, probably on account of an induration in the roof of the pelvis. The diagnosis of appendicitis was finally made. She was not operated upon until three weeks after beginning of her attack. The operation consisted of incision into abscess, irrigating and packing (with iodoform gauze); general peritoneal cavity not opened. Complete recovery in four weeks.

Case 45.—Date of operation March 11, 1893. Operator, Dr. E. W. Lee. F., 18 years; male. Patient felt perfectly well up to February 28. That day, while riding on a bicycle, the pedals of which were too low, he over-reached with his right foot, and felt a sudden pain in right lumbar region. Fever soon developed and vomiting occurred several times. Bowels constipated. He suffered from great pain above and behind the right anterior superior spinous process of ilium. Excessive tenderness over right side of abdomen, especially in the region of the right anterior superior spinous process. Abdomen very tympanitic; under anesthetic induration was felt which was not apparent before operation. Temperature 103 degrees. Drainage of circumscribed abscess, removal of enteroliths. Appendix not removed. Later fecal fistula developed, which closed spontaneously. Recovery.

Case 46.—Date of operation April 3, 1892. Operator, Dr. J. B. Murphy. Mrs. B., aged 52 years. Typical attack. Nausea, vomiting, local tenderness. No induration. Operation: Third day after the attack. Temperature 102 degrees. Appendicisectomy. Base of appendix very much distended. No adhesions of appendix. A large typhoid ulcer in appendix. Drainage forty-eight hours; recovery.

Case 47.—Date of operation April 5, 1892. Operator, Dr. Murphy. A. K., age 26; male. Case occurred in practice of Dr. Davey. Patient was seen seventh day after attack. A large abscess was drained without opening general peritoneal cavity. The appendix was not removed. A foreign body was found loose in abscess cavity; recovery.

Case 48.—Date of operation April 5, 1892. Operator, Dr. Lee. Cook County Hospital. M. N., aged 52 years; female. Patient's trouble commenced with chills, fever, vomiting, general pain in abdomen which gradually became localized in right iliac fossa. The diagnosis of appendicitis was made and a circumscribed abscess drained. The appendix was not removed. No foreign body present. Patient had parotid abscess, otherwise an uneventful recovery.

Case 49.—Date of operation, April 21, 1892. Operator, Dr. Lee. Cook County Hospital. D. M., aged 28 years. History: Patient's present illness commenced with a sudden attack of severe pain, vomiting and great tenderness over the epigastrium. Had previous good health and no symptoms of pain and distress after taking food. The pain became very intense after a few hours and tympanites set in. The abdomen was uniformly sensitive. No induration could be felt on account of the distension. Temperature 101 degrees, pulse 96. Anxious expression. Diagnosis: General peritonitis from appendicitis. Operation: Lateral incision; general suppurative peritonitis. The appendix was found inflamed in common with the other tissues; not removed. Cause of peritonitis not ascertained. Death twenty-four hours after. Autopsy: General suppurative peritonitis produced by small round perforating ulcer of stomach. It will be noted in this case there was absence of increased local tenderness in right iliac region and the pain was located in the epigastrium, also *absence of history of ulcer of stomach.*

Case 50.—Date of operation May 10, 1892. Operator, Dr. Murphy. Occurred in the practice of Dr. Oswald. C., age 23; male. History: Sickness commenced with sudden pain in right iliac region, vomiting and nausea. Examination: large induration over appendix. Operation: Five days after attack. Incision into abscess; escape of a large quantity of pus with enterolith. Appendix not removed. Abscess cavity packed with iodoform gauze. Recovery. Had one recurrence since; very light; not operated.

Case 51.—Date of operation May 11, 1892. Operator, Dr.

Murphy. T. H., age 46; male. Case occurred in the practice of Dr. T. J. Conley. History: Typical attack. Induration. Operation: Drainage of a large circumscribed abscess containing four ounces of pus. No foreign body. Appendix not removed. General peritoneal cavity not opened. Recovery. Three recurrences since operation. (Not operated.)

Case 52.—Date of operation May 14, 1892. Operator, Dr. Murphy. Alexian Brothers' Hospital. B., age 28; male. Typical attack. Operation several days after attack. An extra-peritoneal abscess was opened; the appendix removed, also enterolith and the abscess drained with iodoform gauze. Recovery.

Case 53.—Date of operation May 18, 1892. Operator, Dr. Murphy. Miss B., aged 24 years. Present attack commenced May 13, 1892, with general abdominal pain, nausea and vomiting. Induration. Operation: Five days after attack. Drainage of intra-peritoneal abscess containing about two ounces of pus. Recovery. Recurrence July 12, 1893. Operated. (See History No. 97.)

Case 54.—Date of operation June 20, 1892. Operator, Dr. Lee. E. B., aged 50 years; male. Seven days before operation patient was suddenly attacked with pain in the abdomen after having partaken of a heavy dinner. A few hours afterward he vomited, and fever set in (temperature 103 degrees.) Abdomen became rapidly distended and tender over the entire surface, more pronounced over the right iliac region. Patient seen on third day by Dr. Lee. Operation advised. Consultation the following morning resulted in postponement of operation. Symptoms continued the same except temperature, which fell to 101 and remained so. Further consultation on the seventh day, operation agreed to. Pulse 90, temperature 101 degrees at time of operation. Usual incision. General suppurative peritonitis present, result of rupture of a circumscribed abscess around appendix. No limiting adhesions. Bowel at seat of circumscribed abscess black and gangrenous. Appendix not removed. Second day after operation feces discharged freely through the wound. Pulse and temperature good. Third day. Escape of intestinal slough. Patient in good condition. Fourth day. Conditions improved. Fifth day. Profuse hemorrhage both from wound and rectum. Patient pulseless. Remained in bad condition and died on seventh day. Autopsy not permitted.

Case 55.—Date of operation June 25, 1892. Operator, Dr. Murphy. W. R., aged 17 years. Alexian Brothers' Hospital. History: Typical attack four weeks before operation. Continuation of fever and sweats with rapid emaciation and tenderness in right iliac region. Status Præsens: Induration extending half way to the umbilicus, tense and tender. Dull on percussion. Operation: Lateral incision. Opened a large circumscribed abscess. General peritoneal cavity not opened; appendix not removed; drainage with iodoform gauze; recovery. This case was re-operated on during a relapse. (See Case 108.)

Case 56.—Date of operation July 9, 1892. Operator, Dr. Murphy. Mr. S., aged 36 years. Case occurred in practice of Dr. Hoelscher. History: Typical attack. Examination reveals induration and dulness on percussion far beyond median line to the left. Operation twenty-eight days after attack. Lateral incision; about a quart of pus escaped; no fecal stone; appendix not removed; general septic peritonitis; recovery.

Case 57.—Date of operation July 16, 1892. Operator, Dr. Murphy. Cook County Hospital. H. W., 22 years; male. Typical attack. Operation four days after onset. Drainage of a large accumulation of pus (intra-peritoneal.) General suppurative peritonitis; appendicisectomy. Local gangrene of appendix; no foreign body; recovery.

Case 58.—Date of operation July 28, 1892. Operator, Dr. Murphy. Miss R., aged 10 years. Case occurred in practice of Dr. Cotton. History: Typical attack, nausea, vomiting, operation eighth day after onset. Lateral incision; escape of about six ounces of pus from an intra-peritoneal abscess. No foreign body; appendix not removed; recovery.

Case 59.—Date of operation Aug. 27, 1892. Operator, Dr. Murphy. A. M., age 22; male. Alexian Brothers' Hospital. Typical history of appendicitis. Operation: Lateral incision. Circumscribed abscess opened. General peritoneal cavity not opened. Appendix not removed. Drainage; recovery. This case was operated upon twenty-four hours after admission to Hospital.

Case 60.—Date of operation Sept. 16, 1892. Operator, Dr. Murphy. J. McC., aged 11 years; male. Case occurred in practice of Dr. P. H. Conley. History: Typical attack. Operation fifth day after attack. Operation: Incision, general peritoneal cavity opened. Pus found extending over bowels beyond median line. Escape of fecal stone with pus. Appendix not removed. Temperature at time of operation 99½ degrees; pulse 98. Facial expression good. Recovery in three weeks. Fecal fistula closed without operation in ten days.

Case 61.—Date of operation Oct. 11, 1892. Operator, Dr. Murphy. H. S., aged 34 years; male. Admitted to Hospital five days previous to operation. Patient gave a typical history of appendicitis; small induration, temperature 101 degrees. Operation: Lateral incision; drainage of circumscribed abscess without entering peritoneal cavity; recovery.

Case 62.—Date of operation, Oct. 15, 1892. Operator, Dr. Murphy. (Case occurred in the practice of Dr. Hoelscher.) Miss F. aged 16 years. History: Typical attack. Operation: Three days after attack. Drainage of circumscribed abscess. Appendicisectomy. General peritoneal cavity was opened. Appendix was perforated, gangrenous and contained enterolith. Recovery.

Case 63.—Date of operation Oct. 15, 1892. Operator, Dr. Murphy. S., age 37; male. Case occurred in practice of Dr. McCarthy. History; Typical attack, nausea, vomiting. Operation: On sixth day. Large abscess containing about a pint of pus. General peritoneal cavity not opened. Appendix enlarged and gangrenous; ligated, amputated. A fecal stone removed. Abscess cavity packed with iodoform gauze. Recovery.

Case 64.—Date of operation Oct. 28, 1892. Operator, Dr. Murphy. Alexian Brothers' Hospital. F. R., aged 18 years. History: Attack typical. Operation: Several days after onset. Lateral incision. General suppurative peritonitis. The appendix and a fecal stone removed; a large quantity of pus escaped. Drainage with iodoform gauze. Recovery.

Case 65.—Date of operation Oct. 28, 1892. Operator, Dr. Murphy. Occurred in practice of Dr. Hoelscher. C. F. B., aged 18 years. Patient was seen eight days after onset of typical attack by Dr. Hoelscher. The temperature was 105 degrees, the pulse 130. Extreme tympanites and general tenderness present. Patient in a profoundly collapsed condition at time of operation. Operation: Drainage of abdominal cavity; a very large amount of pus escaped (about one quart). Death twelve hours after operation. General suppurative peritonitis at the time of operation. Patient also had pneumonia.

Case 66.—Date of operation Oct. 28, 1892. Operator, Dr. Murphy. Alexian Brothers' Hospital. H. G., age 26; male. Typical attack. Operation: Lateral incision. General suppurative peritonitis. Appendix perforated, gangrenous, non-adherent; appendix removed; drainage; recovery.

Case 67.—Date of operation Nov. 2, 1892. Operator, Dr. J. B. Murphy. Miss G., aged 14 years. History: Sudden attack on Oct. 30, 1892, two days before operation; nausea, vomiting, and sudden rise of temperature. Examination. Temperature 102 degrees, pulse 80, local tenderness, tympanites. Operation: Lateral incision over region of appendix into peritoneal cavity. Appendix adherent to side of cecum and covered with flakes of pus; mesentery also infiltrated with pus. Appendix ligated and amputated. Appendix found enlarged, adherent; no perforation, but ulceration of mucous membrane present. Recovery. Remarks: This case is very interesting, as it shows a purulent infection of the peritoneum and mesentery from an ulcer of the mucous membrane of the appendix without gangrene and without perforation. Peritoneal infection has been reported from ulcers in other portions of the intestinal tract without perforation, but this is the first case on record where such a condition is reported as occurring from the appendix without perforation or gangrene.

Case 68.—Date of operation Nov. 3, 1892. Operator, Dr. Murphy. W., aged 36 years; male. Case occurred in practice of Dr. O'Malley. History: Attack typical. Examination revealed a large area of superficial dulness. Operation eighth day. Incision and removal of appendix. General peritoneal cavity not opened. About a pint of pus escaped, also a fecal stone. Packing of abscess cavity with iodoform gauze. Recovery. Pathologic conditions: Appendix completely gangrenous and free in abscess cavity, nothing being left of it but its peritoneal covering.

Case 69.—Date of operation Nov. 11, 1892. Operator, Dr. Murphy. Miss F., aged 26 years. History: Ten days ago patient became very sensitive in right iliac region, and noticed there a hard swelling. There had been no perceptible swelling previous to that time. This increased rapidly in size, and when admitted to the Hospital extended up to the margin of ribs and could be felt distinctly behind. There

was no deformity in back, nor was there a history of trouble in the spine. Urine normal. Diagnosis: Appendicitis. Operation: Laparotomy. Lateral incision; abscess opened without entering the peritoneal cavity. Cellular tissue of abdominal wall very much infiltrated; this was due to a rupture of the abscess into retro-peritoneal cellular tissue by an exertion the day before onset of pain. Pus was odorless, which immediately caused doubt as to the etiology of the suppuration. Exploration of the abscess cavity revealed a sinus leading up to the third and fourth lumbar vertebræ which were tubercular. Rupture of the psoas abscess into the cellular tissue accounts for the sudden onset of symptoms, and the location of and limited disease of the vertebræ accounts for the absence of scoliosis or lordosis. Recovery.

Case 70.—Date of operation Nov. 14, 1892. Operator, Dr. Murphy. Case occurred in practice of Dr. T. J. Conley, Mrs. S., aged 24. History: Typical attack; induration, resonant on percussion. Operation: Fourth day after attack revealed intra-peritoneal abscess and perforation of appendix with enterolith. The appendix was amputated, the abscess cavity drained with iodoform gauze. Recovery.

Case 71.—Date of operation Nov. 26, 1892. Operator, Dr. Murphy. K., aged 14; male. Case occurred in practice of Dr. O'Shea. History: Typical attack. Operation seven days after onset. A large abscess was opened, which contained quite a quantity of blood. After pus escaped, a profuse hemorrhage took place which resembled that of aneurism, which was suppressed by packing with iodoform gauze. A fecal stone was removed; appendix not removed; recovery.

Case 72.—Date of operation Nov. 30, 1892. Operator, Dr. Murphy. Mrs. E., aged 22 years. Case occurred in practice of Dr. T. J. Conley. History: Typical attack. Operation on fourth day: Appendicisectomy. A large circumscribed abscess was present. The appendix was gangrenous and had perforated. Fecal stone. Recovery.

Case 73—Date of operation Dec. 7, 1892. Operator, Dr. Murphy. Miss S., aged 12 years. Case occurred in practice of Dr. Graves. History: Typical attack. Operation on the fourth day of sickness. Intra-peritoneal abscess, containing two ounces of very offensive pus was opened; the appendix was found to be partly gangrenous and perforated, and was removed. The cavity was packed with iodoform gauze. Recovery.

Case 74.—Date of operation Dec. 9, 1892. Operator Dr. Murphy. J. F., aged 25; female. Hospital. History: Patient had frequently complained of pain in right iliac region and occasional,y had pains in back. Present attack began two weeks ago with classical symptoms of appendicitis. On examination a considerable induration was found in the right iliac region which appears to be near the surface. No induration could be felt from rectum. Superficial dulness on percussion. Operation: Lateral incision; circumscribed abscess; appendix not removed; general peritoneal cavity opened. Drainage; recovery.

Case 75.—Date of operation Dec. 16, 1892. Operator; Dr. Murphy. St. Joseph's Hospital. M., aged 28 years; male. One year previous to operation the patient had three attacks of local peritonitis. During the last attack Dr. F. S. Hartmann saw the case and advised operation. The last attack simulated intestinal obstruction very much, so that there was doubt as to the actual diagnosis. Operation: Appendicisectomy. General peritoneal cavity opened. There was present a perforation of the appendix with a circumscribed abscess in region of umbilicus. The wall of the cecum enveloped the appendix. Drainage; patient made a good recovery.

Case 76.—Date of operation Dec. 16, 1892. Operator, Dr Murphy, Case occurred in the practice of Dr. Wittwer. A., aged 26; male. Alexian Brothers' Hospital. Patient was seen several days after onset of attack and showed severe symptoms of general suppurative peritonitis. Operation: The usual incision was made, and a large quantity of pus escaped, which covered the bowels for an area of several inches. Slow recovery.

Case 77.—Date of operation Dec. 25, 1892. Operator, Dr. Murphy. H., aged 15 years; male. Case occurred in the practice of Dr. Mott. Two weeks previous to first operation, patient had a typical attack accompanied with pain, nausea, vomiting and tympanites. On examination a dulness on light percussion over entire abdomen below the umbilical line. Deep percussion resonant. Operation: Lateral incision, large quantity of pus all over the bowels; appendix not removed. Temperature dropped for three days and then rose again to 103 degrees. January 2, in consultation with Dr. Mott, it was found that left side of abdomen was not draining properly. Circumscribed adhesions had formed around an accumulation of pus in that region. The abscess was drained; it was found that this abscess extended into the pelvis. Patient made a rapid recovery.

Case 78.—Date of operation Jan. 28, 1893. Operator, Dr. Murphy. K., aged 22 years; female. Sickness commenced with sudden pain and tenderness in right iliac fossa. At operation, which was performed four days after onset of attack, a large extra-peritoneal abscess was found, and was packed with iodoform gauze. The appendix was not removed. Two weeks after the operation a lobar pneumonia set in, which was followed by a hydrothorax; aspiration; recovery.

Case 79.—Date of operation Feb. 17, 1893. Operator, Dr. Murphy. R., aged 32 years; male. Case occurred in the practice of Dr. Turk. Ten days previous to operation sudden attack of pain and tenderness in right iliac region. Difficult urination: no induration. Operation: Lateral incision and removal of appendix; general peritoneal cavity opened. The appendix was adherent to its surroundings; a fecal stone was found and a perforation of the appendix had taken place. Local gangrene of appendix. Gauze drainage; recovery.

Case 80.—Date of operation Feb. 17, 1893. Operator, Dr. Murphy. Cook County Hospital. W. C., aged 16 years; male. Recurrent appendicitis; three attacks previously. Typical attack; no induration. No temperature at time of operation. Operation: Lateral incision, general peritoneal cavity opened. Appendix situated in the retro-cecal fossa, adherent, very much enlarged and edematous; ligated and amputated. No pus in peritoneal cavity. Drainage; recovery. Pathologic conditions: Mucous membrane ulcerated; very much swollen around the ulcer. Tension on serous covering great.

Case 81.—Date of operation March 9, 1893. Operator, Dr. Hartmann. B., aged 9; male. Patient's illnes began one week previous to operation. Sudden attack of abdominal pain, nausea, vomiting, diarrhea, fever. Abdominal tenderness more pronounced locally; induration. Operation. Drainage of an intra-peritoneal abscess; recovery.

Case 82.—Date of operation March 18, 1893. Operator, Dr. Wittwer. W., aged 8; male. Case occurred in private practice of Dr. Hicks of Burlington, Wis. About two weeks before operation, patient commenced ailing, with an irregular temperature, sweats, occasional vomiting and later on, pain in lower part of abdomen, with a tendency to localization in right iliac region. Examination of urine revealed pus. Induration. Diagnosis: Large, circumscribed perityphlitic abscess with rupture into bladder. Operation: Median incision two inches above symphysis pubis; a large quantity of pus escaped which had involved the whole right iliac region. Two large rubber drains inserted. Complete recovery in four weeks. Appendix was not removed.

Case 83.—Date of operation, March 20, 1893. Operator, Dr. E. W. Lee. R., age 13 years; male. Case occurred in the practice of Dr. P. B. Hayes. Onset sudden, vomiting, pain in right iliac region, extreme tympanites, no induration. At the time of operation temperature 105 degrees F., pulse 124; had been so for three days. Typical typhoid condition. Operation: Appendicisectomy; drainage; no peritonitis. Appendix unusually long and swollen; contained blood and pus; not perforated. Mucous membrane ecchymotic and ulcerated. Temperature fell promptly after operation to 102 degrees F. On the third day patient became deeply jaundiced; rapid recovery.

This is a particularly interesting case, the temperature keeping above 105, and the pulse 134 from the beginning of the attack up to the time of operation. Abdomen enormously tympanitic and tender. He presented all the so-called classical symptoms of general septic peritonitis. Note the pathologic conditions; no peritonitis, simple infection with retention in appendix. How could a diagnosis of the pathologic conditions be made by these symptoms?

Case 84.—Date of operation March 30, 1893. Operator, Dr. Murphy. M. L., aged 22 years; male. Cook County Hospital. History: Patient was transferred from medical division of Hospital after having been sick for five days. Five days previous to operation patient was taken with severe pain in right iliac region. Large doses of morphin were necessary to control the pain. Bowels moved as usual. Patient had noticed no swelling. On examination abdomen tympanitic, severe pain on slight pressure over the appendix; no tumor visible nor palpable; no difference in percussion resonance. The pain increased constantly from the beginning. March 29, 1893, pulse 120, temperature 103.4 degrees, respiration 42. March 30, A.M., pulse 132, temperature 102.2 degrees, respiration 36. Operation: Lateral incision; peri-

toneum opened; packed around seat of operation. Retrocecal abscess, one ounce of pus; appendix amputated; no foreign body or calculus. Sutures inserted, but not tied. Drained with iodoform gauze. In twenty-four hours pulse had subsided to 96, temperature 97.6 degrees, respiration 28. Subsequent convalescence uneventful.

Case 85.—Date of operation April 6, 1893. Operator, Dr. Murphy. M. S., age 30 years. Onset of typical attack April 2, 1893. A temperature of 103 degrees and a pulse of 92 were present at the time of operation. Increased local pain and general tympanites. Operation: Lateral incision; appendix invaginated in a fold of the cecum; a couple of drachms of very offensive pus around it; appendix was ligated near its base; amputated. Drainage; recovery. Appendix had no perforation. An ulceration was the cause of the infection. The mesentery was infiltrated with pus, and there were flakes of pus on the surface of the bowel in the region of infection. This is another illustration of local suppurative peritonitis from ulcer of the appendix without perforation. Patient had a temperature of 103 degrees every day after operation for three weeks, without any other symptom of sepsis or local trouble; as she expressed it, "one of her regular bilious attacks." It annoyed me very much, but no other explanation for temperature could be given. Recovery.

Case 86.—Date of operation April 6, 1893. Operator, Dr. Wittwer. B. L., age 10 years; school girl. History, as given by Dr. Wittwer: Patient was brought to my office two days before operation. Mother gives the following history: For the last two weeks child has been ailing; complained of pain all over body, principally in abdomen around the umbilicus. Child gradually lost flesh, her appetite failed, she had some diarrhea, occasional vomiting, so that finally a physician was called who treated her several days for rheumatism. When I saw her she had some temperature, cheeks flushed, walked into office like a case of hip joint disease. Right leg drawn up in recumbent position. Examination revealed a narrow induration about three inches long in the right iliac region. An operation was made two days later. Typical incision; appendix easily located and found adherent to surrounding tissues; some flakes of pus could be seen on outside of appendix, but no distinct accumulation of pus had formed. Appendix was ligated and removed, suture left in wound, and latter packed with iodoform gauze. Pathologic conditions: Fecal stone. No perforation of appendix. On opening appendix it was found that one-half of mucous membrane towards the cecum was thickened and infiltrated, but not gangrenous, while the distal portion of mucous membrane had become gangrenous and presented the appearance of a diphtheritic patch, ulcerated, with a dirty, thick, grayish, yellow base. There were present in appendix a few drops of pus; recovery.

(To be continued.)

ARMY MEDICAL SCHOOL; CLOSING EXERCISES OF THE FIRST SESSION.

[Reported for the Journal of the American Medical Association.]

The first session of the Army Medical School was closed by appropriate exercises at 3 p.m. on Wednesday, February 28, in the Hall of the Library of the Surgeon-General's office. Most of the officers of the War Department were present, including General Schofield, commanding the Army, Major-General John Gibbon, Surgeon-General Sternberg, Quartermaster-General Batchelder, Inspector-General Breckenridge and others; Ex-Surgeons-General Hammond, Murray and Sutherland of the Army, and Medical Directors Gihon and Gorgas, with the medical officers of the Navy on duty in the Department and many prominent members of the profession in civil life, were also interested spectators of the closing scenes of the session. The officers of the graduating class presented a brilliant appearance in the blue and gold of their new uniforms. The members of the Faculty were also in uniform.

Colonel Alden, Assistant Surgeon-General, President of the Faculty, expressed in his opening remarks the gratification he felt at seeing so many present on the occasion. He referred to the need of a special training for the Army medical officer, and enumerated the various duties which he is called upon to perform that are outside of the work of the physician and surgeon as that work is ordinarily understood. "Let us see now," said he, "how the course of instruction provided carries out the purpose indicated: Five courses of lectures are provided, with two courses of laboratory work and practical instruction in litter drill and first aid. The Department of Military Surgery, including, as it does, the care and transportation of sick and wounded and hospital administration, is naturally one of great importance. It takes up the study of modern military weapons, the wounds they produce, and the treatment they demand under the peculiar conditions imposed by the exigencies of the battle-field and the march; the arrangements necessary for the prompt relief of the wounded on the field of battle and their transportation to the hospitals. The Department of Military Hygiene treats of the important subjects of pure air and how to secure it; of water and its impurities and the dangers of disease therefrom; of sewage disposal and drainage; of healthy sites for and sanitary construction of barracks and hospitals; of food, exercise and clothing; of sanitary jurisprudence and quarantine, and of vital statistics and death-rates as indicative of the health of a community. In the Department of Military Medicine are considered the diseases caused by massing men together or those most apt to affect troops in barracks, on the march and in camp, in peace and in time of war; their causes, symptoms, treatment and mode of prevention. Since we all know that disease kills more than the sword, even in war, the importance of this branch is evident. The instruction in the Department of the Duties of Medical Officers is in some measure complemental. It is designed to give the young medical officer such knowledge of and familiarity with official forms and ways of doing Army business that he may apply his professional knowledge to the best advantage. Military administration is a highly organized and nicely adjusted machine, and special knowledge is necessary to its effective working. In this department the student officer is in the first place taught the necessity for and the requirements of military discipline and subordination as the foundation of his efficiency and success, and his relations to the commanding and other officers. He is taught, both theoretically and practically, how to examine recruits; how to examine into and report upon the sanitary condition of his post or camp; how to conduct sick calls; how to make out the certificates for discharge, especially in reference to the question of pension; how to care and account for public property; how to govern, provide for and instruct the men of the Hospital Corps detachment under his immediate command, with many other matters that need not be enumerated. The instruction given is distinctly practical and includes the making out of many papers."

The Laboratory courses from their practical character and the considerable time given to each, as we shall see, are of special prominence and importance. The course of Sanitary Chemistry, after preliminary work necessary to familiarize the students with principles and methods, took up the detection of poisons, such as arsenic in organic mixture, wall papers, etc., of antimony, mercury and lead; the analysis of the fluids of the body; the chemic examination of the

air and results of ventilation; the study of water and its impurities and their detection; the purity of articles of food, such as milk, butter, cheese, flour, baking powder, etc., and the study of important toxic animal and vegetable products. The instruction in the Department of Clinical and Sanitary Microscopy is entirely by laboratory demonstration and work. Here the student officer is made to become familiar with the use of the microscope in its important application to histologic and pathologic and diagnostic work and the technique necessary for the study of diseased tissues and of pathogenic organisms. A systematic study of the more important bacteria follows, such as the bacilli of anthrax, of typhoid fever, of tuberculosis, of diphtheria and of tetanus; the pyogenic cocci, the micrococcus of pneumonia and the spirillum of Asiatic cholera. In each case the forms and conditions of growth of these bacteria are carefully studied with a view not only to their recognition but to an understanding of the best methods of excluding them or arresting their production. Perhaps it is proper to say here to our non-medical friends that the day when bacteria were a scientific curiosity and their study a pastime or fad has passed. The investigation of these microscopic organisms and their effects lies at the very foundation of modern medicine and surgery, and of advanced medical and surgical practice. In this direction lies to-day our strongest hope and brightest prospects of preventing and arresting disease. Inflammation has been studied under the microscope as it actually occurs in various tissues when artificially produced; then the microscopic appearances as they occur in various diseases and various organs.

The Instructor in Hospital Corps drill has given the Student Officers important practical lessons in first aid to the sick and wounded in emergencies and on the battle-field, such as arrest of hemorrhage, application of splints, etc., and in the careful handling of patients in the litter and ambulance drill. The students are required not only to do these things themselves but practiced in giving directions to the men of the Hospital Corps in the performance of this work.

It will, I think, be conceded that the Student Officers have not been idle this winter. The daily exercises have been as follows: Work in the pathologic laboratory from 9 to 12; in the chemic laboratory from 1 to 3; lecture in one of the various courses from 3 to 4; on Saturday instruction in litter and ambulance drill and first aid in the field at Washington Barracks, at 9 o'clock and in riding at Fort Myer, Va., at 11 o'clock.

The School has been favored with several short courses of lectures by gentlemen not officially connected with it, which have been of great interest and value to the class: On Military Law by Major G. B. Davis, Judge Advocate, United States Army; on Comparative Anatomy, by Capt. J. C. Merrill, Medical Department, United States Army; on Medical Jurisprudence, by Dr. Robert Fletcher, F. R. C. S.; on Parasites of Man, by Dr. C. W. Stiles of the Agricultural Department; Professor W. W. Keen of Jefferson College, Philadelphia, has also delivered a most interesting and instructive lecture before the class on Recent Advances in the Surgery of the Head.

The thanks of the School are due these gentlemen for their kind help.

Five newly appointed Medical Officers have taken the entire course and four Assistant Surgeons of some years service have taken such part as their duties allowed. The Faculty have been much gratified by the interest and industry shown by the class. None have been absent from any exercise without cause, so far as reported to me. It should be noted that the newly appointed officers entered the School immediately after passing the severe ordeal of a long examination for which they had been preparing and were hardly in a condition to enter on four months more of hard work.

In conclusion I am directed to report the result of the examinations and to announce that the relative standing of the members of the class is as follows:

Assistant Surgeon D. C. Howard,
Assistant Surgeon A. S. Porter,
Assistant Surgeon W. H. Wilson,
Assistant Surgeon W. W. Quinton,
Assistant Surgeon T. S. Bratton.

Professor Osler of the Johns Hopkins University, was then introduced and delivered an admirable address to the class. After congratulating its members on their success he said he thought it fitting that the Surgeon-General should have invited a civilian to speak to them of their privileges. Knowing the difficulties and annoyances of civil practice he could the better appreciate and demonstrate to them the advantages of the life they had chosen for themselves. Prominent among these was the great advantage they had, not only over civilian members of the profession but also over their own predecessors in the Army, in being graduates of the Army Medical School, and thereby fully equipped to deal with whatever might come to them in the way of duties or responsibilities. He then spoke of the facilities possessed by Army medical officers for advancing many of the allied branches of medicine. Who, for instance, has a better opportunity to study the vegetation of the country than a young medical officer who sees every part of the United States during the course of his service? Army practice gives self-reliance. Stationed at a Western post without facilities for consulting any one older and more experienced than himself he has to call up the best of his own resources, and learns how needful it is to be prepared for all emergencies and to be independent of assistance. The varied character of the practice that comes under the eye of the Army surgeon tends to give him a place in the front rank of the profession. If of studious habits he can, when in the South, inquire into the etiology of malarial fevers and hematuria; or, while in the West, throw some light on the causation and treatment of mountain fever or study the effects of altitude on the capacity of the chest. Professor Osler then reminded them that many of their predecessors had achieved prominence by their contributions to medical literature or their original investigations, instancing Dr. Beaumont in earlier times, and Drs. Woodward and Smart more recently. In conclusion he cautioned the young officers not to hold themselves aloof from their confréres in civil life, but to join the medical associations, be present at their meetings and make friends in the profession.

Colonel Alden then introduced General Schofield, who conceived that little had been left for him to say, as the advantages possessed by the young Army medical officers had been so well shown in the admirable address just delivered. He congratulated

both the students and the Faculty on the work accomplished during the session. The need of a school of this kind had been felt for a long time, and the present Surgeon-General had done an excellent thing in inaugurating it. He desired to impress on the young officers the importance of their position in Army. The medical officer, he said, was more intimately associated with the line than the members of any of the other staff corps; but this they would soon learn, for they could not be an hour at any military post before they would be made to feel perfectly at home. He closed with a few remarks on discipline and obedience to orders, calling attention to the fact that a commanding officer in issuing his orders has at heart only the welfare of all under his command.

The young men were then introduced to the General and a kind of informal reception was held in the Hall, after which a visit of inspection was made to the lecture rooms and laboratories of the School.

In the evening a reception was given by Surgeon-General Sternberg at which the members of the class became acquainted with many officers of their own and other Corps of the Army.

LEGAL REQUIREMENTS FOR THE PRACTICE OF MEDICINE IN THE UNITED STATES.

[Compiled for the Journal of the American Medical Association.]

So many changes have been made in the legislation regulating the practice of medicine in this country during the past three years, that the Illinois State Board of Health will include, in its forthcoming Report on Medical Education, the text of all laws on this subject in force at the beginning of the present year in the several States and Territories of the United States, and in the provinces of the Dominion of Canada. From this forthcoming Report, through the courtesy of the Secretary of the Board, Dr. J. W. Scott, some data have been gathered which will be of interest to the spring crop of new graduates, and to medical men generally.

Of the six New England States, Maine, Massachusetts, New Hampshire and Rhode Island have no legal requirements for the practice of medicine. Connecticut has adopted a medical practice act which went into effect Oct. 1, 1893, and in Vermont the law requires the registry of a diploma indorsed by a Board of Medical Censors or of a certificate of satisfactory examination by one of these Boards.

Exclusive of the four States first named, the other States and Territories may be roughly grouped into the following three classes:

In Alabama, Arkansas, Florida, Maryland, Minnesota, Mississippi, New Jersey, New York (act of May 9, 1893), North Carolina, North Dakota, Pennsylvania (after March 1, 1894), South Dakota, Texas, Utah, Virginia and Washington, the diploma confers no right to practice and has no legal value, except, in some cases, to give its possessor standing before an examining board. The right to practice in each of these sixteen States is determined by individual examination before boards of examiners created by law.

In California, Colorado, Connecticut (since October, 1893), Delaware, Illinois, Iowa, Kentucky, Louisiana, Missouri, Montana, Nebraska, New Mexico, Oklahoma, Oregon, Tennessee, Vermont and West Virginia, the diploma is subject to the supervision of some designated body vested by law with authority to determine its validity as evidence of its possessor's qualifications for the practice of medicine. Failing the possession of such a recognized diploma, the right to practice may be acquired by passing a satisfactory examination.

In Arizona, Georgia, Idaho, Indiana, Kansas, Michigan, Nevada, Ohio, South Carolina (since the repeal of the Act of 1888), Wisconsin and Wyoming, the presentation of any kind of a diploma—provided only that it be from a "chartered" medical institution—is the sufficient warrant in law for county clerks, clerks of courts, registrars of deeds and similarly qualified judges of medical fitness to admit to practice.

Following is a résumé of the legal requirements for practice in each State and Territory of the United States, in force Jan. 1, 1894:

Alabama.—A certificate of successful examination by the State (or a county) Board of Medical Examiners. Diplomas confer no right to practice.

Arizona.—Registry, with a county recorder, of an unrevoked, uncancelled "diploma regularly issued by a medical college properly and lawfully organized under the laws of the State wherein said college shall be located."

Arkansas.—A certificate of successful examination by the State (or a county) Board of Medical Examiners. Diplomas confer no right to practice.

California.—A certificate issued on the diploma of a college in good standing or upon a successful examination by one of the State Boards of Medical Examiners—regular, homeopathic or eclectic.

Colorado—Similar to California, except that there is but one State Board of Medical Examiners.

Connecticut.—A certificate of registration of the diploma of a college "recognized as reputable by one of the chartered medical societies of the State," regular, homeopathic, eclectic; or a certificate of satisfactory examination by a committee appointed for the purpose by the State Board of Health.

Delaware.—A certificate based upon the registration of a diploma from "a respectable medical college," or upon "a full and impartial examination by the State Board of Medical Examiners."

District of Columbia.—Nominally the indorsement of a diploma, or an examination, by a committee of the District Medical Society; practically no requirement.

Florida.—A certificate of satisfactory examination by the State (or a district) Board of Medical Examiners. Diplomas confer no right to practice.

Georgia.—The registration of a diploma from any "incorporated medical college, medical school or university." The clerks of the Superior Courts are the sole judges of the value of the diploma as evidence of fitness for medical practice.

Idaho.—The record of a diploma at a county seat.

Illinois.—A certificate issued by the State Board of Health upon the diploma of a legally chartered medical institution in good standing as determined by the Board, or upon a satisfactory examination by the Board.

Indiana.—The registration, in a county clerk's office, of a diploma "from some reputable medical college."

Indian Territory.—*a*. Cherokee Nation: An examination by the Board of Medical Examiners; *b*. Choctaw Nation: A certificate based upon a diploma or upon an examination by the Board of Medical Exam-

iners; *c.* Creek Nation: Payment of $25 annually as a license fee.

Iowa.—Similar to Illinois.

Kansas.—The registry of a diploma from "some respectable school of medicine," or of a certificate of qualification from some State or county medical society.

Kentucky.—A certificate from the State Board of Health issued upon the "diploma of a reputable and legally chartered medical college."

Louisiana.—The record of a diploma from "any medical institution of credit and respectability" after indorsement by the State Board of Health.

Maine.—No legal requirement. In 1887 an act to regulate the practice of medicine was passed by the Legislature but was vetoed by the Governor.

Maryland.—A certificate issued upon a satisfactory examination by the State Board of Medical Examiners. Diplomas confer no right to practice.

Massachusetts.—No legal requirement.

Minnesota.—Similar to Maryland.

Mississippi.—Similar to Maryland—except that the examination is made and the certificate issued by the State Board of Health.

Missouri.—Similar to Illinois.

Montana.—Ten years of practice; a certificate upon the diploma of a college "in good standing," or upon an examination by the State Board of Medical Examiners.

Nebraska.—A certificate issued by the State Board of Health upon the diploma of "a legally chartered medical school or college in good standing," as defined in Section 8 of the Act of July, 1891.

Nevada.—The record of a diploma from "some regularly chartered medical school."

New Hampshire.—No legal requirement.

New Jersey.—A license issued upon a successful examination by the State Board of Medical Examiners. Diplomas confer no right to practice.

New Mexico.—A certificate upon the diploma of a legally chartered medical institution in good standing, or an examination by the Territorial Board of Medical Examiners.

New York.—A license issued upon a successful examination by one of the State Boards of Medical Examiners—regular, homeopathic, eclectic. Diplomas confer no right to practice.

North Carolina.—A license issued upon a successful examination by the State Board of Medical Examiners. Diplomas confer no right to practice.

North Dakota.—Similar to North Carolina.

Ohio.—The diploma of a respectable school of medicine, or a certificate of qualification from a State or county medical society.

Oklahoma.—A license issued by the Superintendent of Public Health upon a medical diploma or after examination.

Oregon.—A certificate on the diploma of a college "in good standing," or after examination by the State Board of Medical Examiners.

Pennsylvania.—A license issued after examination before one of the State Boards of Medical Examiners: Act of May 18, 1893; takes effect March 1, 1894. Diplomas will thereafter confer no right to practice.

Rhode Island.—No legal requirement.

South Carolina.—A certificate of verification of the diploma of a reputable medical college. An Act of Dec. 24, 1890, abolished the State Board of Medical Examiners created by the Act of 1888 and under which the diploma conferred no right to practice.

South Dakota.—A license issued by the State Board of Health after examination. Diplomas confer no right to practice.

Tennessee.—A license on the diploma of a college "in good standing," or after examination by the State Board of Medical Examiners.

Texas.—A license issued after examination by a District Board of Medical Examiners. Diplomas confer no right to practice.

Utah.—A license issued by the Territorial Board of Medical Examiners after examination. Diplomas confer no right to practice.

Vermont.—The registry of a diploma indorsed by one of the Boards of Medical Censors, or a certificate of examination by one of the Boards.

Virginia.—A license issued after examination by the State Board of Medical Examiners. Diplomas confer no right to practice.

Washington.—Similar to Virginia.

West Virginia.—A license on the diploma of a reputable college, or after examination by the State Board of Health.

Wisconsin.—The indorsement of a medical diploma by the censors of either of the State or county medical societies.

Wyoming.—The record of a diploma with a registrar of deeds.

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

The Third Annual Meeting Held in Chicago, Sept. 12, 13 and 14, 1893.

AUGUSTIN H. GOELET, M.D., President.

(*Continued from page 313*).

DR. KELLOGG then read in abstract a communication from DR. GEORGES APOSTOLI of Paris, France.

I have received from Dr. Apostoli of Paris, a somewhat voluminous paper entitled, "Du Courant Alternatie Sinusoidal en Gynecologie," by Mina Kaplan-Lapina, which gives a full account of thirty-four cases treated by the sinusoidal current by Apostoli, the treatment being begun before July, 1892. Since that time, Dr. Apostoli has applied the current in the treatment of sixty additional cases, the results of which have not yet been reported. Dr. Apostoli requested me, in a letter recently received from him, to present before this Society an abstract of this paper. The paper consists of 134 large pages of printed matter, so that anything like a complete abstract would be impossible, but I herewith present the following translation of the conclusions drawn by the writer of the paper from the observations recorded:

"In reading the thirty-four observations recorded, one recognizes very readily many weak points which it is sufficient simply to indicate. Some of these observations are incomplete, or without clinical value, by reason of the premature interruption of the treatment. In some cases the treatment was applied too infrequently, so that all benefit received was lost in the interval between the treatments. In other cases the treatment was not sufficiently vigorous, the application was too short, the number of alternations insufficient, or the voltage too low. I have presented the entire series of cases just as they were, since if some of them are without individual value, they form altogether a total which brings conviction, especially from the point of view of the inocuity of the method.

"In order that the new method should become popularized, it is first of all important that it should be studied with the most rigorous exactness.

"It is necessary that failures as well as successes should be known to all in order that each may be able to judge of the facts. At the beginning of the employment of new

methods choice is impossible, and the remedy must be applied imperatively, if one begins by treating uniformly all cases, even the most unlike. At Dr. Apostoli's clinic he has applied the remedy at first to all patients who have presented themselves, whether suffering from fibroma or lesions of the appendages, applying the new method uniformly; naturally the result has been variable, these variations have been closely observed, and have made it possible to make a selection of cases which was at first impossible.

"I can not do better, in closing, than to quote the following from the resumé of a communication presented by Dr. Apostoli at the International Congress of Gynecology at Brussels, September 15, 1892.

"The alternating sinusoidal current which M. D'Arsonval has introduced into electrotherapy is useful in gynecology, and the following are the general results of this new therapeutic agent:

"In five months, from March to August, 1892, thirty-four patients in my clinic, comprising twelve cases of fibroma and twenty-two cases of appendages, have been treated by the alternating current. In all these cases the application has been the same, one pole in the uterus and the other upon the belly. The duration of each seance was five minutes; the applications have been made two or three times a week.

"The rate of alternation has been varied according to the circumstances, or rather according to the sensibility of the patient, between a minimum of 4,000 to 6,000 and a maximum of 11,000 to 12,000 per minute.

"The apparatus which I have employed is the first model constructed by Gaiffe, which consists of Clark's magneto-faradic machine modified and transformed by D'Arsonval, going with great speed a maximum difference of potential of sixty-four volts, and with moderate speed a difference of thirty-two volts. This apparatus has been propelled by the pedals of a sewing machine. All my thirty-four patients have been carefully observed, and the following are the general conclusions which may be drawn from this initial period of treatment; conclusions which appear to be not yet entirely definite by reason of the imperfect character of the instrument employed, and the relative brevity of the experiments:

"1. The alternating sinusoidal current applied in the intra-uterine cavity, and in the conditions under which I operate, is always well borne and free from danger.

"2. Its application is followed by no painful or febrile reaction, and is, on the contrary, generally accompanied by manifest sedative effects.

"3. It appears to have no marked action upon hemorrhage as a symptom, but sometimes has a tendency to prolong this symptom.

"4. It exercises a very decided effect upon the symptom pain. This action was noticeable from the very first seance, and most often immediately at the end of the seance.

"5. It is a useful remedy in the treatment of leucorrhea which under its action often diminishes or disappears.

"6. It has no appreciable effect upon hydrorrhea or fibroma in certain cases.

"7. Its influence upon anatomic retrogression in cases of fibroma has not yet been clearly established.

"8. It increases the resolution of peri-uterine exudates."

The discussion was further continued by a paper on

FURTHER STUDY OF ELECTRO-ANESTHESIA AND FREQUENCY OF INDUCTION VIBRATION.

By William F. Hutchinson, M.D., of Providence, R. I.

Read in the absence of the author by Dr. W. H. Herdman.

Since I had the honor to lay before the Fellows of this Association, at the last annual meeting in New York, the results of experimentation in producing induced current vibrations of extreme rapidity and in counting them accurately, by means of comparison with musical tones, have been still encouraging. By means of one of Cook and Read's standard pitch pipes, which gives a double octave complete by turning a movable arm, more precision in count has been attained than was possible with any tuning fork, which could only give tones and half tones without musical interval. This greater accuracy of computation of wave lengths has led to confirmation of my previous idea, that it is necessary to have exactly a certain number of vibrations per second to produce the effect sought, viz: local anesthesia,—that a greater number increases pain; a lesser is without effect.

And it led to further studies which I am now to lay before you, whose upshot has convinced me that the reason, the cause of production of electric anesthesia, must be sought in that principle of mechanics termed "the superposition of small motions." Since this may not be quite familiar to all, permit me to illustrate by imagining a slender wire such as a piano string, fixed at both ends, and stretched so that its tension greatly exceeds its weight.

Now let us see what happens when a small transverse disturbance in a single plane is imparted to this wire:

When one fixed end is reached by this wave, it is reflected along its path and back again until the filament is brought to rest by gravity, friction, etc. During these passages to and fro, it is found that a certain space upon the wire remains permanently at rest—is dead, so to speak, and that this space is about the middle of its length. Wave after wave passes through it as long as the original impetus or any new one lasts but, being of precisely equal lengths, neutralize each other at the dead point, where rest reigns.

It is in this way that I conceive electric anesthesia is created and maintained; only replacing the reflected wave on the wire by efferent impulses along the nerve whose tract of supply we seek to influence. And so it is seen that these two elements, the electric wave and that of the nerve, must be exactly alike, or no dead point—no anesthetized space, can occur. Now, to produce a reflex change in the nerve center a summation or addition of centripetal excitation is required, and when these reach a certain number, the center responds (Stirling).

Reflex actions require time. It takes a certain division thereof for a note of pain to reach the center and its sensory mandate to return, and if this be measured, taking into account how much is occupied by the passage of the nerve current along the nerves involved and the latent period of muscular contraction, and subtract this from the total time, the remainder will represent the time occupied by the changes in the center, or the reflex time. This has been found to vary from .0555 to .0471 of a second (Helmholtz). If these calculations of the physiologist are correct, it will follow that just as many vibrations must be imparted to a sensory nerve, inward bound, as are proceeding outwardly upon it, in order that a dead point, a zone of anesthesia, may be created.

To my satisfaction, this calculation corresponds closely to results reached by the singing rheotome. You will perhaps recall in my account of former experiments how, when the speed of the ribbon ran above a certain number of vibrations per second, pain was rather increased than lessened, and no anesthesia followed even prolonged applications. The speed then found useful was that of major C—or about 540 vibrations per second. Allowing for small variations of speed of nerve transmission in different persons, the rate of electric wave and that of nervous impulses is seen to be identical, thus proving, to my mind, that pain is simply a mechanical expression of disturbed energy, to be destroyed, at least temporarily, by such foreign vibratory action as will restore rest to a part of the path along which it moves.

And, since all morbid conditions of the body alter the rate of transmission of nerve impulses, it will be found necessary to ascertain accurately this rate before applying electrodes to painful spots, or an extraordinary increase of sensibility will follow. It is, however, a simple matter to do so by placing small electrodes along the course of any unaffected nerve trunk, like the median, and running up and down the scale with the ribbon, keeping within a tone of major C, until a tingle and subsequent numbness is felt in skin tracts supplied by said trunk. That sound means as many vibrations, may be read from a scale, and is the normal rate of nerve impulses in the case in question.

Sometimes I find this normal rate locally interfered with, as in a felon or carbuncle, when high inflammation has increased its speed; but as a rule for practice, the above is pretty safe to follow.

Perhaps some of the difficulties and failures I have experienced during the last year's work with the singing rheotome have been due to imperfect comprehension and unskilful application of the law.

I have found no cause to change my instrument, although Mr. Louis Downs, expert electrician, devised a plan whereby, by altering the extent of a magnetic field about a horse-shoe magnet, he obtained a note at least two octaves above any that I had been able to get, and it seems to me at present that it is sufficient to maintain the rate rather than seek for higher speed. Yet it is possible that the same tone an octave higher may do better work by producing anesthesia more rapidly, or extending its area, which still is restricted in my hands to a space scarcely longer than the electrode. I propose to use Mr. Downs' apparatus in a series of experiments later.

(*To be continued.*)

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SATURDAY, MARCH 10, 1894.

INTERNATIONAL SANITARY CONFERENCE.

Through the London *Standard* several days ago the intimation was made that the American delegates to the International Sanitary Conference, now in session in Paris were not in sympathy with the other delegates with regard to relaxing quarantine regulations to prevent the spread of cholera, and at the same time hinting that they were obstacles to the work of the Conference, and that it was a Conference of European Health Authorities, and that legitimately they had no business there.

At the Conference held at Venice about a year ago, to which the United States was not invited, there was a proposition to relax quarantine, and a number of the countries represented then were favorably inclined, France, though, still insisting on some kind of quarantine. Another Conference was held later at Dresden, when all agreed that were then present except Russia, Turkey, Greece and Spain. It was, however, found during the summer, that when threatened with cholera nearly all resorted to some kind of quarantine. England has for years been opposed to quarantine mainly from commercial reasons, and no doubt also to the fact of less liability to certain epidemics that affect the Continent, especially that portion bordering on the Mediterranean. It was also agreed at Dresden that whenever cholera made its appearance in any country, notification of the same should be given to the other members of the Conference. This agreement was not always carried out promptly, lest it might injure the business interests of the country or place.

The commercial aspects of an epidemic are more jealously guarded by the different countries of Europe, than by the different States in this country. The following cablegram explains itself, and is corroborative of the intimation contained in the *Standard:*

PARIS, Feb. 27.—Several Paris newspapers remark with surprise that the United States delegates to the International Sanitary Conference oppose every proposal to relax quarantine restrictions, and support all measures tending toward more exacting regulations of immigration. The delegates from other powers are said to have become convinced that the American representatives wish to use the resolutions of the Conference as means of repressing emigration from Europe to America.

It is to be hoped that our delegates will insist that when cholera prevails in a country or place, that no immigrants be sent to the United States from the same. Cholera has always been introduced into the United States through the steerage, and the experience of the past shows how important this is to us. The conditions that obtain here are entirely different from what they are in Europe, especially when it is borne in mind what an important factor the steerage is, in the development and propagation of disease.

In the summer of 1892, Hamburg received immigrants from cholera infected districts of Russia, and fearing that the disease might break out in that city made arrangements to lodge them outside of the limits, and from there to send them direct to the steamer for shipment to the United States. It made no difference to Hamburgers how and where the disease was spread, but Fate decreed otherwise, and even after the cholera made its appearance in Hamburg, it was not announced until after eighteen days. Other instances, showing the cupidity of steamship companies and of cities occurred that summer.

In 1893 Naples for a time denied the presence of cholera in that city so that immigrants should be allowed to leave that city for this country, although the immigrants came from different places in Italy where cholera existed. In one instance they were inspected and supposed to be all right, when a few days after the departure of the steamer cholera broke out, and about the same time the Marine Hospital Inspector accidentally discovered that a number of cases had died of that disease in that city and fresh cases were occurring daily.

There is no more striking illustration of the disposition of steamship companies, than in the case of the steamer that left Genoa with 450 immigrants collected from places in Italy where cholera was prevailing, for Rio. Possibly there may not have been cholera in Genoa at the time, but not long after the departure of the steamer the disease was acknowledged to be there. Soon after sailing cholera broke out on the steamer, and before Rio was reached 150 cases and 70 deaths occurred. The steamer was not allowed to land, and on its return to Genoa, stopped at the Island of Teneriffe for provisions and water. As the result of being allowed to land, cholera was introduced into the Island, and before the epidemic was ended over one thousand died. In addition to the suffering of those on the steamer, the loss of life on the Island, and the horrors incident to such an epi-

demic may be justly attributed to the selfishness and cupidity of the steamship company.

Our delegates are right in trying to secure such safeguards, as will prevent the introduction of cholera into this country by immigrants. The more we impress the European authorities that this country will not permit them to do as they please in this matter, the more care will be exercised, if not from humane, from financial reasons. It is also claimed by some that there will be no danger from that source the coming summer. How do they know? This pandemic of cholera is not yet over in Genoa, and at this time recrudescence of the disease is occurring at a number of places, while at the same time it must be borne in mind that there are countries and places where cholera has not yet appeared during this visitation.

ARMY MEDICAL SCHOOL, NETLEY, ENGLAND.

From the *Lancet*, of February 10 we learn that on January 31 the sixty-seventh session of this School was brought to a close. This School was established a few years after the Crimean war to remedy deficiencies in the education of the medical graduates selected by competitive examination for service in the Army. The results of the recent examinations held in the School were read by Brigade-Surgeon J. Lane Notter in the presence of a distinguished company, including Sir Alfred Lyall, Sir Joseph Fayrer, Sir Thomas Longmore and others. The marks gained at the competitive examination for admission as the approved candidate are added to those resulting from the work done at Netley, and the commissions and rank of the graduates are determined by the combined numbers. Eleven candidates were approved for the Army Medical Service and twelve for the Indian Medical Service.

After congratulating the prize winners on having scored their first public success, Sir Alfred Lyall in a felicitous speech reminded the young officers that the prizes of the world were before those who had not taken premiums, as well as before those who had lately proved themselves so successful. Success put good spirits into a man and sent him into the world with good hopes and with a well-merited degree of confidence in himself. He said he felt sure it was not necessary to warn the prize winners not to take away too much of this confidence. Though it was an excellent thing to have won prizes, prizes were not everything in life, and an examination did not test those very high qualities which come in with such effect later—qualities which formed the mainspring of professional success—judgment, activity and accuracy in thought and action. The whole history of professional career showed that those who had not won prizes were often later on in life very formidable rivals of those who had. He observed that although the word, "luck," was an element in the success of many, yet the word formed by the prefix of a "p" would have far greater influence on the careers of those listening to him, and he reminded his hearers that no less than three officers of the service had of late been awarded the Victoria Cross for bravery in Burmah. In addressing the Indian officers he spoke of the immense field open to them, not only in the medical department of the army in India, but also in the civil departments in the goals and sanitary service. In speaking of the width of field he mentioned the names of distinguished officers of the Indian Medical Service who had been led away from medical work to become administrators and ambassadors. He advised all the officers of both Services, when in India, to cultivate the friendship of the natives, to get to know and understand them, for they were worth knowing; and to study their languages, their religions and their prejudices. In wishing the young officers prosperous careers he spoke to them of the preservation of their health, and reminded them that good health means steady nerves, and steady nerves power at critical times—power to cope with difficulties and to pass through times of stain in such a way that in future years such moments could be remember with pleasure and satisfaction. He hoped that the young officers would ever do their duty in the spirit of men who remembered that they had in trust the reputation of England and the character and traditions of high and noble services.

Sir Joseph Fayrer spoke of the pleasure which he always felt in the opportunities accorded him of addressing a few words to the young officers before they left the Netley School. He said that he did not consider that they need much fear the Indian climate, for although epidemic diseases were common and severe in India, the influenza, pneumonia and bronchitis of this country were almost as much to be dreaded. He spoke of the enormous field of research open to the young officers of both Services; he reminded them that medical science was still in its infancy and that they should go to India and other parts of the world with unbiased minds ready to observe, record and discover. They left the Netley School splendidly equipped and in every way fit to go to India and other foreign stations and build up the science of the future. He also spoke to them of the preservation of their own health in tropical climates. He wished them good health and good fortune, and hoped that they might one and all some day revisit Netley.

Surgeon-Major-General Broke-Smith addressed a few words to the company, thanking Sir Alfred Lyall for his kindness in coming to Netley to distribute the prizes and for the admirable address which he had delivered. The ceremony was brought

to a conclusion by a few words from Brigade-Surgeon-Lieutenant-Colonel Notter, in which he wished the young officers Godspeed. The company was afterwards entertained at luncheon at the Army Medical Staff mess.

PATHOLOGIC LESIONS IN INSANITY.

The pathologic anatomy of insanity in its simple, acute and so-called partial forms is yet largely a matter of conjecture. We have, it is true, the stigmata of degeneracy in the hereditary types and the congestion of mania and the ischemias attending many cases of melancholia, but these are not constant or even so frequent as for their occurrence to be considered the rule. In a very large proportion of the cases of acute insanity we are forced to fall back on the assumption of microscopic changes as yet beyond the scope of our powers of observation, or to assume as might, perhaps, be done in accordance with the later pathologic theories, a toxic action directly on the brain. The phenomena of simple insanity, mania, melancholia, and the so-called primary dementia, are not altogether inconsistent with the hypothesis of a toxine, but it will probably be a long time before the theory of such an origin will receive general acceptance. The difficulty of this hypothesis is a little greater with the systematized insanities, even those that are most purely psychoneurotic rather than degenerative in their nature. Still, even here, there are facts that may be held to support it, e.g., alcohol, which produces acute delirium and sometimes mania also gives rise to a characteristic paranoia. It is not unjustifiable to suppose, therefore, that a toxine which may in certain quantity overwhelm the nervous system and produce generalized derangement, may under other circumstances and in what we may call a continued dosage, bring about a condition of chronic partial alienation.

To those, however, who wish to hold to the theory of microscopic changes in the brain, the comparatively recent researches in the minute anatomy of the nervous system by Ramon y Capal, Kölliker, Van Gehuchten and others, may afford some suggestions. Gowers, and more recently Ferrier, have emitted the supposition that derangements of the terminal end brushes of the spinal nerves may account for certain spinal diseases, Landry's paralysis for example, the pathology of which has thus far eluded our search; and Tanzi, in a review of the recent progress of research in the anatomy of the nervous system, has suggested that the perfection or otherwise of contact, or rather contiguity, of these processes to the nerve cells will account for the facts of consciousness and mental capacity. According to his theory he accounts for certain actions, once conscious and labored, becoming unconscious and automatic, by the supposition that the contiguity of the nerve fibrils to the cells has reached its maximum and thus affords the least possible interruption or hindrance to the nerve wave, and by the same method of reasoning he explains the various degrees of individual capacity for different kinds of work. It is not possible to give here his line of argument, but it is not difficult to see how it will apply to psychic derangements, and while the idea is purely hypothetical, it yet comes within the legitimate range of the scientific uses of the imagination. It suggests an interesting though rather difficult line of microscopic research which may or not be fruitful of results.

CHOLERA.

A recent cable from Athens says that it is learned from official dispatches that cholera has reappeared in Constantinople. A dozen deaths from this disease have recently occurred, chiefly in the barracks. It is believed that the authorities are hiding facts which would show the wide extent of the epidemic. A Berlin cable of February 27, says that a dispatch from Wundsbeck, three miles from Hamburg, says that two cases of supposed cholera have been found in the Poolstrasse in that town, and that the patients have been removed to the hospital. It is to be hoped that our delegates to the Conference at Paris will insist that when cholera does occur in a country, immigrants from that country shall not be sent to this country. The experience of the past has shown how important this question is to us. The conditions that obtain here are decidedly different from those in Europe; at the same time it must be borne in mind what an important factor the steerage is in the development and propagation of disease. During the past summer immigrants were hurried on board ship and not allowed to remain in ports, when the local authorities and the steamship companies knew that they came from infected localities, and how often.

YELLOW FEVER.

The presence of yellow fever at Rio Janeiro and the unusual conditions incident to the siege that obtain there, will not alone cause the quarantine authorities of the Gulf and South Atlantic ports, and the Marine Hospital Service to be on their guard, but also the Medical Department of the Navy. Already cases are reported on the *Newark*, and there is no telling when others will occur in the other vessels at that station. Yellow fever is said to be increasing, and the sanitary condition of Rio is very bad. The *Newark* has been sent further south where lower temperature prevails, others sent to sea, and every possible precaution is taken to prevent communication with the shore by the crews of those that remain. We shall watch with much interest the effort to purify, and prevent the spread of the infection on the *Newark*.

It is the first time for a number of years that the disease has appeared on a vessel belonging to our Navy, so early in the season.

The last number of the JOURNAL contained the recommendations given by a committee which had been appointed by the Conference of Gulf Quarantine Authorities, held in New Orleans, Feb. 2 and 3, 1894, with regard to the regulation of the fruit trade during the quarantine season. The recommendations differ slightly from the regulations of the Treasury Department, and the Conference asks that the regulations of the Treasury Department be so modified as to coincide with the views expressed by the Conference. The recommendations will no doubt receive due consideration, as Drs. Cochran, Patton and Hargis (the Committee) are old and experienced yellow fever experts, in fact none better living, and personally and officially interested in protecting their respective States from yellow fever.

RIGHT OF A STATE TO SUPPORT ITS INSANE IN PRIVATE ASYLUMS.

The Supreme Court of Missouri holds constitutional, in a decision rendered Dec. 23, 1893, in the case of State v. Seibert, State Auditor, section 8 of the Act of the Legislature of that State approved April 1, 1893, appropriating "for the support of the indigent insane in the insane asylum of the city of St. Louis, who belong to the State outside of the city of St. Louis, fifty thousand dollars, ($50,000), which sum shall be paid upon the requisition of the treasurer, indorsed by the mayor of the city of St. Louis and approved by the Governor, in equal monthly installments." If the appropriation had been made for the support of the insane asylum of St. Louis, the court says there could be no doubt of its unconstitutionality, for the latter is indisputably a private institution, belonging to and controlled by the city, and the State constitution expressly forbids the Legislature making any grant of public money to any individual association, municipal or other corporation whatever. But while, regardless of constitutional restrictions and limitations, a Legislature has no power to raise money by taxation, or appropriate for purely private purposes, public money may be applied to the support of the insane. A private corporation or individual may be the recipient of the funds of taxation, provided that the use be a public one. And there being no constitutional inhibition against the State dispensing its public charity through the agency of a private institution, the court further says, it can see no reason why the insane of the State, not belonging to the city of St. Louis, who are found in the city, may not be cared for and supported in its insane asylum at the public expense, if it can be as well and economically done. The expediency of providing for their support is a matter that must be left to the discretion of the Legislature.

CONSENT AS A DEFENSE TO DANGEROUS OPERATIONS.

Consent to surgical operations in dangerous cases, where the effect is fatal, is only a good defense to a charge of manslaughter, where the operation is performed with due care and skill. It is no excuse for recklessness or even want of usual skill. So holds the Supreme Court of Washington in the case of State v. Gile, decided Jan. 9, 1894, where a conviction of manslaughter was effected. A number of expert witnesses testified in this case. Some of them were positive that deceased, an old man, died from the effect of a surgical operation performed upon his hip, it was alleged, without his consent, by a physician only employed to reduce a supposed dislocation of the head of the femur by simply pulling the bone into its proper place, while others seemed to think that death might have resulted from some other cause. The condition of deceased's hip at the time of the operation was shown to have been better than it had been for months previously. He was not shown to be suffering from any disease; but it appears that after the operation was performed he never rallied, but, on the contrary, steadily declined, until he died. With all the circumstances and evidence before them, the jury found adversely to the surgeon's contention that the cause of death was not shown beyond a reasonable doubt, and the Supreme Court states that it is unable to say that their conclusion was not supported by the evidence. It is also to be noted that the dying declaration of the patient, that he had been "butchered" by the doctors, it is held, simply meant killed in an unusual, cruel or wanton manner, was not a mere expression of opinion, and was admissible in evidence.

PRESIDENT GARFIELD'S CASE.

We shall begin, in an early issue, the publication of original notes of the case of PRESIDENT GARFIELD.

The late DR. D. W. BLISS of Washington, would not permit them to go out of his possession during his life time. Recently the heirs of DR. BLISS turned the record over to DR. ROBERT REYBURN, who is now the sole survivor of the staff of physicians in attendance.

The notes were recorded at the time by DR. REYBURN, and have a professional interest which time can not dim.

The melancholy fate of PRESIDENT GARFIELD was made even sadder by the constant attacks on his physicians through the public press. These attacks were mainly due to misinformation, rather than to jealousy or malice.

Time has softened many of the asperities that were then manifest, and the profession are now quite prepared to give unprejudiced attention to this *cas célèbre*.

CAPTIOUS CRITICS.

We are naturally pleased to see the great interest taken in the articles from time to time published in the JOURNAL, but when the editors of other journals pervert friendly interest to carping criticism on what we do *not* publish, we have a clear right to invite their attention to a homely adage which reads, "*Mind your own business.*" It is with sincere regret that we apply the invitation to the editors of the *Philadelphia Medical News* and the *Pittsburg Medical Review*, but their bad manners in attacking DR. WOODBRIDGE, a valued contributor, and a worthy member of the ASSOCIATION, for daring to divide his article in two parts; and attacking in savage strain the editor of this JOURNAL for presuming to publish the same (also in two parts), seems to show a desire to find fault, as ridiculous as it is senseless.

CORRESPONDENCE.

LETTER FROM EUROPE.

Major Girard, Surgeon U. S. Army, to Professor Senn.

No. I.

WÜRZBURG—JULIUS HOSPITAL—PROF. SCHÖNBORN—DR. HOFFA.

WURZBURG, Feb. 13, 1894.

Dear Dr. Senn:—On my arrival in Würzburg I proceeded to the Julius Hospital, where thirty-two years ago I had attended the clinics, and was greatly surprised and pleased that, instead of being directed to the old amphitheater in the main building, I was informed that a new operating room with attendant offices had been constructed in the second court and occupied since 1889. I repaired thither and presented myself to Professor Schönborn, the distinguished operator of this University. I met with the cordial reception usually bestowed upon Americans, especially when provided with an introduction from you. It being the hour for the clinical instruction we proceeded through a large anteroom paved with marble terrazo to the amphitheater. This room has accommodations for about 200 students; the framework of the seats being of iron, the walls of cement, the floor of cement stone; the whole room can be and is treated twice a week with a powerful stream of water, thus effectually disposing of any accumulation of effete matter. In this respect, as well as in the lighting, it is superior to that of Göttingen. In this latter place a large glass front faces the amphitheater, which is also lighted by a skylight, while in Würzburg the three sides of the amphitheater above the seats and the ceiling are all of glass, providing an excellent illumination. Night operations are lighted by a gas chandelier, which can be raised and lowered. The operating-table is a marvel of ingenuity.

The clinic commenced with presentation of a spindle-celled sarcoma adjoining the knee, a pes valgus, an osteosarcoma of the femur and a fistula in ano. The consulting staff, as you call them, composed of three students of the advanced course, distinguished themselves by very brief answers in a low voice. The Professor excusing himself to me for this exhibition, I suggested timidity, but he bluntly called it ignorance. He operated on the fistula with the greatest care, curetting it after laying it open, carefully searched for possible side channels and then cut off with scissors all the superlying tissues, considering it all tubercular tissues. The usual iodoform gauze packing terminated the proceeding.

A patient was then brought in with a tubercular abscess over the manubrium sterni. After chloroforming an incision was made over the bulging abscess and a large quantity of pus escaped, which apparently had burrowed along the lower border of the clavicle. The whole clavicle was exposed by an incision and a large counter incision made in the axillary cavity, giving passage to an enormous quantity of pus, the origin of the abscess apparently proceeding from the under part of the sternum. This was removed by chisel, gauze, and rougeurs, exposing an extra-pleural cavity in the chest. The Professor indicated where he would incise the internal mammary artery, but found it impossible to seize the violently spurting vessel among the rigid tissues and after long continued ineffectual attempts he had to content himself with plugging the cavity with iodoform gauze and thus arresting the bleeding. I would have felt safer if the Paquelin cautery had been applied, but kept my own counsel.

I am promised for to-morrow by Professor Schönborn a high excision of carcinoma of the rectum, and by Dr. Hoffa, the orthopedist, an operation for congenital luxation of the hip joint.

I met Dr. Hoffa, who is quite well known in the Eastern States from a sojourn there, at his private clinic and was fortunate enough to witness the above operation, which is a specialty of his. He stated that he had made it seventy times with uniform success. I saw a number of convalescent cases with excellent results. A girl of 18, on whom he operated, had one side operated on with good motion. The peculiar lordosis of the unoperated case still existed, but disappeared at once after the second excision. His operation differs from that of Lorenz, by its being made with a posterior incision, which is more suitable for resection of the head of the femur. In very small children, he contents himself with excavation of the acetabulum, while in grown persons, owing to the difficulty of obtaining good adhesion, he saws off the head immediately above the trochanter. In the former operation Lorenz's method is claimed to be preferable, as causing less hemorrhage. This, however, seemed to be very slight even in Hoffa's method. A slightly curved incision about eight inches long parallel with the border of the ilium is carried down to the gluteus maximus which is divided in the direction of its fibers down to the gluteus minimus, which has to be divided transversely. The trochanter being reached its muscular attachments are peeled off beneath the periosteum and the bone sawed through, so that when it is brought into proper position the sawed surface is in exact apposition with the ilium above the acetabulum. The head is then removed and the capsule carefully excised. The periosteum of the part of the ilium, which is to receive the trochanter, is freshened. After careful flushing the limb, from the extreme flexed position maintained during the operation, is extended, the wound packed with iodoform gauze, and the limb placed in an extension apparatus. The operation appears to have obtained favor among the German surgeons, as I saw a convalescent from it at Koenig's clinic.

Dr. Hoffa has a very complete set of orthopedic apparatus, among which those liberating adhesions in joints by means of oscillating weights particularly attracted my attention.

The cases in Professor Schönborn's clinic were first, Rydygier's operation for carcinoma of the rectum. A short description of the operation as performed here may be of interest. A curved incision starts from about two inches of the anus along the left sacro-iliac articulation to the rim of the ilium, and is met by a transverse one along the upper border of the sacrum. The left sacro-iliac ligaments are divided. The sacral nerves of that side are sacrificed. The sacrum after blunt liberation from the soft parts is

tipped over and exposes the rectum. This part of the operation was complicated by severe hemorrhage, which required numerous ligatures. The rectum was ligated after the usual precautions and excised, after which the ovaries and some of the intestines came into plain view. Professor Schönborn is averse to suture of the peritoneum,as it greatly prolongs the operation and increases its dangers. The wound is simply packed with iodoform gauze. For the same reason he prefers bringing down the bowel to the external orifice and stitching it to an incision around the external sphincter, instead of making an intestinal suture. He also believes that in case the sutures do not hold, the disaster with external suturing is not as serious as when the feces escape into the pelvic cavity, between the ends of the bowel. He is not in favor of locking up the bowels, as eventually this brings a great strain to bear from the inevitable accumulation.

The next operation was for mastoid disease of only six weeks standing with otorrhea, which two weeks ago suddenly became arrested, resulting in rise of temperature, tenderness over the mastoid process, headache, etc. An incision parallel to the ear, over the process exposed the bone, which was at once attacked with chisel and gouge. Pus was only reached when the inner table was exposed, which already revealed a perforation and fibrinous deposit on the dura. Every vestige of diseased or infiltrated bone was removed by the gouge, the cavity packed with iodoform gauze and the external meatus filled with iodoform. Professor Schönborn insisted on early operation in all these cases and on its being made thoroughly. The most minute care was taken to preserve asepsis.

I may mention here, that I learned that the arrest of hemorrhage of the internal mammary in yesterday's operation by the iodoform tampon was successful. Professor Schönborn, on inquiry, informed me that he did not believe that the cautery would arrest hemorrhage from such a large vessel and that he had to resort to the tampon because it was impossible to seize and ligate the artery in the dense cicatricial tissues which surrounded it.

My next will be from Heidelberg.

Yours very truly, A. GIRARD.

The Therapeutic Use of the Sulphites.

PARIS, Feb. 19, 1894.

À M. le Rédacteur JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION *à Chicago:*

Très Honoré Confrère:—Je viens de lire dans votre numéro du 3 février une étude très intéressante, du Dr. Joseph Jones sur les *sulphites et hyposulphites.*

M' e' tant moiméme beaucoup occupè de le question.

Je vous prierais de vouloir bien faire parvenir à value collaborateur le Volume "traitement rationnel de la Phthisic Pulmonaire," qui contient un chapitre important sur le *Médication Sulfitée.*

Cette lecture lui permetra è une prochaine occasion se mentionnen mon nom parmi les partisants de la mèthod.

Veullez agreèr avec mes remercfments anticipes l'assurance des mes sentiments très confraternals.

DR. DE PIETRA SANTA.

[TRANSLATION.]

"I read in your number of February 3 a very interesting study by Dr. Joseph Jones, on the sulphites and hyposulphites.

"I have myself been much occupied with this question. I beg you to bring before your collaborator the book 'Rational Treatment of Phthisis Pulmonalis,' which contains an important chapter on medication by sulphites.

"This reading will permit him on the next occasion to mention my name among the partisans of this method."

[The volume referred to by our distinguished confrère, who is editor of the *Journal d' Hygiene* of Paris, was published in 1875. Chapter VI of this book contains a strong argument in favor of medication by sulphites in cases of phthisis pulmonalis. He cites the monograph of Giovanni Polli (of Milan) 1860–1861, presented to the Royal Institute of Sciences and Letters of Lombardy. "Sur les maladies par ferment morbifique, et sur leur traitement par les sulfites alcalins et terreux."

Dr. De Pietra Santa says:

"Sulphurous acid has the property of preventing and arresting all the fermentations of vegetable and animal matters. Its association with alkalin bases, as soda, lime and magnesia, far from modifying its manner of action, and destroying its antifermentative action, renders it on the contrary more regular, more energetic, more permanent, and permits the introduction in the organism, with known and ponderable doses, without altering the principles of organic life.

"The perfect innocuity of the sulphites, and their complete tolerance by the organism, in rendering possible the administration (prophylactic or curative) in all the affections produced by a pathologic ferment (virus, contagion, or miasm) as in intermittent or paludal fevers, acute and chronic exanthems, typhoid fevers, and diseases from purulent absorption."—EDITOR.]

Hay Fever.

CHICAGO, March 3, 1894.

To the Editor:—In reply to the question of Dr. F. C. Ewing in the JOURNAL of this date a list of the best hay fever resorts can be obtained by writing to one of the officers of the United States Hay Fever Association, for their last manual —for 1893.

Their addresses are: Hon. Frank B. Fay, Chelsea, Mass., President; Rev. John Peacock, D.D., Holmesburg, Pa., Secretary. Yours truly, S. S. BISHOP.

No Smallpox In Minnesota.

RED WING, MINN., March 6, 1894.

To the Editor:—Please contradict the report of smallpox in St. Paul. There has been none there this year. The report of students exposed therefore is a mistake. There is none in Minnesota.

CHAS. N. HEWITT, Sec'y State Board of Health.

ASSOCIATION NEWS.

The Association Train will leave Chicago Monday, May 28, via Santa Fe R. R., Rio Grande Western, and Southern Pacific, for San Francisco via Denver, Colorado Springs, Leadville, Manitou, Glenwood Springs, Salt Lake, Ogden, Truckee and Sacramento. Returning, after the meeting, the train will pass through Sacramento and Northern California to Portland, thence east by way of the Northern Pacific R. R. to St. Paul; and Chicago, Milwaukee and St. Paul Ry., St. Paul to Chicago. A stop over at Yellowstone National Park for those who desire it has been arranged, and it is understood that at several places on the journey there will be short stops. President Hibberd's party in a special car join the train at Chicago, and the St. Louis party are expected to join at Kansas City. From all points east and south, concentration on this train should be effected at Chicago and St. Louis.

SOCIETY NEWS.

The Ramsey County (Minn.) Medical Society met February 26. The following officers were elected: Dr. A. B. Ancker, President; Dr. Davis, Vice-President; Dr. H. Longstreet Taylor, Secretary; Dr. O. S. Pine, Treasurer and Dr. J. M. Finnell, Chairman of the Pathological Section.

The Colorado State Medical Society.—*To the Members of the American Medical Association:*—Members of the AMERICAN MEDICAL ASSOCIATION are cordially invited by the Colorado

State Medical Society to stop over in Denver on returning from the coast and attend the meeting of the Society convening on June 19 and continuing through June 20 and 21.

Members who expect to return via Denver are invited to correspond with the Secretary, that invitations to participate in the program, and proper entertainment may be arranged. EDMUND J. A. ROGERS, President.

A. Stewart Lobingier, Secretary.

Onondaga Medical Society.—The regular quarterly meeting of the Onondaga (N. Y.) Medical Society was held in the Society's rooms February 28.

Papers were read as follows: Dr. H. L. Elsner, "On the Diagnostic Value of Stomach Inflation, Report of Cases and Presentation of Patients;" Dr. W. S. Cheesman, "Supra-pubic Cystotomy in Vesical Hemorrhage;" Dr. D. M. Totman, "A Case of Supra-pubic Cystotomy for Vesical Calculus;" Dr. John VanDuyn, "A Case of Cyst of the Kidney;" Dr. G. E. Clark, "Questions Concerning Nitro-glycerin."

Pennsylvania State Medical Society.—*Change of Place of Meeting.*—In view of the fact that the largest hotel in Gettysburg was burned recently, and will not be rebuilt in time for the meeting of this Society, it was deemed best after consultation with the Board of Trustees to change the place of meeting, and as the Philadelphia County Medical Society extended an invitation for the Society to meet in Philadelphia, it was deemed wise to accept the invitation.

The Forty-fourth Annual Session will be held in Philadelphia May 15, 16, 17 and 18, 1894.

H. G. MCCORMICK, President.

Wm. B. Atkinson, Secretary.

The Hare Medical Society.—The Hare Medical Society of the Jefferson Medical College gave its annual dinner February 27 at the Penn Club, Eighth and Locust Streets. President C. S. Magnum acted as toastmaster. L. S. Bent responded to the toast, "The Trustees;" Professor H. A. Hare, to "Policy of the Faculty;" Professor E. E. Montgomery, to "The Jefferson Hospital;" Professor W. M. L. Coplin, to "A Tribute to Hygeia;" M. G. Moore, to "Class of '94;" E. A. Moye, Jr., to "Class of '95;" Professor G. E. DeSchweinitz, to "Hospital Appointments;" Dr. Thomas G. Ashton, to "Experiences of a Young Practitioner;" and Dr. J. Chalmers Da Costa, to "Men Who Have Made Jefferson Famous." The Entertainment Committee consisted of John W. F. Moore, B. J. Powell and W. W. Hoffman.

Florida Medical Association.—The twenty-first annual meeting of the Florida Medical Association will be held in Tampa, Florida, Tuesday, March 20, 1894. Officers: President, Frank H. Caldwell, M.D., Sanford; First Vice-President, A. J. Wakefield, M.D., Jacksonville; Second Vice-President, R. P. Izlar, M.D., Ocala; Secretary and Treasurer, J. D. Fernandez, M.D., Jacksonville; Librarian, J. H. Douglas, M.D., Jacksonville. Leslie W. Weedon, M.D., Tampa, Chairman Committee of Arrangements.

The meeting will be called to order Tuesday, March 20, by Dr. Leslie W. Weedon, Chairman Committee of Arrangements, who has charge of the opening exercises. The President's address will then be delivered.

The reading of papers and discussion of same will be commenced and continued, at the will of the Association, throughout the session.

BOOK NOTICES.

Proceedings of the Philadelphia County Medical Society. Vol. XIV, Session of 1893. LEWIS H. ADLER, JR., M.D., Editor. 8vo, cl., gilt top. Philadelphia. 1893.

This handsome volume of 484 pages contains the papers read before the Philadelphia County Medical Society, and the discussions thereon. These papers have been published elsewhere from time to time; several of them in this JOURNAL, but it is well to thus place them in enduring form for convenient reference and preservation.

Tenth Biennial Report of the State Board of Health of Maryland for the Two Years Ended Dec. 31, 1893. Annapolis: King Bros. 1894.

This report includes an account of the investigations and acts of the Board during the period mentioned.

Dr. C. W. Chancellor, for many years the efficient Secretary, was appointed U. S. Consul at Havre, France, and was succeeded by Dr. James A. Steuart, who was for several years Health Commissioner of Baltimore and therefore entirely familiar with the sanitary work of the Board.

The Year-Book of Treatment for 1894. A Critical Review for Practitioners of Medicine and Surgery, by twenty-four Contributors. Pp. 492. Philadelphia: Lea Brothers & Co. 1894.

This is a critical summary in convenient form of the literature of the year on the various branches of medical science, by well-known English authors. The power of condensation is very judiciously exercised by the editor, and the arrangement and selections in the present volume are in every way equal to the nine excellent year-books that have preceded it. It is very likely to be looked into for handy reference, when the ponderous and elaborate encyclopedic year-books are left upon the shelf.

A Practical Treatise on Medical Diagnosis, for Students and Physicians. By JOHN H. MUSSER, M.D., Assistant Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia; President of the Pathological Society of Philadelphia, etc. Octavo, 873 pages, 162 engravings and two colored plates. Cloth, $5.00; leather, $6.00. Philadelphia: Lea Brothers & Co. 1894.

There are many works on the subject of medical diagnosis, and this of Dr. Musser's will take an honorable place among them.

An examination of the book shows that the author's omissions have been very few. It is divided into two parts, of which the first includes all topics relating to general diagnosis, and the second those of special diagnosis. There are six chapters in the first part; of which the first is devoted to the introduction; the second to the data obtained by inquiry; the third to the data obtained by observation; Chapter 4 to Bacteriological Diagnosis; the Examination of Exudations, Transudations, and Cystic Fluids; Chapter 6 to the Morbid Processes and their Symptomatology. In Part 2. the diagnosis of diseases of particular organs is set forth, and one chapter is devoted to the consideration of constitutional diseases. There are eleven chapters in this part.

The book is well printed, the paper is good, and the illustrations are excellent.

Transactions of the Royal Academy of Medicine in Ireland. Vol. XI. Edited by WILLIAM THOMSON, M.A., F.R.C.S., General Secretary, Surgeon to the Richmond Hospital, Dublin. Dublin: Fannin & Co. 1893.

This is a volume of 518 pages, well printed and well illustrated. It contains the List of Officers, List of Honorary Fellows, Rules of the Academy and the "Transactions" proper.

The work of the Academy is divided into six sections, viz: Section of Medicine; Section of Surgery; Section of Obstetrics; Section of Pathology; Section of State Medicine; and Section of Anatomy and Physiology. There are papers by various Fellows, all of which are interesting, and many of permanent value. The volume opens with an admirable paper by Dr. Joseph O'Carroll on "Saturnine Encephalopathy." Dr. Wallace Beatty reports "A Case of Myxedema Successfully Treated by Injections of Extract of Sheep's Thyroid." Dr. Charles Bell has an exhaustive illustrated paper on "Cancer of the Rectum." Dr. W. J. Smyly, the Master of the Rotunda Hospital, makes report of "112 Cases of Abdominal Section." Dr. T. More Madden furnishes a paper on "Removal of Gravid Uterus," and Dr. A. Birmingham reports a case of absence of the ileo-cecal valve.

Tumors, Innocent and Malignant; Their Clinical Features and Appropriate Treatment. By J. BLAND SUTTON, Assistant Surgeon to the Middlesex Hospital, London. With 250 engravings and nine plates. 8vo, cl., pp. 511. Philadelphia: Lea Brothers & Co. 1893.

This book is handsomely printed and profusely illustrated. The illustrations are new for the most part. The text is peculiar in many respects; in the author's desire to be original he makes some curious statements, and throughout the book the histology plays but a secondary part. His classification also is *sui generis*, and it is obvious that a classification which leads the author to place the psammomata under the head of papillomata, is not in accordance with the generally accepted histologic facts. In the four pages devoted to the psammomata—if we except the opening statement that "these are tumors composed of globular bodies arranged in layers, usually calcified and imbedded in the connective tissue," . . . there is nothing to indicate their morphology, and their analogy if not identity with the sarcomata is not even hinted at.

Woodhead, whose authority is unimpeachable, says, 3d edition, p. 585:

"It (the psammoma) consists of a branching mass of spindle cells in which are numerous blood vessels, at the sides of which are a number of bud-like or club-shaped processes. The vessels themselves, seen in section, are surrounded by layers of spindle cells or flattened cells, which are prolonged on to the outer surface of the bud."

Cornil and Ranvier directly place the psammomata among the sarcomata by making them the sixth variety, under the name of *sarcoma angiolithique*. Rindfleisch places the psammoma in a new class which he termed endotheliomata. Quénu accepts Rindfleisch's classification as a subvariety of the vasculo-connective tissue type. We have made these comparisons for the purpose of showing how far our author is away from the standard teaching. Clinically the work is strong.

The chapters on the dermoid cysts are the most satisfactory of any in the book, but in general it may be said that so far as histology is concerned, it is lamentably deficient.

Medical Jurisprudence, Forensic Medicine and Toxicology. By R. A. WITTHAUS, A.M., M.D. Professor of Chemistry, Physics and Hygiene in the University of the City of New York, and TRACY C. BECKER, A.B., LLB. Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo, with many collaborators. Vol I. pp. 845. New York: William Wood & Co. 1894.

This book when finished is intended to be a complete textbook on the subject. Volume I contains the "Introduction;" The "Legal Relations of Physicians and Surgeons," by T. C. Becker; "The Law of Evidence Concerning Confidential Communications," by Chas. A. Boston; "Synopsis of the Laws Governing the Practice of Medicine," by W. A. Poste and Chas. A. Boston; "The Legal Status of the Dead Body," by T. C. Becker; "The Powers and Duties of Coroners," by A. Becker; "Medico-Legal Autopsies," by H. P. Loomis; "Personal Identity," by I. C. Rosse; "Determination of the Time of Death," by H. P. Loomis; "Medico-Legal Consideration of Wounds," by G. Woolsey; "Medico-Legal Consideration of Gunshot Wounds," by Roswell Park; "Death by Heat and Cold," by E. V. Stoddard; "Medico-Legal Relations of Electricity," by W. N. Bullard; "Medico-Legal Consideration of Death by Mechanical Suffocation," by D. S. Lamb; "Death from Submersion or Drowning," by I. C. Rosse; "Death from Starvation," by E. V. Stoddard. The subjects connected with neurology, obstetrics, and the application of the microscope to forensic medicine are left to be included in the two remaining volumes.

The Introduction contains a historical account of the literature of the subject from the earliest times down to the present day, and the copious footnotes attest the painstaking labor which the editor-in-chief has given to the subject.

The article on the Legal Relations of Physicians and Surgeons by Mr. Becker, includes a discussion of their acquirement of the right to practice medicine and surgery; their legal duties and obligations; their right to compensation; their privileges and duties when summoned as witnesses and their liability for malpractice. These questions are treated with reference to the decisions of the courts and it would seem as if most questions of medico-legal character had now been so clearly commentated upon by the courts, as to leave little actual doubt as to what the law is. In regard to the question of experts, Mr. Becker states:

"In some foreign countries, notably in Germany and in France, experts in medico-legal matters have an assured official position, and are generally not allowed to be selected at haphazard according to the will or length of purse of those who need their services. The consequence of this method of obtaining expert evidence is, that expert witnesses in those countries command a high measure of respect and honor. Unfortunately, however, in this country, where the opposite practice prevails, the weaknesses of human nature are such that the common people, newspapers, lawyers, and even the courts in some recorded opinions and decisions, have come to express a great want of confidence in the weight and value of expert testimony. This deplorable result of a bad system of procedure is universally recognized, yet our legislatures have as yet refrained from attempting to correct it."

The book will be found extremely valuable, not only as a reference book, but as an instructive and readable one.

A Text-Book of the Theory and Practice of Medicine by American Teachers. Edited by WILLIAM PEPPER, M.D., LL.D. In two Volumes. Vol. II. Pp. 1046. Philadelphia: W. B. Saunders. 1894.

The syndicate system of writing text-books has its commercial advantages, but individual writers however meritorious have no opportunity of placing their works before students, who are compelled to buy the syndicate books. From a publisher's standpoint it is only necessary to secure one professor to write an article from each of the principal medical colleges and the sale of the book is certain, and all possible rivalry reduced to a minimum.

In the book before us many of the objectionable features of syndicate book writing have been eliminated, as the author's name is attached to each article. We thus know what credit should be attached to each, and where to fix the responsibility.

One would be captious indeed could he find fault with those selected to write the articles in this volume, for their names are familiar to the entire profession, as those having a right to speak with authority, and they are not so numerous as in some other syndicate books. It is the system, and not the individuals that we criticise. Professor Henry M. Lyman contributes twelve chapters; Professor Pepper, thirteen; Professor James C. Wilson, four; Professor Fitz, three; Professors Osler and Delafield each two; and Professors Welch and Holland each one.

The volume opens with a chapter on the biology of bacteria, infection and immunity by Wm. H. Welch. His chapter is extremely interesting, gives the morphology and classification, the food, vital manifestations, distribution, agencies injurious to bacteria, modifications of characters, marks of differentiation, and general considerations concerning infection, general etiology, toxic products of bacteria, immunity, prophylactic and curative inoculations. In regard to serum-therapy Professor Welch says:

"It is evident that the difficulties to be overcome in the successful application of serum-therapy to large animals and to man are great. It is important not to generalize, but to work out for each disease separately a sound experimental basis for this mode of treatment, as has already been done with considerable success for tetanus. This statement is sufficiently evident when we consider the varying conditions which underlie immunity from different diseases, the varying degrees of immunity attainable, and our imperfect knowledge as to both of these points as regards many diseases."

The chapter on "Obesity" by Professor Lyman is one of the most original and practical of the many excellent papers in the volume.

The well considered chapter by Professor Osler "On Diseases of the Blood," is beyond praise, and we may conclude this notice by saying that the book, as a whole, is not only a highly creditable production, but reflects honor on American medicine.

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ORIGINAL ARTICLES.

MODERN HOMEOPATHY AND MEDICAL SCIENCE.

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Recent addresses by Mr. Ernest Hart of London, and Professors Roberts and Cohen of Philadelphia, together with the agitation relative to the revision of the Code of the American Medical Association, have caused considerable criticism in this country, pro and con, relative to homeopathy. It is not a question of taste or of fancy for the laity; nor is it simply an indication of bigotry, if a physician declines to consult with a homeopath. If homeopathy is right, a very large majority of physicians are mistaken. As a class they can have no possible object for opposing homeopathy except a firm belief that it is radically wrong. If homeopathy is wrong, thousands of our citizens are deluded and defrauded by this form of quackery. It is, therefore, a proper subject for careful consideration in secular as well as professional journals.

When the writer decided to study medicine, the homeopathists were at the height of their glory. Their practice had been constantly gaining in popularity. In number of practitioners, compared with the profession at large, they had not yet begun to decline. The writer was surrounded by a homeopathic community. His most intimate professional friend was a homeopathic physician. The writer had read such tracts as "Facts, Solid Facts," which had been widely distributed by homeopathic firms, and which made the claims of the sect appear plausible. He knew several personally, who, after graduating from such reputable regular schools as the Medical Department of the University of the City of New York, and after practicing medicine for a time, had studied homeopathy, and then pinned their faith to the dogma, *similia similibus curantur*. He did not then know any one who had taken up scientific medicine after having practiced homeopathy. Neither did he realize that very many of those attempting to practice scientific medicine achieve unsatisfactory results, because they practice *empirically*, blindly trying to follow those better qualified than themselves, and failing to grasp the principles involved.

In the place of cool argument, too often the defenders of rational medicine descended to ridicule in speaking of homeopathy. Although refined homeopathy[1] may well be called "the little end of nothing, whittled out sharp, and cut off," or "the shadow of the chicken in the pot," ridicule alone seldom convinces. Ribald jests arouse sympathy for the oppressed. On the other hand, a logical discussion, based upon admitted premises, proving rather than asserting the ridiculousness of the claims, is both convincing and proper.

Considering his surroundings, therefore, it is not strange that the writer decided to become a homeopathic physician. During his course in the literary college he did some reading, and even as an amateur practiced a little very satisfactorily with the pellets provided by his homeopathic friend. This friend, a man of education, and a successful practitioner, did not indorse the refined homeopathy of the high potentists. He did not confine himself to drugs, nor to homeopathic preparations. He one day said to the writer: "I hope that you will become a homeopathic physician, but do not decide yet. You know something of the homeopathic practice. Take at least one year in ——— College," (naming a prominent regular school); "keep your eyes open, and compare the two schools carefully. Do not decide until the end of the year. I have no fear of the result." About the same time another friend and thorough scientist, advised: "Don't fool away your time studying homeopathic nonsense." The very natural result of these two pieces of advice was to strengthen the faith in homeopathy.

Sir Walter Scott once said that he could always learn something, even from the most ignorant people; and the old English poet puts these words into the mouth of the shepherd as he talks with the Abbot of Canterbury:

"Did you never heare yet,
That a fool he may learne a wise man witt?"

The most learned and gifted may often profitably study the ideas of those less distinguished. The intolerant man is essentially a small man, whether he be found in law, theology, medicine, or in business. We would not agree with those who would ignore the homeopathists because of their inconsistencies or on account of their ridiculous pretensions. We would rather carefully examine both their doctrine and their practice, for truths which had hitherto been too much neglected. Truth is everywhere, and the successful physician must be ready to receive it wherever found. Though fully convinced that homeopathy is a delusion, and that there is no legitimate excuse for the existence of the sect, we believe that much good would result if the history of medicine, including that of the prominent sects, should be more thoroughly studied.

The object desired—the obliteration of the homeopathic sect—is not secured by ignoring its members, as some of the more narrow-minded doctors have done in the past. A very successful homeopath once said to the writer: "If I were to begin now the study of medicine, I should not go to a homeopathic school. It was the intolerance of the general profession that led me to study homeopathy." If, as regular practitioners claim, homeopathy is a delusion, rational medicine will lose nothing by association with homeo-

[1] The expression, "refined homeopathy," as used in this article is not intended as ironical, but as descriptive of the purest form of the doctrine, and represented by the high potentists.

paths, while the latter class may thereby be the better able to see the truth as it is.

The writer entered a regular college, located so close to a homeopathic institution, that the students frequently visited from one to the other. The contrast was very marked. In one the tissues of the body were studied most minutely. In the other, they were described in general terms. In one the students were asked as to the exact effect of atropin upon the different parts of the eye, or the action of strychnia upon the spinal cord and nerves; or what drugs were indicated in a case of rapid heart beat, without structural change in that organ. The homeopathic professor inquired what remedy was indicated if the patient dreamed of money, and what drug had given rise to the proving, "He sees a black gauze before the right eye."

The writer, during his first year in the medical school, became thoroughly disgusted with homeopathic superficiality, and ever since he has carefully sought for the causes of the former growth of the sect. He is thoroughly convinced that no one thing has done so much for them as the intolerant contempt of many members of the regular profession, making them pose before the lay public as martyrs from professional jealousy.

The writer has sought, therefore, to present to his readers simply a plain argument, showing that the homeopathic practice is not scientific, but empirical; that their practice is inconsistent with their doctrine; and that there is no longer any excuse for the preservation of the homeopathic sect. Only a few of the many quotations which might be given to illustrate each point have been presented, taken always from standard works or from recognized authorities. For the convenience of the student reference is made, in most cases, to the source from which the quotation is taken. To guard against a possible misrepresentation of homeopathic teaching, the article has been presented to educated homeopathic physicians for criticism and correction, though it would be too much to expect that they would agree with the writer in all of his deductions.

In order to make some comparison of modern homeopathic practice with general results, letters were sent to several hospitals, asking for the mortality in certain common diseases, during the last five years. For various reasons no figures were received, either from regular or sectarian institutions. From a prominent homeopathic hospital the following reply was received. Considering the doctrine of the potentist portion of the sect, the reply is noticeable. It said: "Our surgical service has been so much larger than the medical, that the statistics of the latter would give very little of value for comparison."

It is proper to state that, though the *sect* is not recognized by the regular profession, graduates from homeopathic colleges are recognized, just in proportion as they abandon homeopathy and call themselves simply physicians. As such they may join many of the regular societies.

Not from any feeling of personal animosity; not to add fuel to the fire of factional strife; nor in any way to attempt to restrict that freedom of action which should be exercised by every physician; but in the hope that in some degree they may help to hasten the time when there shall be *one* medical profession, whose members shall each feel free to use his own individual judgment, unhampered by dogmatic barriers, and all shall meet on one common ground for the advancement of science, and the benefit of humanity, the following pages have been written.

Medicine is a science and an art. Originally the art element was the more prominent. Isolated facts were observed by the practitioner, who also collected information from others. These observations were used in the treatment of future cases. Reason entered but slightly into the practice. Success depended largely upon natural talent and memory.

Though neither the most successful, nor the most to be commended this method, called empirical, because based solely on practical experience, is still more or less common. If the empiricist is especially clear-headed, he may be able to select his remedy with considerable skill, but he has no definite idea of what he wants to do or how his medicine works. He has in mind only the ultimate object. A person may go to New York from Philadelphia by way of Buffalo, but he may save both time and trouble by going more directly. In a like manner, a physician may cure his patient much more quickly and satisfactorily with one remedy than with another. The empiricist, having in mind only the ultimate object, without understanding the intermediate steps, is liable to take a very roundabout way. Empiricism, therefore, is nearly a pure art.

The *sciencc* of medicine began when the accumulation of observations made classification a practical necessity. The difference between the scientific and empirical practice of medicine may be illustrated by other natural sciences. In botany, for example, the empiricist, in trying to find the name of a new plant, must look through the descriptions of all species, until he finds one applicable. Such a botany as he would construct would be a ponderous volume, since to give a full description under every name would necessitate great repetition.

The scientific botanist would, at a glance, by generalization limit his investigation to a small family, and by the aid of further classification he would find the name of his specimen before the empiricist had fairly begun his search. The scientific botany by classification avoids unnecessary verbiage. With the same amount of information, therefore, it may be easily seen that the empiricist labors at a great disadvantage, compared with the scientist.

In every science, errors of observation have resulted in false classification, or in wrong deductions. Medicine is no exception, as the relics found in its nomenclature show. Arteries were called by that name signifying air-carriers, because in dissection they were found filled with air.

In the latter part of the eighteenth century a German physician, while laboriously translating an English work on materia medica, noticed an apparent similarity between the symptoms produced by Peruvian bark and those of malarial fever, for which the bark was considered a specific. He made a few experiments upon himself and friends, and in 1790 published to the world his dogma, *similia similibus curantur;* similars are cured by similars. Hahnemann was not the first to notice that patients are sometimes benefited by drugs having effects closely resembling the disease treated. Hippocrates, over four hundred years before the Christian era, prescribed for mania "a draught made from the root of a man-

drake, in a smaller dose than sufficient to produce mania." We find in literature many other suggestions pointing to similar observations. Paracelsus, over two hundred and fifty years before Hahnemann, wrote, "*similia similibus curantur*," and in his Fragmenta Medicina he further wrote, "*similia, similis cura, non contrarium.*" Hahnemann was the first, however, to attempt to formulate a system upon this as an universal law. He called his system, "homeopathy," from Greek words signifying a similar condition, and coined the name, "allopathy"—opposing condition—as descriptive of the common practice.

That Hahnemann greatly benefited humanity and medical science, no careful student may deny. He stimulated the study of the action of drugs, and showed that large doses are productive of more harm than good in many cases. His greatest service to the profession was the substitution of simple drugs in the place of the heterogeneous mixtures formerly used, thus rendering the remedies at the same time more certain in action and less unpleasant to take.

At the time that Hahnemann first published his dogma, the world was in a good condition to receive it. Medical practice was far from satisfactory. Purging, bleeding, blistering, and other weakening practices were carried to a great excess. "Shot-gun prescriptions," i.e., mixtures made of a large variety of drugs in the hope that something might "hit the case," were common. It is not at all improbable that the doctors then did far more harm than good.

A few years before, in Edinburgh, that independent and intelligent physician, Dr. John Brown, had called forcible attention to some of these facts. At home, owing to the general reverence for Cullen, Brown's work did not receive the attention which it deserved. On the continent, however, his book, written in pure Latin had aroused great and friendly interest. It caused men to think, and to look about for something better. His ideas of treatment were so thoroughly at variance with previous customs, that a majority could not at once adopt them. Hahnemann came forward and occupied a sort of middle ground. He abandoned the strong depleting treatment, but he theoretically recognized the necessity for something more than the stimulants suggested by Brown. He really demonstrated to the profession that no treatment at all is better for the patient than the unreasonable practice then in vogue, though it took half a century for the general profession to acknowledge this fact.

If the dogma, *similia similibus curantur* is granted, simple medication, that is, the use of one remedy at a time, is almost a necessary corollary. The distinguished doctor was also led to prescribe his drugs in minute doses. The small amount of medicine given afforded a greater opportunity for the *vis medicatrix naturæ*, and in many instances perhaps the remedies assisted in the cure. It may be well believed that the early homeopathic practitioners were usually successful, compared with their neighbors, not because of deeds of commission, but of deeds of omission.

Emboldened by his successes, Hahnemann made the most ridiculous declarations. He taught that a medicine increased in potency in proportion to the amount of its dilution, and that the potency was also increased by shaking and by triturating. In his "Lesser Writings" he says: "If we wish, for example, to attenuate a drop of the juice of sundew to the thirtieth degree, but shake each of the bottles with twenty or more succussions from a powerful arm, in the hand of which the bottle is held—in that case this medicine which I have discovered, the specific remedy for the frightful epidemic—whooping-cough of children—will have become so powerful in the fifteenth attenuation (spiritualized), that a drop of it given in a teaspoonful of water would endanger the life of such a child; whereas, if each dilution bottle were shaken but twice, (with two strokes of the arm) and prepared in this manner up to the thirtieth attenuation, a sugar globule, the size of a poppy-seed, moistened with the last attenuation, cures this terrible disease (whooping-cough) with this single dose, without endangering the health of the child in the slightest degree." Hahnemann devoted much time to making provings, as they are called, of various drugs. He would take a dose of the substance to be proved, and then carefully note down all that transpired, even to the kind of thoughts or dreams that happened to flit through his mind. Since he failed to distinguish between accidental concurrences, and the results of the drugs, a large proportion of his provings are absolutely worthless. This is illustrated by the experience of Professor C. Wesselhoeft of Boston. He made some provings of carbo vegetabilis upon members of the class in the Boston University Medical School. Unknown to the class he began by administering blank powders of sugar of milk. He received from his subjects a large number of reports of symptoms produced by these blank powders. It must be admitted that Hahnemann and his followers have been very diligent in their enthusiasm, some even proving such things as lice and insects, the water in which a virgin had taken a bath, as well as bottled sunshine.

Until the last decade the homeopathic sect gradually increased in numbers, especially in the United States. According to the Homeopathic Directory, there are now in Europe 1,022 homeopathic physicians practicing medicine. In Great Britain and Ireland in 1875, there were 269 homeopathic doctors, and in 1889 there were 256, a decrease of nineteen, though both the population and the number of physicians in the land increased. Professor H. C. Wood remarks: "It is very interesting to note that the largest proportion of homeopathic practitioners, according to the population, on the continent of Europe, is to be found in Spain—the one country where the general level of education is the lowest."[2]

In this country, too, the number of homeopaths is not increasing as fast as formerly. In fact, though there is an absolute increase in the number of members of that sect in the United States, yet compared with the total number of doctors of medicine, and also compared with the population, there is a relative *decrease* in the number of those calling themselves homeopathic practitioners. The Illinois State Board of Health has probably done more than any other one organization to raise the standard of medical education in this country. To aid in this work, it has kept close track of the number of matriculates in, and the number of graduates from, every medical college in the United States and Canada, since the session of the schools in 1877-78. By the aid of its reports on medical education, published in 1885 and 1891, the following table has been constructed, giving the proportion of homeopathic graduates, in the

[2] Hare's System of Practice, Vol. I, p. 18, Note.

United States and Canada, from 1877 to 1890, inclusive. Though there happens to be no homeopathic school in Canada, and though the two countries are under different governments, their interests are so much the same, and residents of one so frequently go to the other for their professional education, that it seems proper to treat them as one country. To satisfy the desire of some to see the figures for the United States alone, these are also given.

RELATIVE PROPORTION OF HOMEOPATHIC GRADUATES TO TOTAL NUMBER OF MEDICAL GRADUATES IN THE UNITED STATES AND CANADA, FROM 1877 TO 1890, INCLUSIVE.

Session year.	Number. Total	Homeopaths.		In U. S. only.	
		Number.	Per cent.	Total Number.	Per cent. H'mopa
1877–78	2,901	349	12.03	2,837	12.30
1878–79	2,882	316	10.99	2,775	11.30
1879–80	3,475	331	9.52	3,379	9.79
Total 3 years	9,258	996	10.75	8,991	11.77
Average annual	3,086	332		2,997	
1880–81	3,985	412	10.30	3,882	10.61
1881–82	4,571	395	8.64	4,466	8.84
1882–83	4,215	445	10.56	4,051	10.98
1883–84	4,091	412	10.07	3,938	10.46
1884–85	3,824	338	8.84	3,657	9.24
Total 5 years	20,686	2,002	9.68	19,994	10.01
Average annual	4,137.2	400.4		3,998.8	
1885–86	4,043	374	9.25	3,812	9.81
1886–87	3,835	352	9.18	3,620	9.72
1887–88	4,142	386	9.32	3,815	10.11
1888–89	4,543	375	8.25	4,263	8.79
1889–90	4,853	391	8.06	4,492	8.70
Total 5 years	21,416	1,878	8.77	20,002	9.38
Average annual	4,283.2	375.6		4,000.4	

These statistics, taken as they are from a most reliable source, show that the homeopaths are not holding the ground gained in the profession of this country.[3] Taking the census of the United States in 1880 and 1890, and that of Canada in 1881 and 1891, as a basis of computation, we find that for every average annual graduate in 1880, there was a population of 17,709.3; and in 1890 a population of 15,809.4. This shows that there is an increase in the total number of graduates, compared with the population. In 1880, for every average annual graduate in homeopathy, there was a population of 164,430.5. In 1890 the proportion of annual homeopathic graduates had decreased to one in 180,284.8 population. In the United States alone the figures are as follows: In 1880, one graduate in medicine in 16,772.1 population; in 1890, one graduate to 15,719.8 population; homeopathic graduates, in 1880, one to 151,403.9 population, and in 1890, one to 167,426.9 population.

The above figures are here given, because the homeopathic sect have repeatedly claimed that the facts are quite different, and their positive assertions, though unsupported by evidence, have sometimes seemed to have considerable influence in proselyting.

Out of 118 nominal homeopathic practitioners in Austria, only forty-four practice that system exclusively. In the United States prominent members of the homeopathic societies have recently affirmed that there are practically *no* homeopathic physicians in this country. Though a majority of them regard as visionary most of the teachings of Hahnemann, there are still a large number of physicians claiming to treat disease according to the dogma, *similia similibus curantur*.

The great number of believers in the teachings of Mohammed does not prove the truth of those teachings, but it does furnish a reason for examining the evidence of his claims. Thus the proportion of homeopathic physicians does not prove their right to exist as an independent sect, but it challenges investigation.

It must be remembered that there is a vast difference between rational medicine and homeopathy. The one is a science; the other a system. As the pine, beginning in the little germ, gradually increases in size until it becomes the tall and stately tree, so the science of medicine is not the product of any one man or age. Hahnemann, alone, presented to the world homeopathy, as an artist produces a statue. Others may have polished off some of the minor imperfections, but the system is essentially the same that it was when it was first originated. The sculptor, failing to grasp the artist's idea, sometimes in trying to perfect the statue removes too much, and materially modifies the ideal of the master. In art, to comprehend the master's thought, we study his models and pencil sketches, as well as the finished work. In order to fully understand modern homeopathy, we may best begin by studying the system as first proposed by its author, although fully recognizing that the homeopathy of to-day is not the same that it was sixty years ago, in many of the less important details.

The Organon[4] is considered Hahnemann's greatest work. It is practically the only book, written by him, which is now read by the general practitioner. In this treatise, he devotes much space to decrying medicine as he supposed it to be generally practiced. He said: "They fancied they could find the cause of disease, but they did not find it, because it is unrecognizable, and not to be found;"[5] and yet the causes of many of the zymotic diseases have since been seen and handled. He ridiculed the study of pathologic anatomy—the examination of dead bodies, saying: "That is, they will not cease for the sake of those foolish and groundless hypotheses, to be *immaterial* modifications of our sensorial condition."[6] This statement agrees closely with the teaching of so-called Christian science of to-day. On the other hand, very much of our present knowledge of the diseases of the brain, for example, are the direct result of the examination of dead persons; and the information thus gained, which could only have been gained in this manner, has enabled the surgeon to unerringly open an apparently healthy skull, and remove a small tumor, or empty an abscess, thus saving the life of the patient, or relieving him of terrible tortures. For acute dyspepsia, with cold extremities, dull head, and eructations of tainted food, Hahnemann advised that the patient *smell once* of a granule of sugar, not larger than a grain of mustard seed, moistened with the *highly diluted* juice of pulsatilla.[7] He did not even sanction the administration of vermifuge remedies for intestinal worms. He declared that so long as the patient was healthy, the worms would cause no trouble;[8] and distinctly advised that only the

[3] During the period, 1877 to 1890, inclusive, there graduated in America, 51,360 physicians. Of these, 4,876 were homeopaths; 2,886 were eclectics; 272 were physio-medicals; 55 belonged to other irregular sects; and 43,271 graduates from "regular" colleges.

[4] All quotations from Organon here given, are taken from the translations made by Wesselhoeft, from the fifth edition of the original.

[5] Organon, p. 18.

[6] Organon, p. 20.

[7] Organon, p. 48, Note 6.

[8] Organon, p. 52, Note 14.

general symptoms be treated. It is well known, however, that the most serious trouble, even death, has been produced by these intestinal parasites.

Although Hahnemann ridiculed pathologic study, and the searching for a cause, he most positively stated, as though by divine revelation, that all chronic diseases originate from syphilis, sycosis, or the itch. "Psora (the itch) is the only real fundamental cause and source of all the other forms of disease figuring as peculiar and definite diseases in books of pathology, under the names of nervous debility, hysteria, hypochondriasis, mania, melancholy, idiocy, madness, epilepsy, and convulsions of all kinds, softening of bones, cancer, gout, hemorrhoids, dropsy, asthma, deafness, sick headache, cataract and glaucoma, renal calculus, paralysis," etc.[9] He, therefore, frequently urges the importance of antipsoric treatment. It is now well known that the itch is the product of an insect, and that it has nothing to do with the diseases mentioned.

Since Hahnemann's pathology is dogmatic, and not at all scientific, any treatment founded on his pathology must, therefore, be empirical, not rational. His general statement, *similia similibus curantur*, is also pure empiricism. In fact, this is admitted by Dr. C. Wesselhoeft in the introduction to his edition of the Organon, where he says: "We accept it as an empirical fact, not as a theory, or hypothesis, as our opponents quite erroneously term it. The explanations of its workings are as numerous and varied, as they are unsat sfactory, from Hahnemann to the latest expounder."[10] In support of this "empirical fact," we find the oft repeated statement: "In all ages those sufferers who were really cured rapidly, permanently and visibly through medicine, were cured alone by a remedy possessing the power of producing by itself a similar morbid condition."[11] Hughes says: "All treatment by single medicines used for their direct effects upon the disease is truly of this kind, though it knows or acknowledges it not."[12] These statements, though often repeated, are both contrary to reason and contrary to fact. In refutation of their affirmations, we need only to point to the experience and observation of scientific physicians generally. They are not so false as to cling to what experience has taught them to be error, especially since it is not in the least to their advantage to continue in their false position. That the profession generally is not averse to accepting new ideas, and that it is ever ready to investigate every claim, is apparent to every thoughtful person. Witness the studies of Pasteur and Koch, of Vaughan and Sternberg, and the zeal with which Lister's surgical dressings were adopted. If Hughes said truly, what possible reason could be given to explain the attitude of the general profession towards homeopathy? Are men alive to facts generally, and yet unable to see a fact which should be constantly before them, if the homeopathic statements are true? Or in what possible way can it be for the advantage of physicians generally to conceal this fact, if it be a fact? Can ergot produce diabetes? In many cases the use of ergot alone cures the patient. Digitalin is curative in some forms of heart disease, in which the homeopathic law does not at all explain its usefulness. Such illustrations might be given by the page, but *one* is sufficient to prove the statement of Hughes false.

Hahnemann's method of preparing fresh plants is as follows: Express the juice and to it add an equal quantity of alcohol. This mixture is called the "mother tincture." Taking two drops of this tincture, add 98 drops of alcohol and shake twice, to make the first dilution. Put one drop of the first dilution into 99 drops of alcohol, and shake twice, to make the second dilution. Repeat this latter process, taking one drop of each dilution to form the next higher, until the thirtieth is reached.[13] By a similar process, triturations are made by the addition of sugar of milk in the place of alcohol, rubbing instead of shaking the mixture. Triturations are especially used in preparing materials which are insoluble in water or alcohol. Mercury, or quicksilver is of this nature. After making one or two triturations, sometimes the process is continued in dilutions. In such cases the solution contains none of the originally insoluble drug, unless a chemic change has taken place in the trituration. The writer has several times examined low dilutions of mercurius vivus, prepared by one of the most reliable homeopathic drug firms in the country, without finding the *slightest trace* of mercury. If the dilution should have been made from an old trituration, it is possible that with some substances a soluble oxid might have been formed by the decomposition of the sugar of milk. Even this action is impossible in preparations of metallic mercury.

A row of thirty phials containing these dilutions, or triturations, gives no idea of the credulity necessary for the use of the thirtieth dilution. Prepared according to Hahnemann's directions, two drops of the juice of a plant would be sufficient to make in the *sixteenth* dilution a quantity *larger than this earth*. In spite of this fact, *the most pronounced symptoms* have been asserted as the result of the use of the *thirtieth* dilution. Salt (sodium chlorid) is a common article of diet. Almost everything we eat contains salt. Remembering this, and the small amount of salt in the higher dilutions, consider the testimony of one of the recent writers, whose work is used as a text-book in the homeopathic schools. He says: "And let me say here, that salt will cure more cases of intermittent fever, both acute and chronic, than any other known remedy. *With the thirtieth dilution I have cured several hundred cases, with this drug alone.*"[14] (Italics ours.)

To the thoughtful person, such propositions appear so thoroughly absurd, as not to deserve even a passing notice. Burt practically says in the above quoted statement, that salt, taken in the food has very little or no effect; but when an infinitesimal quantity is given as medicine, it has a powerful medicinal effect. So, too, carbo vegetabilis—charcoal—which one constantly takes in food, without any apparent effect; yet one grain of which, according to Hahnemann's plan, if finely powdered, and cast into the head-waters of the Mississippi River, is more than enough to render powerfully medicinal the water of the Atlantic Ocean.

While the vast majority of those calling themselves homeopathists agree with Hughes, when he says: "To make the Hahnemann of 1830 to 1843 our guide, is,

[9] Organon, Sec. 80, p. 110.
[10] Organon, p. 11.
[11] Organon, p. 43.
[12] Manual of Pharmaco-Dynamics, London, 1880, p. 9. See also Wesselhoeft's address before the Boyleston Medical Society, p. 15.
[13] Organon, Sec. 270, p. 178.
[14] Burt's Physiological Materia Medica, p. 632.

I think, to commit ourselves to his senility," [15] yet we must not forget that there still exists a set in this sect, who not only indorse Hahnemann in the use of high potencies, but they go beyond him, using not only centesimals, but also millesimals. One of these high potentists recently told the writer that though in its crude state lycopodium is inert, yet in the *thousandth dilution* it is a powerful drug.

In this country the high potentists have organized themselves into societies. They have under their control hospitals, and recently in Chicago they have established a new college, the students of which are not only to use the high dilutions, but to depend upon the internal administration of drugs, to the exclusion of all local or mechanical treatment.

It may be proper to ask: Is alcohol relatively so weak in its physiologic effect, that a drop of aconite in a hogshead of alcohol will still give, when administered, the effect of the aconite alone? Has charcoal, (or carbo veg.,as they call it) which is an impure form of carbon, such a powerful medicinal effect upon the human system, as is asserted; and yet has sugar of milk, which contains carbon, so little influence that it can safely be entirely disregarded in prescribing triturations?

Treatment with these high dilutions may, perhaps, well be called materialistic faith cure. It differs from ordinary faith cure in using an external object as an aid to faith. It is well known among physicians that faith is a great aid in the treatment of disease. Almost every practitioner has seen cases in which faith has reduced inflammation, or the lack of it has materially increased the trouble. Acute diseases are generally, by nature, self-limited, and if the strength of the patient holds out the patient recovers, even if no medicine be given. The fact that many cases do recover without medicinal treatment is no indication that all cases would get well either more quickly or more perfectly without treatment.

Suppose one of these ultra, or refined, homeopathists should be called to a case of poisoning from the swallowing of strychnia,arsenic or belladonna berries! If he knew the cause of the sickness, he would probably first give an emetic, and then an antidote. Such treatment is not homeopathic. In the case of acute dyspepsia above cited from Hahnemann, there is a poison produced in the stomach. Why is an emetic allowable in one case, and not in the other?

Sometimes the bowel becomes so twisted as to cause intense pain, and often death within twenty-four hours. In such cases, opium or other narcotics may relieve the pain, but as a rule, medicines alone are powerless to cure. It not seldom happens that the fatal result comes before the character of the case is fully recognized. Such cases as these most need the doctor's energetic care,but the refined homeopathy can offer no relief. Under its useless watching much valuable time would be lost, and the death of the patient be thereby practically insured. Though these high potentists are probably far less dangerous than the polypharmacal leeches of a century ago, yet it is well for humanity that there are as few of them as there are.

Before discussing further the homeopathy of to-day, it may be well, by way of contrast, to state the general rules governing the scientific practice of medicine.

When called to a patient it is the first duty of the physician to determine wherein, and to what extent, his physical condition deviates from the normal standard.

2. He should, if possible, determine the cause of the disease and check its operation. A recent writer has well said: "He is the best practitioner who has the keenest scent for unfavorable surroundings and hurtful habits,—who is most thorough in his supervision of work and rest, of open air exercise, clothing, diet and sleep, of sloth and strain, and manner of living." [16]

3. He should use such means as are best calculated to restore the health of the patient. This includes the sustaining of strength, and the neutralizing of dangerous symptoms. In the selection of remedies he should be untrammelled by any dogma or prejudice. He should be free to use mineral as well as vegetable remedies, in large as well as small doses as he deems them indicated. Baths, electricity and massage are equally at his disposal with drugs. Not so the homeopath. Hahnemann condemned external treatment. Homeopathy, "the only law of cure," entirely disregards all other means of treatment besides internal medication according to the dogma of *similia*. A man who advertises himself as a homeopath is in duty bound to strictly adhere to homeopathic laws. He obtains his patrons as a homeopath, and whenever he deviates from pure homeopathic practice, unless he plainly calls the attention of his patrons to the fact, he is really sailing under false colors, and obtaining money under false pretenses.

The common defense made by members of the sect, for violating the so-called law is: "The allopaths use our remedies." Though Hahnemann to contradistinguish his followers called the regular practitioners, "allopaths," this title has never been accepted by any body of men for themselves. So far as it means anything, it gives a false impression. It is generally regarded as an insult by those to whom it is applied. The scientific physician of to-day relatively seldom uses what could be called properly an "allopathic remedy." He avoids all sectarian designations; he limits himself to no particular method. There is no school of astronomy, chemistry, engineering, or other science, and the scientific physician denies the real existence of a school of medicine.

The fact that a scientific physician uses homeopathic preparations, would be no excuse for a homeopathic practitioner's violation of the *similia* rule, even if the scientific physician had taken an oath not to practice homeopathy. Though both use the same remedy in the same kind of a case sometimes, the homeopath uses it empirically, while the scientist has a reason for his practice. For example: A person of nervous temperament may, as the result of some atmospheric change or other slight irritation be thrown into a high fever, with full bounding pulse, congested conjunctivæ, flushed face, headache and coated tongue. Both physicians may use aconite; but whereas the homeopath uses it without any reason, blindly following the imaginary rule of *similia*, selecting the aconite because it accidentally produces similar symptoms in a healthy person, the scientist selects aconite because of its sedative effect upon the nervous system, especially upon the sensory nerves, and because of its quieting influence upon the circulation of the blood. Large doses of ipecac produce vomiting; small doses are frequently given

[15] Opus cit. p. 91.

[16] Dickenson, in Hare's System of Practice, Vol. III, p. 730.

to allay vomiting. If the vomiting is the result of over-sensitive nerves, the ipecac will be of little benefit. When, however, there is a catarrhal condition of the stomach and bowels,small doses of ipecac, by stimulating the secretion from the mucous membrane, making it less viscid, and by increasing the secretion of bile, promote digestion, and thus relieve the nausea of indigestion.

Modern homeopathy has for its chief characteristics:

1. A belief in the dogma, *similia similibus curantur.*
2. Use of single remedies.
3. Use of the smallest quantity of drugs sufficient to produce the desired result.
4. To a greater or less extent, dependence upon internal medication to the exclusion of all local or non-medicinal constitutional treatment.

Except the first, none of these characteristics are peculiar to homeopathy. In the third and fourth, there is more difference between those claiming to be homeopathists, than there is between the ordinary homeopath and his scientific neighbor. Many use electricity freely, and most of them use local medication, baths and massage to a greater or less extent, although all are foreign to pure homeopathy. So, too, some claim that high potencies should be used, while their more rational brethren scoff at the idea, and prescribe as large doses as their "regular" neighbors.[17]

The use of single drugs necessitates greater care in their selection. This stimulates the practitioner to study more closely the indications for particular drugs. Among homeopathic doctors this study is purely empirical. The scientific man studies rather the exact action of the drug, not the gross symptoms. In proportion as drugs are mixed, there is a tendency toward carelessness in their selection. Often more is given than is needed, and from this cause or because of poor selection, other remedies must be added, to counteract the undesired results. The patient, therefore, has to contend with drug poisoning, as well as disease. With simple medication and minimum doses, clearly there is the greatest chance for the *vis medicatrix naturæ.* Medicines may help, but they can not alone cure the patient. It is the healing power of nature upon which we must ultimately depend. Although simple medication is, therefore, greatly to be desired, and it is in harmony with the most scientific treatment, yet it sometimes occnrs that mixtures increase the efficiency of the remedies, or render them more convenient to take. It must be noted that while theoretically teaching simple medication, a majority of homeopathic physicians practice polypharmacy, by alternating remedies.

Against mixed drugs, it has been claimed that the mixture changes the character of the medicines, so as to make the results uncertain. For example: If nearly equal parts of gum camphor and carbolic acid crystals are ground together, in the place of the solids we have a fluid. Although a 10 per cent. solution of carbolic acid generally has a decidedly escharotic effect, this mixture containing 50 per cent. of the acid has but slight escharotic effect. Such results are relatively rare. They must always be borne in mind by the prescriber, but the example given shows the advantage sometimes found in mixtures, for the carbolized camphor is a more active germicide than either drug would be alone, when used in safe quantities.

Diseases differ greatly in their nature and causes, and the kind of treatment must also vary. They may originate from general, or from local causes. Very many nervous disorders originate from local irritation. Reason dictates that in such cases the treatment should be local. In them, general treatment can be but palliative. Hahnemann, however, recommended that only constitutional treatment be used. In a case of partial paralysis of one leg, the writer recommended circnmcision, on the hypothesis that the irritation from phimosis produced the change in the spinal cord. At the same time, homeopathic practitioners of good reputation scoffed at the idea, and insisted upon constitutional treatment. Their advice was followed without benefit. Then circumcision was performed without constitutional treatment and the patient recovered and remained well. Convulsions or epilepsy from a similar cause may be held in check by drugs, so long as the drugs are taken. A slight operation would produce a permanent cure, but unfortunately the doctor's receipts would be diminished. Such examples are so very common as to clearly demonstrate to any impartial person the utter fallacy of Hahnemann's objection to local or non-medical treatment.

Acceptance of the dogma, *similia similibus curantur*, is the *real* characteristic of the homeopathic sect. This phrase, similars are cured by similars, is a positive statement. It either tells the truth or a falsehood. There are three possible legitimate excuses for a dogmatic statement. The fact may be axiomatic, one which is self-evident to all. *Similia similibus curantur* is not axiomatic. Truths are sometimes revealed by God to man. Possibly Hahnemann was inspired, but if so, we should hardly have expected to find so much nonsense in his books as it is generally admitted that they contain. Lastly, a statement may be made which is capable of proof. Can the statement, *similia similibus curantur* be proven?

It has been claimed that as an empirical fact, it has been shown that homeopathic physicians are more successful than others in the treatment of disease. In proof of this assertion, statistics are produced. These statistics are so thoroughly admixed with error, however, that they are of little or no value.

1. There is a vast difference between treatment by a nominally homeopathic doctor, and homeopathic treatment. It has not been shown that the cases claimed have really been treated homeopathically. Burt[18] recommends common salt for intermittent fever. Salt does not produce symptoms like those of intermittent fever. It does not produce the regular periodic chill, recurring at a certain time every day, or every second or third day. By mental suggestion in a susceptible person almost any symptom may be produced; but if the person experimented upon does not know what symptoms are desired, the recurring chill and fever will not appear.

2. It is well known that a century ago, often more harm than good resulted from the administration of drugs. Some years since, out of eighty cases of cholera upon a certain ship, forty-three were treated with drugs, with a mortality of seventeen, or 40 per

[17] It must he remembered that in many cases, being made from fresh, or green drugs, the homeopathic tincture is much stronger than the officinal tincture of the same drug. Also, since fine division favors absorption, triturations are sometimes more efficient than the crude drug.

[18] Loco cit.

cent., while from thirty-seven receiving no medicine only one died. So compared with the old practice, it may well be believed that homeopathy as practiced would be very successful, not because of positive value, but because it did no harm. The medicines used had little or no effect.

3. In the statistics given, hygienic conditions have been ignored.

4. Exact diagnosis has not been assured. As a matter of fact, physicians who depend only on general symptoms, ignoring the aid of the microscope, and other instruments of precision, are quite likely to make errors of diagnosis. In one instance, three scientific physicians had an epidemic of about 160 cases of rötheln, a mild disease which resembles scarlet fever, though distinct from it, and one which is seldom or never fatal. They saw no cases of scarlatina. At the same time, two other doctors in the same locality reported about 140 cases of scarlatina, none of whom proved fatal. Clearly, statistics based upon that series of 140 cases of scarlatina would be of doubtful value.

5. In statistics given, homeopathic practice of to-day is contrasted with the common results of fifty years ago.

How can medicine cure when used according to this dogma? Jousset, in *L'Art Medical*, affirms that:

"1. Every medicine produces on the healthy body two successive actions, primary and secondary. These two actions are always opposite one to another.

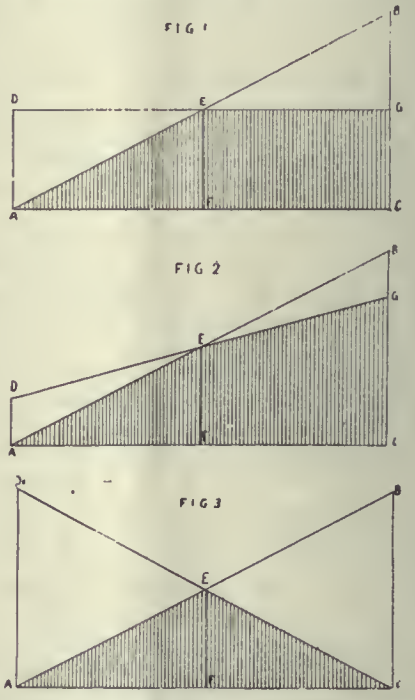
"2. The stronger the dose of the medicine, the less marked is the primary action. If the dose is excessive, the secondary action only is developed.

"3. The weaker the dose, the more manifest the primary action."[19]

Another way of putting almost the same idea, is that every drug has a certain effect upon the system. There is in life a tendency to react against external agents and thus retain health. We have, therefore, the action of the drug, and the reaction of the system, which are opposite the one to the other. With small doses the reaction is the more apparent, and with large doses the action is the more noticeable. Since homeopathic writers differ greatly in the use of the terms, primary and secondary, we shall speak only of the action and reaction.

If it is granted that we get opposite results from the administration of large and small doses, it must be admitted that a drug which in a large dose produces the most similar symptoms to the disease treated, would in small doses be the most exact neutralizer of the disease. The curative action in this case would be antipathic, as Dr. Dyse Brown of England has affirmed, not homeopathic. Dr. E. M. Hale, however, in his "New Remedies," says: "If the primary symptoms of a disease are present, and we are combating them with a remedy whose primary symptoms correspond, we make the dose the smallest compatible with reason," etc. He, therefore, would indorse strict homeopathic treatment. The wide and radical difference found among homeopaths in the interpretation of the dogma of *similia* can but weaken the confidence of the student in its value.

If it is true that every drug produces opposite results in large and small doses, it must follow that there is an intermediate point, at which its effect would be nothing. No such neutral point has ever been demonstrated. Granting that these opposite results arise from the action of the drug, and the reaction of the system, the relative results may be illustrated graphically. (The same is true using the idea of primary and secondary action.) The real *action* increases with the size of the dose. It may be represented by the triangle ABC, in Figs. 1, 2 and 3. If the *real reaction* is always the same in quantity, it may be represented by the parallelogram ADGC in Fig. 1. If the *real reaction* increases with the size of the dose, the quadrilateral ADGC, in Fig. 2, illustrates that; or if the *real reaction* decreases with the increase of dose, that is shown by the triangle ADC, in Fig. 3. In all the figures, the distance from A on the line AC shows the size of the dose. It will be noticed that at F there is no *apparent action* or *reaction*, for the one neutralizes the other. In all the figures, the triangle AED represents the apparent reaction; and BEG, (or BEC in Fig. 3,) shows the *apparent action;* and the shaded portion, AEGC in Figs. 1 and 2, and AEC in Fig. 3, shows the portion



of the action which is neutralized by the reaction, and hence is non-apparent. From these illustrations it is evident, that if from the neutral point the dose be increased, the *apparent action* will also be increased; and from the same point the more the size of the dose is decreased, the greater will be the *apparent reaction*. In other words, if the dose is decreased to an infinitesimal, the *apparent reaction* will be the greatest. If this be so, Hahnemann and the high potentists are correct. An infinitesimal is practically equal to zero. According to this reasoning, therefore, if *no* medicine be given, the *apparent* reaction will be the greatest. This is absurd.

One thing is similar to another, just in proportion as it resembles the other. The most exact similar is, of course, identical. It is well known that at least a large proportion of diseases are the result of some form of poisoning. Strict homeopathy would demand that in such diseases the same poison be used in the treatment of the case, as that from which the patient might be suffering. This is so manifestly absurd that very few would think of indorsing it, though an

[19] Hughes' Manual, p. 67.

attempt has been made to establish such a system of treatment. That the homeopaths do not generally indorse this method, may be seen from incidental remarks in their books. Hughes[20] mentions a case in which the doctor was about to prescribe *apis mel*, the poison of the honey bee, but changed his mind because he found that the patient had been stung by a hornet. He, therefore, gave a vegetable remedy.

In the foregoing, it has been taken for granted that opposite results are obtained from the administration of large and small doses. Is it true that we do obtain such results? Our geometrical demonstrations show that we can not. Jousset and others claim that we both can and do obtain such opposite results; but after a careful study of the subject, the writer must say that though there are numerous instances of such *apparent* opposite results, he does *not know of a single instance of such real opposite action of large and small doses.* To illustrate:

A small dose of alcohol apparently strengthens the muscles, and stimulates the brain. A large dose paralyzes and stupefies. A closer study shows, however, that after taking a small dose of whisky, the person lifts more, or uses his mind with less fatigue, not because of additional strength, but because the sensory nerves are so benumbed that he does not realize when he approaches the limit of his strength. A larger dose carries the benumbing effect over to the motor system and the intellect.

Again: Convulsions are produced by strychnia, but a larger dose causes paralysis. It is, however, clearly proven that the convulsions are produced by stimulating the spinal cord, making it more sensitive to external impressions. The paralysis is produced by the *direct effect* of the drug upon the *motor nerve*, and sometimes when convulsions have occurred, by exhaustion of the motor nerve. The action is always the same on each part of the body, whether the dose be large or small, but the apparent results may vary with the degree of involvement of different organs of the body.

Another class of drugs presenting apparently opposite results sometimes, is illustrated by digitalis. In the smaller doses it generally strengthens the action of the heart, but in larger quantities it may paralyze that organ. It is found, however, that digitalis contains among its active principles three whose action is always to strengthen the heart, either directly or indirectly. It also contains another principle called digitoxin, which weakens the heart muscle directly, and in large quantities it paralyzes that muscle. In the smaller doses the poisonous effect of the digitoxin is practically insoluble in alcohol. Consequently, we seldom or never get the heart paralysis from the tincture of digitalis; but when sufficient of the powdered drug, or especially, of the infusion is given, the direct weakening effect of the digitoxin more than counterbalances the good results of the tonic principles. In other words, the contrary actions are not found here in a simple drug, but in a mixture of dissimilar agents.

It is one of the principles of homeopathy to use only simple drugs, and yet they freely use such drugs as nux vomica, veratrum and digitalis, which are not simple, but each of which contain two or more dissimilar active principles. In the use of these, therefore, they are not consistent.

[20] Opus cit., under head of *Apis mel.*

It is somewhat remarkable, considering the fact that the sect has centered its attention upon the action of drugs, that their text-books are silent upon the *exact* action of such drugs as digitalis, nux vomica, ergot and belladonna upon the nervous system and the circulatory organs, except as they may quote from some standard work like that of H. C. Wood or Bartholow. They usually ignore the existence of active principles, and discuss only the crude drug. They are largely filled with general statements and subjective symptoms. Hahnemann's Materia Medica Pura gives 638 symptoms for arnica, and later writers have nearly if not quite doubled that number. The symptoms given include even the character of thought, and other purely accidental observations. Illustrative of this fact are the following quotations, taken from Burt's Materia Medica, a standard homeopathic text-book. They are not rare examples, but they may be easily duplicated from almost any homeopathic work on the subject. As provings of common table *salt*, he gives: "Extreme despondency; melancholy; depressed and weeping; consolation aggravates; prefers to be alone; dreams of robbers, so vivid that house must be searched." Under pulsatilla we find: "Timid and fearful, mild, gentle, yielding; weeps easily; she weeps at every nursing; does not want to go to bed." Under rhus: "Satiety of life, with fear of death; wants to go from bed to bed." It may be positively stated that not one of the above symptoms was the result of taking the drug mentioned, but all were merely accidental concurrences.

Such provings as those just given are regarded by most homeopathic practitioners as mere curiosities of homeopathic history. They strongly object to having such records taken as indicative of their common sense or professional knowledge. On the other hand, the high potentists still accept these provings.

A careful study of the homeopathic works on materia medica shows that in place of telling the action of a drug they devote the space to a discussion of the indications for its use: "Or symptoms *ex usu in morbis* have been introduced, and the names of diseases supposed to have been cured by the drug are incorporated with the pure symptoms."[21] Homeopathy, therefore, is pure empiricism. Its followers take the dogma, *similia similibus curantur*, as "an empirical fact," and they follow their leaders in the empirical use of drugs, making little attempt to explain their action. They make themselves as nearly like machines as possible, mechanically comparing the symptoms with their lists of provings.

Wesselhoeft says of homeopathy: "It means in regard to disease, we should make clinical use of only such facts, characteristics or symptoms, as we can with our aided or unaided senses grasp or accept as facts, without doubt or cavil."[22] What sense, aided or unaided, can without doubt grasp the dogma, *similia similibus curantur?*

The nearest approach to homeopathy, in the medical science of to day, is found in inoculation, as with the vaccine virus. This is not to cure disease, but to prevent it, or more correctly to make it less severe. In the place of poisons, disease germs having life are implanted in the system. It is known with regard

[21] Carroll Dunham, in Homeopathy, the Science of Therapeutics, p. 42.

[22] Boyleston Address, p. 10.

to tetanus (lockjaw), diphtheria, and some other diseases, that when these organisms are introduced into the system, a chemic substance is produced which kills the germs, and neutralizes their poisonous products. This substance is called an antitoxin. The existence of sufficient of the antitoxin of any disease in the system, makes it impossible for the bacilli of that disease to develop in the system. A less quantity of antitoxin hinders their development, and renders the disease more mild. The antitoxin not only prevents the disease, but if it is introduced into a person sick with the disease it shortens its course and renders the disease less virulent. The antitoxin is the preventive and curative agent, and its effect is never like that of the poison of the disease. Even here, then, the so-called law, *similia similibus curantur*, is not operative.

It is a remarkable fact that though this sect has been in existence a hundred years, it has made no contributions to science. It has, perhaps, added a few drugs to the Pharmacopœia, but its disciples have never published a single discovery in anatomy, histology or pathology.[23] During the same time, almost everything that is now known relative to the nervous system, for example, has been discovered. Even in the last score of years the most important discoveries have been made in the relation of bacteria to disease, and in what may be called pathologic chemistry.

Members of the homeopathic sect frequently seek to excite opposition against the scientific physician by calling him "old school." They imply and often affirm that the regular practice of to-day is practically the same that it was 2,500 years ago. The fact is that during the last century, homeopathy has made no essential progress, but scientific medicine has shown such continual change and rapid development, that it has almost nothing in common with the science of 1800. Homeopathy has, perhaps, lopped off some of its eccentricities, but it has added practically nothing to our knowledge of disease and the curative properties of drugs, and it has made little attempt to keep up with the recent discoveries. If we grant the existence of schools of medicine, the term "old school" must, therefore, be applied to the homeopathic sect, rather than to rational medicine.

It has been said, that if rational medicine is changing so rapidly, it can not properly be called a a science. During this century, much has been learned in chemistry, and with advancing knowledge, theories have been reconstructed. A perfect science we nowhere have. Although we do reconstruct our chemic theories, chemistry is a science. So is astronomy, though it is too much to believe that we know all in astronomy that it is possible to learn. Medicine is a science, and it is fast approaching a perfect state, though it will not attain that point for many years.

It has now been clearly demonstrated that the symptoms of Asiatic cholera are the result of poisoning with the ptomaine produced by a certain bacillus. Rational treatment, therefore, demands either the destruction or the neutralization of the bacillus and its product. Homeopathy, however, continues to treat purely according to general symptoms. An attempt has been made to show that the former homeopathic treatment is scientific, because in some instances the remedy used proved to be germicidal for that particular disease in which it was prescribed.[24] It must be remembered that such evidence only proves that the particular remedy studied owes its efficiency, perhaps, to its germicidal property, and falls far short of demonstrating the scientific value of homeopathy.

To the strict homeopathist, looking only at the totality of symptoms, there is little necessity for a differential diagnosis between paralysis resulting from cerebral congestion, a tumor, spinal disease, or apoplexy. For the scientific practitioner this distinction is of the greatest importance, and often the life of the patient depends upon its correct determination.

While bacteriology, chemistry and histology are taught in homeopathic colleges, they have no part in the ordinary homeopathic practice and are, therefore, too much neglected. The homeopathist has little use for the microscope, but for the scientific physician it is a necessity.

If it is true, as we have tried to show, that there is no such thing in reality as opposite results with large and small doses; and if it is true that there is no genuine homeopathic practice, how has the sect thrived in the past as it has?

"Nothing succeeds like success," is an old saw. The fact that homeopathy has thrived in the past, in spite of opposition, is for many a reason for trusting it without investigation. Though influential to increase clientage, it is no proof of its value. The oily-tongued quack, absolutely without moral principle, and with the merest smattering of medical lore, can always get testimonials from all sorts of people. The very blackest of them secure the strongest recommendations from honored clergymen.[25]

The homeopaths have constantly traded upon the name of their sect, printing it upon their cards, billheads and door-plates. They have sought to make people believe that nauseating mixtures, polypharmacy, and drug poisoning were essential parts of the regular practice, though, in fact, such treatment is as thoroughly condemned by the scientific doctor of to-day as by the homeopaths. Though the practice of the modern homeopath differs but little in reality from that of his scientific neighbor, the homeopaths erect an artful barrier, exclude themselves from the society of the general profession, and then pose as martyrs. Homeopathic practitioners, who honestly admit that they do not regard *similia similibus curantur* as "the only law of cure," who practically use the law only in the absence of more scientific treatment in the less common diseases, still persistently refuse to join regular societies, when the only thing demanded of them is, not that they shall change their practice, nor their honest convictions, but that they shall drop the designation "homeopathic."

Some years ago, when the homeopaths were trying to get a homeopathic department in the University of Michigan, it was stated that about one-half the practitioners of the State were homeopaths. At that time there was no way to prove the falseness of the statement. In 1883 a law was passed requiring all physicians in the State to register. Out of 3,400

[23] The above statement relative to homeopathic work in science, has been frequently made, and so far as the writer has been able to find, never denied.

[24] See article by A. F. More, in the New England Medical Gazette, February, 1892, p. 66.

[25] One of the greatest obstacles to the elevation of the standard of the medical profession to-day, is found in the attitude of the clergy. Knowing nothing practically of medicine, they are constantly indorsing orally, and in public print, quacks and patent medicines.

who complied, 510, or 15 per cent. were homeopaths, of whom only 382 claimed to have graduated from any medical school. A recent writer made the assertion that in the State of Illinois, "three-fourths of the most intelligent class of citizens" are homeopathic patrons.[26] Though this statement is without the slightest foundation, the fact that it was printed publicly, in a reliable newspaper, or one generally so considered, is sufficient reason for many to take it as "gospel truth," and to act accordingly.

The average homeopath regards refined homeopathy as a form of fanaticism. The pharmacist who sells bottled sunshine, and other chimerical remedies, he considers as either mentally or morally insane. He uses antidotes for poisons, and freely resorts to surgical and other mechanical means of treatment. He frankly admits that according to the more recent discoveries in science, many if not most diseases are the result of poisoning, and that analogy demands that these cases be treated—not homeopathically—but by antidotes. Many further claim that with advancing knowledge, the true scope for the use of homeopathy is decreasing. They are reserving it for only the doubtful cases. They no longer take it as the "only law of cure." In other words, there is little to distinguish the practice of the liberal homeopath from that of the ordinary practitioner.

On the hand, the high potentists claim that they themselves are the only true homeopathists. Though they are but a handful in the sect, and though they, too, have discarded Hahnemann's pathology, and his teaching relative to potentialization by succussions, the impartial student must admit that their claim is apparently well founded.

It is sometimes claimed by homeopaths, that mechanical treatment, electricity, antidotes, et cetera, which they use, do not cure, but only prepare the patient to be cured. If it were added that nature cures the disease, the statement would be correct; but that is not their meaning. They claim that the cases are cured after such a preparation by homeopathic drugs. Their claim is exactly on a par with that of the cancer quack, who removes the cancer *without pain* (after having made the patient endure untold agonies, while caustics slowly burn out the disease). The cancer quack simply lifts out the slough remaining after his inhuman treatment is over.

It is proper here to refer to another charge, which is frequently made by homeopaths against the regular profession. They say that medicines are frequently adopted from the homeopathic school, without giving it any credit for bringing the same to notice. That is mentioned as an injustice. The fact is that the profession gives individuals credit for any investigations of merit, but it recognizes no school, and hence never gives any *school* credit for anything. Further, the standard works on materia medica seldom mention the names of those bringing a drug into prominence. There is, therefore, no injustice done the homeopaths, singly or collectively, in the matter, and any attempt to stir up sympathy on this score is out of place. With reference to this charge, an article headed "Who does the Stealing?" in Vol. I of this JOURNAL, page 434 (1883), receives additional interest from the tragic death of the writer, the late Dr. P. H. Cronin, of Chicago.

It has been claimed that homeopathy is scientific because it alone recognizes a single law of cure. Carroll Dunham objects to regular medicine as unscientific because "hence, a new science must be formed for every new type."[27] It is surprising that such a man should confuse *law* and *science*. There are many laws in physics besides that of gravitation. The existence of magnetism does not prove that gravitation does not exist, although they may oppose each other. There is no science within the writer's knowledge, which recognizes a *single* law. Is it not too much to expect, therefore, that the supposed law of similars is universal? If it is not universal in its application, it can only be recognized in the science of medicine when its limitations are recognized.

In conclusion: Since there is nothing of value which is peculiar to homeopathy; since the dogma upon which homeopathy is founded is contrary to reason and contrary to fact; and since a large portion of the sect no longer bind themselves closely by the dogma in practice, but hang on to the designation apparently for advertising purposes, the existence of the *sect* is not conducive of advancement in the science of medicine, and its further life as a sect should be in every way discouraged in all intelligent communities.

[26] Com. to Chicago Inter Ocean, Nov. 25, 1892, p. 19, col. 2.

[27] Homeopathy, the Science of Therapeutics, p. 19.

THE MEDICAL EXPERT WITNESS.

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The field of medical jurisprudence, by the necessities and conditions of the times has been enlarged, until it now assumes a phase of high importance to the profession, both of medicine and law. Its principles were applied in a primitive form centuries ago, but not until recent years has it developed into a science. It has made its present growth largely within the present century, and is now fully recognized by the general practitioner of both professions, as an indispensable part of his professional learning. This increased importance of the new science is due to two causes:

1. The science of medicine has been improved. Its rules and principles have been reduced to greater certainty; and the accuracy with which they have come to be administered, has firmly established the profession in the confidence of the people.

This was absolutely necessary to render medical knowledge available for the purposes of the law. In general theory the law of evidence deals only with facts, and not until the science of medicine had by experiment, observation and learning, been reduced to practical truth, was the medical expert an important factor in the administration of pure justice. But when he had arrived at that point in learning and skill where his opinion could be received by the court and jury with the force of a fact sworn to, then it became admissible as testimony, not so much as an exception, but rather because in effect, if not in fact, it came within the general rule.

2. The increased importance of medical jurisprudence is due to the changed necessities of the legal profession. The growth of population; the application of law principles to new fields of enterprise; the use of new inventions and motor power, increasing the number of "dangerous avocations;" the gen-

eral growth of life insurance, and the frequency of insanity inquisitions, all tend to increase the number of cases where the medical expert is useful and necessary; and the general recognition, by the legal profession of the value of this kind of testimony, as a means of arriving at the truth, impel lawyers to resort to it whenever applicable to the case in hand. In this connection, Justice Foster of New Hampshire, in Dole vs. Johnson said: "In the multiplication of interests connected with the application of the laws of science, which are daily growing more and more numerous and refined, it is hardly possible to dispense with the aid of experts in determining the rights of parties."

To define the term, medical jurisprudence, it is perhaps sufficient to say: "Medical jurisprudence is that science which applies the principles of medicine and surgery to the purposes of the law. Presumably the purpose of all law is justice; and when the established facts pertaining to the medical profession will contribute to that end, justice, then it is not only legitimate but highly proper for the court, the medium through which justice is administered to litigants, to resort to them to ascertain the truth. It is the general rule that witnesses are permitted to testify only to facts; and it is sometimes said that the admission of medical expert testimony, is an exception to that general rule. In a sense this is true, and it is on this account that there has grown up a system of legal rules governing the subject matters of expert testimony, the qualifications of the competent medical expert, the manner of his examination, the manner of weighing his testimony, the means of discrediting him, his compensation and his responsibility, and these rules have become so well established by long usage and general approval that they are now the principles of medical jurisprudence and constitute it a science. It is of the expert witness and his relation to these several rules that I wish to treat.

The first question to be determined when the medical expert takes the witness stand, is whether he is qualified to testify on the subject matter of the examination. The necessity of resorting to this character of evidence arises from the fact that the subject matter of inquiry is such that unskilled and inexperienced persons are not capable of forming a correct judgment on it, without assistance of this kind. If the expert, by study, training, experience and observation has become specially skilled in a particular science or profession, then he can speak with sufficient authority to entitle him to testify. It is not required that he should have gained eminence or distinction by his learnedness, or that he should understand the minutiæ or technique of the science. It is sufficient if he has made a special study or practice of the science or profession. The knowledge must be peculiar to himself and his profession, and not common to mankind generally. It is this general rule that admits the testimony of the physician or surgeon on all subject matter pertaining to the field of medicine and surgery. He need not have had any actual practical experience in the particular disease or injury to which he is called to speak, and even his scientific observation need not extend to that particular branch of the medical science. For example, the expert may never have treated a fracture, and yet be competent to testify as to the best methods of reducing it. He may in his practice never have seen a case of strychnia poison, yet he is entitled to speak on the witness stand of the symptoms of that poison, and its effect on the human system and of its antidotes. His information and learning concerning the particular case in hand, may be based entirely on the books and still he is competent to testify. It is considered that his study and reflection on the subject, and his observation and treatment of its analogies enable him to speak with authority. It is not sufficient, however, that a person not a physician or surgeon should read the medical books, and then testify to the information gathered therefrom, neither is it competent to read to the jury from medical books, even though they be the same from which the medical expert gathers his learning on the subject in hand. To admit the contents of such books in evidence, would be to accept the statements of the author unsworn to; and to permit the person unskilled in medicine and surgery to testify to what he had learned solely from such books would be in effect to admit as evidence the statements of a third person, and hearsay evidence is always incompetent. But perhaps a more important reason why such statement is not admissible, is due to the fact that the jury, being men unskilled in the science, is not capable of drawing correct conclusions from the matter read to them from the books, or related to them by the witness. It is just here that the usefulness and reliability of the medical expert is important.

1. He is capable of knowing what authors are standard authority.

2. He understands the technicalities of the medical author's language and properly interprets them to the jury.

3. Being skilled in the study of the principles of the science he can draw correct conclusions from what he has read.

So while it is competent that the jury may know what standard authors may say on the subject in hand, it must come through the proper channel—the man who has given the matter study and reflection—and in a sense has mentally digested it for the jury, who otherwise could not have assimilated and appropriated it to the purposes of the questions involved in the litigation. If it were possible to have a jury of twelve medical men in all cases where medical evidence is required, then the medical expert would be unnecessary. But he stands in two relations to the court:

1. As an interpreter, he translates the terms and language of the science to the jury.

2. As a thirteenth juror he draws conclusions from medical facts in evidence, and gives them to the other twelve.

The rule as to the necessary qualifications of the expert, generally, is so ably laid down by the authority above cited and it is so applicable to the medical expert particularly, that I quote the following:

"The object of all testimony in courts is to place before the jury a knowledge of facts pertaining to the case under consideration, and it is a serious departure from this purpose even to admit, instead of actual knowledge, mere opinion, however correct it may probably be, and therefore, opinion if admitted at all, should be as nearly approximated as possible to the actual knowledge of facts for which it is substituted; and it should always be required of an expert that he should at least be sufficiently acquainted

with the subject matter of his testimony to *know* what its laws are, and not merely to conjecture or to have an idea about it. That is, he should be really a man of science. The science (especially in the absence of skill) which an expert should be required to possess and employ on a given subject, implies that special and peculiar knowledge acquired only by a course of observation and study, and the expenditure of time, labor and preparation, in a particular employment and calling of life.

"We admit the wisdom of the rule which, permitting a man of genuine science to give as his opinion the results of study and research into books of knowledge and authority, yet will not allow such books to be read in court to the jury. The rule is founded partly in the delay which would thus be occasioned to the business of courts, and partly in the idea that it is safer, on the whole, to trust to the judgment of learned men, acquired by study, observation and skill, than to the imperfect deductions of jurors hastily derived from readings not familiar to them, unassisted by study, examination and comparison of kindred subjects.

"But so long as the opinions of the most distinguished and most learned authors in the world, expressed through the direct and pure media of their celebrated works, are thus excluded from the jury, surely it can be neither wise nor prudent to admit opinions unsustained by the slightest experience or even observation, the deductions of readings at best scanty and superficial, because not pertaining to the special study and business of the reader. . . .

"Of course it must be admitted that the testimony of knowledge and opinion, obtained from mere reading, without study, reflection or observation, is no more than a relation by the witness of that which the policy of the law excludes, namely, the books themselves which the witness has read.

"The limit of safety in this direction is reached, it would seem, when we admit the opinions of medical men with regard to a disease (or injury) which in actual practice they may not have treated, but concerning which the science and skill of long experience in the affinities and analogies of the subject have prepared them to speak with confidence, from a knowledge of the rules and laws governing the special subject of inquiry. . . .

"And so the practice in this State permits the skilled practitioner, who has made himself familiar with the science of medicine and surgery by a long course of study and practical experience with kindred subjects, to testify as an expert; and common sense demands that such a man shall have respect given to his opinion, though he may have had no practical experience in a particular case."

It would thus seem that to render the medical expert qualified to testify, he must really be a man of science, a practitioner, or one fitted by study and reflection to be a practitioner of medicine and surgery. The question as to whether or not the qualifications of the witness bring him within that rule, is a preliminary question for his honor on the bench, and with which the jury have nothing to do. If his honor finds on preliminary examination that the qualifications of the witness are such as to bring him within the rule, then his testimony is admissible, and his views are entitled to go to the jury. The weight to be given his testimony, is a matter purely within the province of the jury, and to enable them to act intelligently in weighing his testimony it is proper that they should know any and all facts pertaining to the knowledge of the witness, of the subject matter of which he testifies, the time spent in the study of the science, his years of experience, the extent of his observation, and whether or not the witness bases his opinion on the study of the books, or on his practical experience and observation, or both. And the law makes it the duty of the jury to take these matters into consideration, when they come to say whether they will give his statement much or little weight.

Assuredly it is not in all cases an easy matter for the court to determine the question as to whether the qualifications of the witness admit his opinions to the jury as an expert. Certainly the quack and the mountebank are not to be ranked as competent to give an opinion on which the life or property of a litigant may depend. They may be practitioners of medicine, yet poor reliance on which to hang important rights. But who is the quack? The man who first derogated from the practice of bleeding the patient, once so universal with the profession, may have been called a quack. He who first insisted on other remedies, than calomel, for certain diseases, perhaps violated the rules laid down and followed by the profession. At one time the man who dared to administer cold water and ice to the fever-stricken patient, might have been refused admission as a member to your honorable society. Such men may, in their day, be called quacks, and yet they are preeminently qualified to render an opinion, because they are truly men of science. He who by his diligence in study and research makes new discoveries in any science, is first of all entitled to speak, and yet it is not always an easy matter for the court, who is not a scientist in that line, to distinguish him from the mountebank and impostor.

"Nor does the court consider, in passing upon the qualifications of the expert, whether he belongs to this or that school of medicine. It is not presumed that he can say which is right and which is wrong, in their theory and practice of the profession; nor from what particular college he happens to hold a diploma. These are facts which the jury are entitled to know, and it is within their province to say on their oaths how much weight they will give to the opinion of the Regular, the Homeopath and the Eclectic.

Before leaving this phase of my subject it may be of interest and profit to refer to what the Supreme Court of our own State says on the qualifications of the medical expert, in Siebert et. al., vs. The People: "A licensed, practicing physician who is shown to be a graduate of a regular medical college, and to have practiced his profession for many years, is competent to give his opinion upon an hypothetical question setting forth the symptoms of a person immediately prior to his death, whether the death was from the effects of arsenical poison, although he may not be shown to have had any case of such poisoning. A medical witness, in giving his opinion as an expert, is not confined to opinions derived from his observation and experience, but may give an opinion based upon information derived from medical books."

While the courts of this and of European countries have very generally recognized the wisdom of resorting to expert opinion, to determine rights involving medical scientific questions, yet the manner of select-

ing the expert witness differs widely in the different countries; and there has been no little discussion as to what is the best method. In France it is made the duty of the court to appoint the expert, and it then devolves upon him to investigate the medical questions involved in the case, and report his conclusions to the court. In Germany, the state, after an examination as to competency, appoints medical men as experts to testify in cases where such testimony is required; and if desired by the litigants the opinions of these may be referred to a higher tribunal of medical experts, also appointed by the state.

In Prussia, the law provides for the appointment of a physician and surgeon in each county to act as medical experts. In case an appeal is desired, the matter is submitted to the medical college of the province in which the county is situated; and a still higher appellate authority is provided, by the appointment of a national commission of medical experts, which is a court of last resort.

In this country as in England, the manner of selecting medical experts is entirely different, and as we believe far superior to that of the countries named. Here each litigant may call from the profession whoever he chooses, to testify in his behalf, or in support of his theory of the case. It has been urged against this method that it offered too great inducement to fraud; that the expert would appear rather as an advocate, working for a fee than as a nonpartisan witness; but this objection has but slight weight when placed in the balance with the objectionable features of other systems. The same may be charged against all other plans with equal force, for it simply means that there is danger of the litigant bribing the witness. The other plans mentioned involve the danger to which all appointive offices are more or less subject, namely, partisan prejudice and political corruption, and to the still greater danger of absolute incompetency and ignorance. There is no substantial objection to the American plan. The profession is made up very generally of men whose high moral and social standing is a guaranty against dishonorable means. There is perhaps no class of men, taken as a body, who have a deeper professional pride than that of physicians and surgeons. It is with them as with Cassio—it is reputation—and there is but little to fear of the medical expert risking his reputation by an unlawful collusion with the litigant who calls him. Moreover, if he should attempt to prostitute the science to false and fraudulent ends, he can hardly hope to escape disaster when it comes to cross-examination, for a false or ignorant *expert* witness is more vulnerable than any other. This is true because under the American plan he can be met by the most talented men in the science, and can be confronted by the very works on which he chooses to base his opinions. If the cross-examiner is equal to the occasion—and if he does his duty to his client he is thoroughly familiar with the medical side of his case—he will detect the falsehood or error of the testimony and disclose it to the jury. The very strength of the system is its tendency to encourage the selection of the best talent the profession can boast.

The manner of the examination of medical experts has occupied the minds of medico-legal text writers perhaps as much as any other one phase of the subject, and it is a matter on which there has not always been uniformity of opinions in the decisions of the courts. If the witness was the attending physician, he is asked to state his conclusions from the facts as he observed them, but if he has had no personal connection with the case, the facts, or what is claimed by the litigant calling him, to be the facts, are stated to him hypothetically and he must state his conclusions, drawn from the hypothetical statement of facts. Certainly if the facts are conceded or agreed upon by the litigants, or if they are proven and undisputed, then they need not be assumed. But if there is contention as to what the facts are, then counsel is bound to state the facts hypothetically according to his theory of the case, and call for the professional opinion of the witness thereon; and opposing counsel on cross-examination may propound to the same witness the hypothetical question based on *his* theory of the facts. If the facts are agreed on, or conceded, then the question must contain all the facts agreed on or conceded, and no more, for if the conclusion of the expert is based on more or less than the actual facts it is the duty of the jury to take that into consideration, and they could not logically give weight to an opinion based on a state of facts different from that involved in the case. When the facts are in dispute then counsel may assume any state of facts, pertinent to the case, of which there is any evidence before the jury, and the first thing for the jury to determine, when they come to consider the expert testimony, in making up their verdict, is whether or not the facts assumed in the hypothesis are the facts proven in the case, and if they believe from the evidence that they are, then they should give the conclusion of the expert, based on the hypothesis, due consideration, and such weight as they deem it entitled to. On the other hand, if they find from the evidence that the facts assumed by counsel in the hypothetical question are not the facts proven in the case, then, although the opinion of the expert is correct from the standpoint of counsel, yet it is of no value to the jury in arriving at the truth, because it is not applicable to the case proven, and they have no right to consider it. It is doubtless true that much profound medical learning and many able professional opinions have been wasted on the "desert air" simply for the reason that unskilled or unfair counsel do not embody the true state of facts in their hypothesis. If the hypothesis of the lawyer falls, the conclusion of the doctor falls with it. It is a pure, simple syllogism; if one premise fails the conclusion fails. As to the duty and rights of counsel in this matter I quote the following from Rice on Evidence:

"Counsel in framing hypothetical questions to be put to expert witnesses, are not confined to facts admitted or absolutely proved; but facts may be assumed, where there is any evidence on either side to establish them, which are pertinent to the theories which they are attempting to uphold. In the direct examination of their own witnesses, it would tend to confusion if facts were assumed in hypothetic questions which did not bear upon the matters under inquiry, or which were not fairly within the scope of any of the evidence. Upon the cross-examination of an expert, counsel may not be so narrowly confined but may, in putting hypothetic questions, assume any facts pertinent to the inquiry, whether testified to by witnesses or not, with the view of testing the skill and accuracy of the expert; but such cross-examination must, to some extent, be under

control of the trial court. The proposition here contended for, finds ample vindication in a recent decision of the New York Court of Appeals."

It is the prevailing rule that the expert witness is entitled to demand and receive adequate compensation for his opinions on the stand; and he can not be required to speak until it is assured. This applies only where he is called to give a professional opinion on a scientific question. He may be required to testify to matters of fact without other reward than the non-expert is entitled to, even though he becomes possessed of the facts while acting in his professional capacity. Thus, if a physician be called to attend a dying patient and the cause of the death should afterwards become a question involved in a suit at law, the physician may be required to testify to all facts he learned while attending the patient, and to all material matters observed by him. And this he does with the same rights as an ordinary witness, although his statement of the symptoms may be much more valuable than that of a non-professional man. But when the examination goes beyond the range of fact and calls for an opinion on a question on which none but a man of science is competent to give an opinion, then the expert may decline to answer until he is fitly rewarded for the information which the litigant seeks. This is so because this information is property. It is the physician's capital. To acquire it, cost him the expenditure of labor and money, and he can not by any rule of law or morals be compelled to divulge it in court for the benefit of the litigant who calls him, without pay, no more so than if called professionally to the bedside of the same party to administer to him. If the law were different it might create a great hardship on some members of the profession. It would be dangerous to acquire great distinction or eminence. The man most learned in this or that specialty of the science would be sought after on all occasions where questions in his line were involved. He thus might be called upon to devote his whole learning and energies to the benefit of parties in court to the demoralization of his own personal and private affairs and to his great loss. Law requiring this would seem to be hardly consistent with reason and justice, yet some courts have so held. We believe the Supreme Court of this State has not passed on the question. In general, that for which the expert is entitled to extra pay is his answer to the hypothetical question; yet there may be many other questions incidental to the leading issues that call for expert opinion, and to which the rule equally applies. The pay must necessarily be demanded from the party calling the witness. The testimony is presumably for his benefit, and he must pay; and this is true, even though the testimony should prove disastrous to his cause. The expert can not require pay from both sides of a case so long as his testimony is confined to the subject matter on which he was examined primarily. Thus if he offers an opinion on the plaintiff's theory of the case, he can not require pay from the defendant on cross-examination on the same subject. The defendant is entitled to have the jury know the qualifications of the witness, his means of knowledge and the authorities on which the opinion is based, and his reasons for his conclusions. He is bound to submit himself to all the legal tests, and he may be required to answer questions purely for the purpose of determining his credibility and reliability. But if the cross-examination goes beyond this and outside of the subject matter of the direct examination, and calls for a scientific opinion on other matters, the witness may refuse to answer on the ground that he has not been paid for the information sought.

Can a physician be compelled to divulge in court professional secrets, if a reasonable and satisfactory fee is first tendered? This is a question on which there seems to have been some diversity of legal opinion in the past, and a number of the States have settled the question by statutes governing the matter. We are not aware that the Supreme Court of Illinois has passed on the question, but in those States generally where it is not controlled by statute, the courts have held that the physician can not refuse to answer on the ground that his answer will divulge professional secrets, or that it is privileged communication; and that is the common law. As to the amount of the compensation, the law only requires that it shall be reasonable and its reasonableness should be measured largely by the qualifications and professional reputation of the witness, and the importance and difficulty of the questions on which he is called to testify.

It would be impossible for me in this paper to speak at length of the duties of the medical expert. His duties are so broad and varied, even a review of them can not be covered in so short a time. The chiefest part of them arises and must be performed before he is called to the witness stand. This is specially true of the physician who happened to be connected professionally with the case. It is not infrequently, that the very source of justice or injustice may be traced to the attending physician. For example, a physician is called to attend a person injured in an accident. The patient dies from the effects of the injury, and the question of the cause of the death arises in court in a suit for damages. If the physician has had an eye to the medico-legal phase of the case it often happens that through him the exact truth may be discovered, and if not through him it may not be discovered at all. It may be that a thorough and minute examination of all the details of the person and his injuries will disclose the source of the injury, and locate the negligence that caused it. He may be able to tell whether the force came from behind or in front, or whether the patient himself, by his negligence, contributed to the injury; and numerous other facts may be developed from the observations made by the physician. Again, he may be called to attend a patient to whom poison or abortifacients have been criminally administered, and while he is endeavoring to save the life of his patient he should gather and retain every fact that will tend to the discovery of the criminal. Every symptom that indicates the nature of the poison, should be carefully noted and the statements made by the patient not forgotten. And in case of death, no more valuable service can be rendered the cause of justice than that of taking in legal form the dying declarations of the victim. These statements, to render them admissible must have been made *in extremis*, under a sense of impending death, and at a time when the patient has lost all hope of recovery. It is better, though not imperative, that they be reduced to writing, read over to, and signed by the patient. Courts have expressly recognized the fact that these statements are more valuable if made to a medical attendant. Courts have admitted this kind

of unsworn testimony on the theory that the solemnity of the hour and the belief that death is imminent, and at hand, dissolves every motive to falsehood and impels the person to speak the truth. From these considerations courts give to such statements the sanctity of an oath. In a case of this kind a postmortem examination of the deceased is often absolutely necessary to discover the true cause of death, and should never be omitted, even though it adds but little to the physician's knowledge of the case. Every postmortem symptom should be noted and every part and organ of the body likely to disclose the kind of poison, should be preserved for chemic analysis. If the attending physician would bear in mind that the slightest minutiæ and detail are often of the utmost importance when it comes to the medico-legal side of the case, his sense of justice would prompt him to faithfully preserve them for use in court. If he should wilfully neglect or discard them from his mind to avoid the inconvenience or embarrassment of being called as a witness, he is simply guilty of professional cowardice.

It is only fair to the expert who has had no professional connection with the case, to state to him fully before he is called as a witness, all the facts in the case pertaining to the medical side of it. He may thus be placed to some extent on the same footing as the attending physician. It enables him to consider the facts in connection with his knowledge of medicine or surgery and reviews, if he desires, the authors he read in his novitiate. He can consequently give a more certain and mature and hence a more valuable judgment to the court and jury.

The duties of the medical man in cases where legal questions arise, are so numerous and important that no member of the profession can afford to be indifferent to them. To act as a witness in court may be odious to him but it is not optional; and however secure he may feel himself to be from the demands of the court he is almost certain, sooner or later, to be connected with a case where he is a material witness and will be required to testify. If he has had a due regard for his medico-legal duties as a physician he may be prepared to establish an important right, or redress a grievous wrong. If he has failed to note any material facts, it will likely prove the vulnerable point of attack on cross-examination. His dereliction will be made the most of by artful opposing counsel. The responsibility of the medical expert is commensurate with his duties; as the one is important so the other is grave. While he is by no means legally liable for an honest mistake of judgment, yet there is a moral responsibility from which there is no escape. There is perhaps no instance where the private citizen is placed in a more onerous position than the doctor, when called to the witness stand in certain cases. It is frequently the case that great property rights turn on the truth or error of his judgment; and he confronts a still more serious condition when the liberty or life of a citizen hangs on his testimony. Through his mistake a death by fiendish murder may be ascribed to innocent causes, or, what would be almost as bad, by an error on his part the guilty man would go unhung. It is true the medical expert has been the subject of much harsh criticism and abuse, and even courts in the past have spoken adversely to that character of testimony. Numerous decisions not a quarter of a century old may be found where high legal authority has denounced it as unreliable and unworthy of consideration. But later decisions indicate that courts have radically reformed their opinions in this direction and have come to regard medical expert testimony of the highest importance in determining rights involving medical and surgical problems. I venture the opinion that if to-day a case involving intricate medico-legal questions, were submitted to the Supreme Court of the State of Illinois for consideration, in which no medical expert testimony had been offered to assist it in arriving at the truth, it would censure counsel for what it considered a gross neglect of duty. In short, it has come to be regarded as absolutely indispensable to the functions of the court in many cases; and the physician who is ready, when called, to give an honest and mature judgment on questions in his line is a powerful and important factor in the administration of justice.

CONGENITAL AND HEREDITARY GOITRE.

BY CHAS. W. ROOK, M.D.
QUINCY, ILL.

Case 1.—Frederick, second child of Mr. and Mrs. F. B., was delivered by me, Aug. 22, 1893. Position of child in utero, L. O. A. Because of maternal exhaustion, the labor was terminated instrumentally. For a few hours, the child was cyanosed and respiration stridulous. The right lobe of the thyroid gland was of the size of a hen's egg, while the left was one-third less in size. Although the goitrous tumors have gradually decreased in size, the child involuntarily keeps its head extended that respiration may be more easily performed.

The mother, aged 23, and her sister aged 26 years, have been goitrous since the ages of 12 and 17 years respectively.

The notes of Cases 2, 3 and 4, the latter being a case of hereditary goitre, were kindly furnished me by my friend, Dr. E. B. Montgomery, of Quincy, Ill.

Case 2.—Mrs. W. H. M., aged 29 years, was attended by me, May 24, 1893, in her seventh labor as she had been in the previous six accouchements; she has been goitrous since her marriage thirteen years ago. The other children were all sound, healthy and free from blemish. The seventh child had, at birth, a very large goitrous tumor, extending well over the entire neck and up into the submaxillary regions and by pressure rendering the breathing stridulous as in laryngismus stridulus.

The infant remained cyanosed and the respiration noisy and croupous until its death, which occurred eight hours after birth.

Case 3.—Infant daughter of Mr. and Mrs. R.W.F., born Oct. 24, 1893. Each lobe of the thyroid gland was markedly enlarged. Respiration stridulous for twelve hours, after which it became easier. The following very unique family history was obtained: An elder brother of Case 3, nearly 5 years old, has been goitrous since birth. The mother of these children, aged 22, and her sister aged 19 years, each have well marked goitres; and the father, aged 28, and his sister aged 24 years, have goitres which they have carried since their earliest recollection; while the father's mother is also goitrous.

Case 4.—Miss E. B., aged 23; goitrous tumor involving the right lobe of the thyroid. Miss B. has always had a fat neck, but whether her goitre was congenital or not is unknown. The mother of Miss B. is about 50 years of age and also has a very large goitre, the growth being much larger on the right side. A daughter of the mother's sister is also goitrous.

For references to the literature of this subject, I am indebted to Surgeon J. S. Billings, U. S. A., and the *Index Medicus*.

Dr. Geo. S. Chalmers, now of Galesburg, Ill., mentions, in the *New York Medical Record*, Oct. 6, 1883, Vol. xxiv, p. 390, "A Case of Congenital and Hereditary Goitre."

He writes: "A few days ago I was called to a lady

in labor, and in due course she was delivered of a large boy. There was nothing remarkable in the progress of delivery, except that when labor had progressed well into the last stage, things almost stood still with the head firmly wedged in the lower strait. Imagine my surprise to see a well developed goitre on the child's neck. The swelling came up under the ears and with quite an enlargement over the windpipe. The goitre felt moderately firm as if from simple enlargement. The child was cyanotic at first, and had to be encouraged by cold water douches and manipulation before it commenced breathing; and then it was fully an hour before its color became natural. We soon discovered that if the head was kept fully extended, breathing progressed naturally, but if the head became flexed, breathing became irregular and the face cyanotic. It is now doing well, six days after delivery, and is a vigorous feeder.

"The mother is exophthalmic, with quite an enlarged neck and noticeably prominent eyeballs. I have never seen a case of congenital goitre recorded. What can be done for a case like this?"

From a recent correspondence with Dr. Chalmers concerning the above mentioned case the following notes are extracted:

"In regard to the case you speak of, I would say that the subject has been under my almost daily observation since his birth until somewhat over a year ago. He was a puny lad and I hardly expected to see him pull through the period of adolescence but, thanks to kindly care and the best of home surroundings, he has developed into quite a boy. His goitre never increased; in fact, is not as noticeable now as it was at birth. He is now tall for his age but slender, with rather a pale face. He is not bright; is somewhat dull of hearing and inclines to stutter in his speech. He is of an extremely nervous temperament, easily startled and, in that respect, quite childish. He has kept his place in school without falling noticeably behind and, if nothing happens, is likely to go through the high school course.

"The mother, also of a very nervous temperament but in better health than before the birth of the boy, is quite noticeably exophthalmic."

Captain J. C. Worthington, M.D., Asst. Surg., U. S. A., reports in the *New York Medical Record*, 1883, Vol. ii, p. 708, "A Case of Congenital Goitre Cured by a Single Application of Mercuric Biniodid." He writes:

"I first saw the patient, S. D. B., a well developed male infant, July 26, 1883, six hours after birth. The mother, a native of Prince Edward Island, and for a year past resident on her husband's ranch on the Uncompahgre River, Colorado, had had a slight goitre for over two years, the swelling having first been noticed during her previous pregnancy. The family was much alarmed at the appearance of the child's throat. On examination, I found a marked goitrous swelling, soft, but not fluctuating, on the right side of the trachea. The tumor was as large as a hen's egg. I advised that nothing should be done until the child was three months old, when I would attempt to cure it by an external application, which I thought would not be advisable before that time. I did not see the child until November 12, when it was brought to me by the mother for the treatment that I had promised. I found him a well nourished baby, healthy in every respect except the deforming tumor on the right side of his throat, which had increased with his growth, and filled the whole space between the chin and sternum on that side. His mother stated that the tumor now interfered with his breathing when he lay on his back. The flattening of the crown of the head, mentioned by Aitken, was now well marked. I confess it was with some misgivings that I prescribed for the child the treatment mentioned in Aitken's 'Practice of Medicine' as having been attended with such wonderful success in India. I ordered the following:

℞. Mercuric biniodid gr. x.
Lard ℥i.
M. S. Apply as directed.

"I directed as follows: At 10 A.M. on a bright, sunny day, rub well into the skin over the whole of the tumor a lump of the ointment the size of a filbert. Then hold the child, with the tumor exposed to the sun, at a closed window, as the weather was cool, for half an hour, then for an hour in front of a fire. At 2 P.M. of the same day repeat the application, and expose to the sun and fire as before. On November 28, the child's mother brought him to me —cured. She stated that the treatment had been carried out as directed on the 17th, except that the exposure to the sun in the afternoon had been for less than thirty minutes, on account of its being so painful to the little patient; that he had had much pain and cried a great deal the following night; that the skin had become very red and had peeled off wherever the ointment had touched it; that she thought the next day the swelling seemed smaller and on the 20th, three days after the application, the tumor was almost gone, and had grown smaller ever since until it entirely disappeared. When seen November 28, eleven days after the application, there was no evidence of cutaneous irritation, and the thyroid gland was just perceptible to the touch as in a normally formed infant. The cure was complete. No salivation or other indication of constitutional effects of the mercury occurred."

A. T. Sloan, M.D., Edinburgh, writes in the *British Medical Journal* for 1886, Vol. ii, p. 859, "Is Goitre Hereditary?"

"Whatever may be the primary source of goitre, there is every reason for supposing that, once established, it is often continued in families by inheritance, or at least, in this manner a strong predisposition to the disease is acquired. The question whether the malady is hereditary or not has given rise to much discussion; and not a few writers, including St. Leger, dispute the fact. (See Cretinisme, p. 108.) His arguments, however, are by no means convincing, and confirm the typically endemic nature of the disorder, without in the least degree proving that a disease which is endemic can not at the same time be hereditary. That heredity plays an important part in the production of goitre, a study of my cases clearly shows; thus of twelve cases collected by me at Wishaw, Lanarkshire, eight show distinct heredity. In six, the mother and grandmother both suffered from goitre; while, of the remaining two, one had a cousin affected with the disease, while the other's mother died of the exophthalmic variety. It is interesting to note this case; the mother for years subject to exophthalmic goitre, and the daughter, a strong, healthy girl, now with the ordinary variety.

"Of eighteen cases collected at Penrith, Cumberland, ten are distinctly hereditary; in eight the mother being affected, in two the father suffering

from goitre. In one case grandfather, mother and aunt were afflicted with the disease; in another, it revealed itself in grandmother, mother and aunt; while a third was congenital, the mother also being goitrous. No less than five cases instance the occurrence of the affection in members of the same family, those affected being sisters. Some of these had lived for a long time in different parts of the country. Dr. Croford mentions the case of a woman with goitre, whose grandmother, father, paternal aunt and cousins also had it, although they did not live in the same place and no other person in their neighborhood was affected with the disease. (Cyclop. of Prac. Med., p. 335.)

"The disease is not only hereditary, but may even be sometimes congenital. In one of my own cases the goitre has existed from birth, and recently I had notes sent me of two cases of congenital bronchocele where the mother also was affected. Dr. Keiller (*Edinburgh Medical Journal*, 1855), records an instance where he delivered a Mrs. K., aged 24, of her first baby, which with the exception of a very large goitrous tumor, was a remarkably fine male infant. Mrs. K. was brought up in Cumberland, her mother being a native of Keswick. None of her immediate relations had goitre.

"Dr. James Reid, (*Edinburgh Medical Journal*, 1836, p. 49) has seen three infants who had the thyroid tumor fully developed; and Fodére thinks he observed a distinct goitre in three cases of newly born children. M. Godelle, physician to the hospital at Soissons, had a preparation of the body of an infant, which lived a few hours only, and which came into the world with a goitre, the mother being afflicted with the same disease. Mr. Bromley affirms that in India both children and animals are born with it; and cases of congenital goitre have been recorded in Derbyshire.

"I think the facts just mentioned go to prove that goitre is really a hereditary disease."

Dr. A. W. McAlester, Columbia, Mo., reports, in the Transactions Missouri State Medical Association, 1882, a case of "Congenital Multilocular Cystic Degeneration of the Thyroid Gland," from which report I take the following extracts:

"By the courtesy of Dr. Trimble, I was called in consultation June 4, 1881, to see the child of Mrs. B. When first seen by me, the child, a girl, was ten days old. I found a tumor, with irregular outlines, extending from the angle of the right lower jaw to the median line of the neck, seven inches, thence towards the opposite side, two inches; from center of right clavicle to middle of lower jaw, five and a half inches; lobulated, translucent and, as I thought, fluctuant, with somewhat of a solid base near the median line and lower part of the tumor. The child grew and did well for three months, after which time it became emaciated, the tumor still growing, thus showing that the child was not capable of standing this division of nutrition, to-wit to nourish the growth and the body at the same time. The emaciation continued, and the tumor increased until the day of the death of the child, Oct. 21, 1881. Pneumonia was the immediate cause of death. At the postmortem held the following day, the tumor was found attached to the hyoid bone, thyroid cartilage and three adjoining rings of trachea, thus making an attachment of two inches. Its dimensions were, long diameter, eleven inches; transverse, six and a half inches; weight two pounds, and was partly cystic and partly solid. The fluid evacuated from the cysts was transparent, odorless and composed largely of albumen."

Lennox Browne, F.R.C.S., Ed., reports in the *Lancet* (London), Aug. 9, 1890, a case of "Congenital Enlargement of the Thyroid; Removal, Recovery," from which report I make the following extracts: "M. T., female, aged 10 years, was admitted to the Central London Throat and Ear Hospital on Nov. 21, 1889. The patient was born with a 'lump' in her neck the size of a marble, which has been growing ever since. When admitted, there was in the region of the thyroid gland a large irregular tumor about the size of a fetal head at 7 months. Dec. 22, 1889, Mr. Lennox Browne removed the tumor under chloroform, the resulting wound healing by Feb. 24, 1890. The growth was a fibro-cystic goitre originating from the isthmus of the thyroid gland."

George H. Ormsby, M.K.Q.C.P.I., reports in the *Lancet* (Lond.) Feb. 25, 1888, the following case of "Congenital Goitre:"

"On February 10 I attended Mrs. T. in confinement. She had a rather tedious time owing to the pains being feeble, but in every other respect the labor was natural, and she was delivered of a son. The cord was round the neck once. Immediately the child was born, I noticed the large size of the neck in front, and at first thought it was due to constriction by the cord. However, on examination it proved to be a true case of enlargement of the thyroid on both sides, the right side being much larger than the left. When I told the patient what was the matter with the baby's neck, she said she was not surprised, as her own neck had troubled her a good deal since last September, at times causing her some pain and a good deal of uneasiness. About the same time it began to enlarge, and she was in the habit of frequently feeling it; but though it bothered her, she did not think it worth while getting advice about it.

"Goitre is very common in this district, and I have two cases of Graves' disease under my notice at present. I have only had one case of goitre in the male, and have never till now heard of or seen an instance of congenital goitre. Taking the mother's statement into consideration, I am inclined to think that 'maternal impression' has had some influence in producing the complaint. I have seen the child again to-day (February 17), and although the left side seems a little smaller, the right is still the same size. The deformity does not in any way interfere with the child's breathing, or with his taking food. Perhaps some of your readers will kindly say if they have met with a similar case, and what treatment, if any, they adopted. I feel inclined to leave it alone for the present, and see what nature will do."

Dr. Frank J. Lutz, St. Louis, Mo., presents in the Transactions Missouri State Medical Association, 1882, a report upon "Congenital Cysts of the Thyroid Gland." From the Doctor's report the following cases are obtained:

"Berand and Dangan, (*Bulletin de la Societé de Chirurgie*, 1861, p. 108) reports the case of a five and a half months fetus, which was born alive, with a vascular, soft, follicular struma extending from one parotid gland to its opposite fellow."

Virchow, (Die Krankhaften Geschwuelste, Vol. iii, p. 51) "observed a case, also, in a five and a half months fetus, in which the struma was covered with veins and weighed 16 grams."

Boucher, (Kystes Congenit. du Con. Thése de Paris, 1868, p. 108) "saw blood effused into a congenital cyst of the thyroid in a seven months fetus."

Bednar, (Die Krankheiten Neugebornen und Saenglinge, Vol. iii, p. 80) narrates a case "in which there existed congenitally a cyst as large as a walnut in the right lobe of the thyroid."

Hecker (Monatschrift fuer Geburtskunde, 1868, Vol. xxxi, 2 and 3, p. 119) reports the "case of a child which at birth weighed seven pounds, and which died immediately afterwards of asphyxia. It had a goitre weighing 41.6 grams; the normal weight of the thyroid gland being between two and seven grams."

Hubbaner, (Wertembergsche Zeitschrift fuer Chirurgie und Geburtskunde, 1858, p. 1, and Honel Soc. Anat., Oct. 3, 1873) mentions the "case of a boy from whose left lobe of the thyroid gland there grew a soft fluctuating tumor much larger than the child's head, constituting an impediment to delivery."

V. Ammon, (Die Augebornen Chirurg. Krankheiten des Menschen, p. 57) details a "case reported to him by Adelmann, who observed it in Dieffenbach's clinic. The child was fourteen days old when seen by Adelmann. The goitre was so large that several physicians diagnosticated a fetus in fetu. When the child cried, the goitre became of a dark red color, and the veins of the neck became immensely swollen. The child lived ten months, and at the postmortem examination serous cysts and cartilaginous formations were found."

Demme, (Gerhard Handbuch der Kinderkrankheiten, Bd. 111, 2d Haelfte, p. 390) mentions a case in which he "observed a neoplasm of the thyroid which weighed 102 grams. The child died thirty-six hours after birth." The same author (p. 391) illustrates the case of a "twin boy with a congenital cystic struma. The twin sister of this boy was also born with a congenital enlargement of the entire thyroid, hyperemic in its nature. Both the father and mother of these children have bronchoceles; the former's being follicular, the latter's cystic." Demme also gives the following statistics: "Of 462 cases of struma observed in the Children's Hospital, Berne, Switzerland, 53 were congenital. Of the 53 congenital cases, 27 were simply hyperplastic in their nature, 14 were follicular and 9 were cystic."

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VACCINATION.

BY JOHN H. RAUCH, M.D.

Owing to the increase of smallpox in the United States during the last two months, the State Boards of Health of Ohio, Iowa and Wisconsin have ordered vaccination of all the school children, and in some cases of the entire population, as they were authorized to do by the laws creating them in order to protect the public health. At least 90 per cent. of the population of this country are favorable to vaccination. Still, in certain localities in Iowa, Wisconsin, Springfield, Ohio, and Williamsport, Pa., opposition has sprung up against the enforcement of vaccination. This opposition arises from prejudice, ignorance and resentment against a supposed interference with personal liberty and the dispensations of Divine Providence. The writer, during a professional experience of over forty years, and an official sanitary experience of over thirty years, has vaccinated or personally superintended the vaccination of more than two hundred thousand individuals, and has never known any one to die because he had been vaccinated, but has known thousands to die because they had not been vaccinated and re-vaccinated. While there are no doubt cases where vaccination has been the direct or indirect cause of death, still, they are so rare that compared with the protection given, the objection can not be regarded as valid, and from a general standpoint the refusal to submit to this measure of protection can not be tolerated. Individual rights must be respected, certainly, but it is the right of no man so to use his liberty of action as to endanger the rights and lives of others.

In Illinois, during the epidemic of 1881–1883, the recovery of the vaccinated was 94 per cent. and the mortality 6 per cent.; while of the unvaccinated 51 per cent. recovered and 49 per cent. died. Smallpox proved to be as destructive of life as in any epidemic of the pre-vaccination period wherever its contagion was introduced among the non-vaccinated, the mortality rising in this class to nearly 50 per cent. On the other hand, just in proportion as vaccination *and re-vaccination* had been efficiently performed, that mortality was diminished—falling from a death rate of over forty-four in a hundred attacked who had not been satisfactorily vaccinated, to absolutely no deaths among the few who, having been efficiently vaccinated, were still attacked with the disease, but were again successfully vaccinated after exposure. The duration of the disease, its severity, and its results were found to bear a direct relation to the vaccinal history of the patient; where this was *nil*, there was the longest duration (except where terminated by death), the greatest severity, and the most disastrous sequelæ; where the vaccinal history was good, the disease was mild, often of only a few days' duration and never followed by disfigurement or loss of sight or hearing, or by other disability. It was also found that, after the contagion had obtained a foothold in a community where vaccination had been neglected, no enforcement of sanitary measures, nor isolation of cases, then availed to restrict the epidemic influence or tendency until vaccination and re-vaccination had been made general. It was not until vaccination and re-vaccination became general in this State that the epidemic was stayed.

A recent report of the Philadelphia Municipal Hospital shows that of seventy-eight unvaccinated infants under one year of age admitted while suffering from smallpox, fifty-seven or almost three-fourths, died; while of vaccinated infants of the same age none died. In Leicester, England, during the epidemic of 1893, there were 126 persons who had never been vaccinated, and who caught smallpox, 83 were under 10 years of age, and in 9 of these the dis-

ease was fatal, whereas there was no instance of smallpox occurring in a vaccinated child under 10 years of age; and of the 155 cases of the disease occurring in persons who had been vaccinated, but not re-vaccinated recently enough to save them from varioloid, there were no deaths. The effect of compulsion in the matter of vaccination is forcibly demonstrated by a comparison of three European nations which make it optional—Austria-Hungary, Russia and France — where the number of deaths from smallpox in two recent years ranged between 157 and 583 per million; and as many nations which make it compulsory, Denmark, Sweden and Norway having no deaths at all during either of the years, and the proportion in the German Empire being only 0.8 and 1.8 per million in the two years.

It is undoubtedly the duty of all health officers to secure the vaccination and re-vaccination of every person in the community so far as it is possible.

Medical men and nurses when called upon to attend cases of smallpox, no matter what may have been their previous personal experience, either as regards vaccination or smallpox, should at once be vaccinated as a matter of precaution, both for their own safety and that of the public.

STERILIZING WATER AND MILK IN HERMETICALLY SEALED BOTTLES.

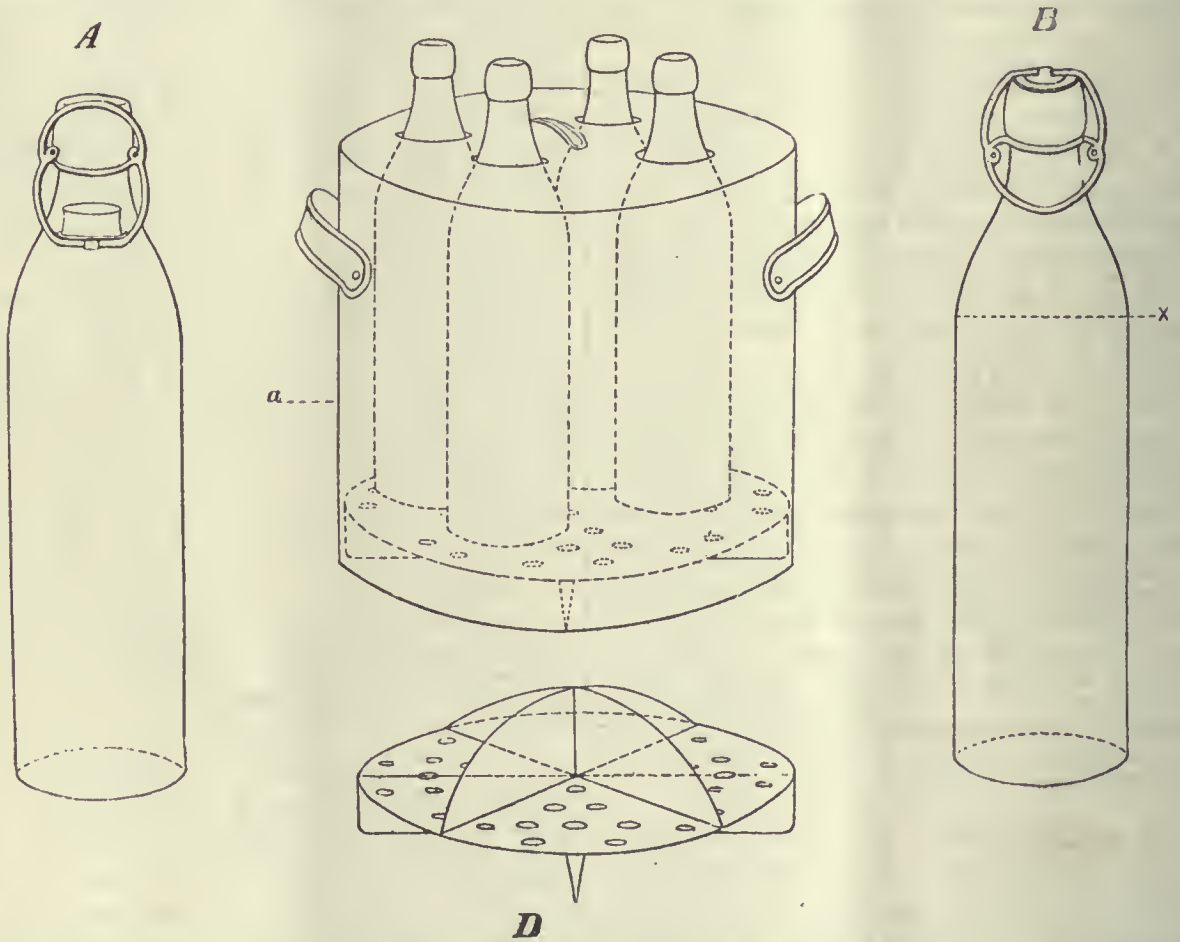
BY W. E. GAMBLE, B.S., M.D.
CHICAGO.

Professor C. A. Cary of Auburn, Ala., while visiting me last summer, called my attention to a sterilizer of water and milk which he had originated. His method is a new one to me, and I think to the rest of the profession; it consists in the use of hermetically sealed bottles.

I have used a simple contrivance which has served me much better than any other sterilizer. I use pint beer bottles with "lightning stoppers." (Fig. A.) They can be obtained of any liquor dealer or grocer.

The bottles are placed in a vessel (Fig. C), a six quart tin bucket is a suitable size for family use, as about six pints of milk or water can be sterilized at a time. The lid of the bucket has six one and one-half inch openings through which the necks of the bottles pass. (Fig. C.)

A loose false bottom rests on the true bottom. (Fig. D.) This is raised one inch from the true bottom, by two strips standing on their edges rising at right angles to each other and soldered to under surfaces of false bottom. This apparatus should not cost more than one dollar.



In using this appliance space must be left to allow room for the expansion of steam, and yet I have been careless as to the amount of space to leave for that purpose without untoward results; however, the space between the bend in the bottle, x, (Fig. B.) and the cork should remain unfilled.

To raise milk to 150 degrees F., not higher than 167 degrees, Professor Cary has by experiment found the following conditions necessary:

Bottles are filled to x, Fig. B, closed and placed in sterilizing vessel; cold water is poured into sterilizing vessel until it rises one-fourth of an inch above false bottom, the sterilizer is then placed over the

fire and heated until water in vessel boils eight to fifteen minutes. As a rule eleven minutes is sufficient. But should water in vessel be heated very rapidly let it boil fifteen minutes. If water comes to a boil slowly, say thirty minutes, allow it to remain eight or ten minutes. The vessel should be taken from stove and covered with dry cloths and allowed to stand for about a half hour.

A temperature of 140 degrees F., which is sufficient to destroy growing and adult germs can be obtained without the scrupulous care mentioned above. A higher degree of heat than 167 degrees is not desirable in sterilizing milk, on account of the chemic disorganization which takes place.

A temperature of 200 to 212 degrees F. is desirable in sterilizing water. This high temperature is easily obtained by filling the sterilizing vessel with cold water as high as the level of the water in the bottles, i. e., x, Fig. B. Cover the perforated lid with cloths; then allow water in vessel to boil from thirty to sixty minutes; after bottles are partially cooled, they can be transferred to ice chest.

Water or milk sterilized in this manner does not taste "flat." They lose none of the absorbed oxygen or nitrogen which makes them palatable. The question is often asked at our table: "What mineral water do you use? It is so palatable."

It is the simplest way to sterilize water and remains air tight until used. The cheapness of the apparatus is another factor in its favor. Professor Cary says that milk can be raised to higher temperature in this way without chemic change than by the open method.

264 S. Halsted Street.

APPENDICITIS; WITH ORIGINAL REPORT AND ANALYSIS OF ONE HUNDRED AND FORTY-ONE HISTORIES AND LAPAROTOMIES FOR THAT DISEASE UNDER PERSONAL OBSERVATION.

Read before the Pan-American Medical Congress.

BY J. B. MURPHY, M.D.

CHICAGO.

PROFESSOR OF SURGERY, AND CLINICAL SURGERY, COLLEGE OF PHYSICIANS AND SURGEONS, CHICAGO; PROFESSOR OF SURGERY, POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL; ATTENDING SURGEON TO COOK COUNTY HOSPITAL; ATTENDING SURGEON TO ALEXIAN BROTHERS' HOSPITAL; CONSULTING SURGEON TO HOSPITAL FOR CRIPPLED CHILDREN, ETC.

(*Continued from page 352*).

Case 87.—Date of operation, April 9, 1893. Operator, Dr. Murphy. Miss W., aged 12 years. Case occurred in practice of Dr. T. J. Conley. Typical attack. Examination: Induration with resonance on percussion, tenderness general. Temperature at time of operation 99 degrees, pulse 96. Operation: Lateral incision into general peritoneal cavity, escape of about one quart of pus. No foreign body to be felt. Appendix was not removed; general suppurative peritonitis. The coils of intestines were covered with a thick layer of fibrin, which, I believe, accounts for the absence of absorption and toxic symptoms; recovery.

Case 88.—Date of operation April 21, 1893. Operator, Dr. Murphy. Mrs. I., aged 24 years. Case occurred in practice of Dr. Heartler. Present illness commenced with sudden general abdominal pain and vomiting; fever. Examination revealed tenderness over appendix; induration. Operation on fourth day after attack. Lateral incision into peritoneal cavity; circumscribed intra-peritoneal abscess. Appendix removed; drainage; recovery. An extensive gangrene of the appendix was present, but no perforation.

Case 89.—Date of operation May 6, 1893. Operator, Dr. Murphy. R. C., aged 13 years; male. Case occurred in practice of Dr. McKee. Patient was sick one month before seen by operator. Onset typical. Examination: Large induration extending over lower half of abdomen; tympanites; tenderness. Patient very much emaciated and cachectic. Temperature normal. Operation: Abdomen opened at most prominent point of induration, which was to the left of the median line; appendix not removed; drainage; recovery. A general suppurative peritonitis was present. The intestines were covered with a layer of fibrin.

Case 90.—Date of operation May 13, 1893. Operator, Dr. Murphy. Alexian Brothers' Hospital. H. S., iron worker, aged 26 years. Patient had first attack about two and one-half years ago, which came on suddenly while riding in a street car; the sudden pain commenced in the right iliac fossa and soon spread over the entire abdomen. Patient has always had more or less tenderness over the appendix since this time, and has had quite a number, twenty-four, similar attacks in intervals of five or six weeks. The attacks consisted of pain in right iliac region, vomiting, nausea, slight chills and fever. Bowels have always been kept regular by use of cathartics. During the attacks there has been a desire to micturate which persisted until attack subsided. This attack has been more severe than any other. Herpes zoster in right iliac region. Operation: Appendicisectomy and drainage. Time, four and one-half minutes. Temperature after the operation remained below 100 degrees. Recovery.

Case 91.—Date of operation June 3, 1893. Operator, Dr. Murphy. Mr. K., aged 22 years. Was operated upon five months previous. Recurrent attack; patient sick five days. Operation: Lateral incision; intra-peritoneal abscess. Appendicisectomy; enteroliths; drainage; recovery. Appendix was perforated and showed local gangrene.

Case 92.—Date of operation June 4, 1893. Operator, Dr. Murphy. C. H., male, aged 28 years. Patient was taken sick May 31, 1893, with moderate pain in abdomen which gradually became worse and localized in lower half. Nausea, vomiting. On the second day pain became localized in the right iliac region and gradually increased. In the evening of the third day he experienced a sudden severe pain accompanied by a sensation as if something had ruptured within the abdominal cavity. Examination: Tenderness, induration and dullness in right inguinal region. Operation: Appendicisectomy. Intra-peritoneal abscess incised; fecal stone escaped with pus. Fecal fistula followed operation which lasted for ten days. Temperature ranged up to 101.5 degrees after operation. Recovery. Subsequent examination showed protrusion of abdominal wall; a small hernia.

Case 93.—Date of operation June 5, 1893. Operator, Dr. Murphy. Alexian Brothers' Hospital. P. H., aged 30 years, male. About six years previous to operation, patient was attacked with severe pain in the abdomen, followed by nausea and vomiting. The pain was very intense for five hours, then the fever set in. He has had a dozen similar attacks since; felt drowsy and sleepy the day before each attack. Had chills and fever each time. Examination: Induration, increased local tenderness; tympanites. Operation sixth day after onset. Lateral incision; general peritoneal cavity opened; appendix adherent, removed; fecal stone. Drainage; recovery. For twelve days after operation temperature remained below 100 degrees. On the 16th rose to 103 degrees, but fell to normal shortly.

Case 94.—Date of operation June 16, 1893. Operator, Dr. Murphy. F., aged 18 years; male, Woodstock, Ill. Case occurred in the practice of Dr. L. C. Waters. Sickness began five days ago with a typical attack. Examination: Induration, local tenderness, temperature 99.5 degrees at the time of operation. Operation: Lateral incision, intra-peritoneal abscess; appendix adherent, removed. Drainage; recovery. Pathologic conditions: Fecal stone, local gangrene of appendix, perforation.

Case 95.—Date of operation June 16, 1893. Operator, Dr. Murphy. Th. M. G., aged 13 years, male. Case occurred in the practice of Dr. P. H. Conley. Illness began June 9 with sudden pain and tenderness in the abdomen; this was soon followed by vomiting and fever. This condition lasted until time of operation. General tympanites, circumscribed induration in right iliac region, local tenderness; temperature before operation 102 degrees F., pulse 110. Operation: Lateral incision, large intra-peritoneal abscess; appendicisectomy; no foreign body; appendix ulcerated, not perforated. Recovery.

Case 96.—Date of operation July 8, 1893. Operator, Dr. Murphy. W. F., aged 16 years, male. Case occurred in the practice of Dr. W. H. Bouton. Commenced with sudden attack of pain in right iliac region, extending all over

abdomen. Fever, slight induration, which was more pronounced under anesthesia, and under the influence of the latter, appendix could be outlined. In attempting appendicisectomy the ligature, which was tied around the base of the appendix cut through; no further attempt at ligation was made; intra-peritoneal abscess at seat of operation drained. Appendix slightly adherent, adhesions easily separated, owing to a complete gangrenous condition of appendix, which also accounted for the ease with which silk tore through in attempting ligation. Appendix not perforated. Fecal fistula on third day, which closed in thirteen days. Temperature subsided immediately after operation; recovery.

Case 97.—Date of operation July 12, 1893. Operator, Dr. Murphy. Female, 26 years of age. Patient had a typical attack on the 9th of July, 1893, three days before operation; had pain, tenderness, vomiting, temperature and slight induration. Operation: Incision and removal of appendix; about an ounce of pus escaped, which was of a very offensive nature. Drainage; recovery. The appendix showed a perforation on its side near the base. No foreign body. Cicatrix showing seat of previous perforation. This case was operated upon May 1, 1892. Simple drainage of abscess.

Case 98.—Date of operation July 13, 1893. Operator, Dr. Murphy. Case occurred in practice of Dr. Hoelscher. Mrs. N., aged 24 years. Present illness began five days before operation, with severe vomiting and slight pain in right iliac region. The vomiting persisted up to the time of the operation regardless of treatment. *No induration, no local tenderness, no temperature,* pulse 120, anxious expression. Operation: Lateral incision; general peritoneal cavity opened; no peritonitis. Cecum drawn over towards uterus, and firmly held there by the appendix, which was adherent to the uterus and produced intestinal obstruction. Appendix removed; twenty-four hours drainage; rapid recovery. Appendix very much elongated; contained no pus; ecchymotic at the end where it was adherent to the uterus.

This case is very instructive as the symptoms corresponded exactly with the pathologic conditions, and did not suggest acute appendicitis, but intestinal obstruction, and is the only case in which there was an absence of pus or cicatrices showing the previous existence of pathologic conditions.

Case 99.—Date of operation July 18, 1893. Operator, Dr. Murphy. I. D., aged 56 years, male. Alexian Brothers' Hospital. Four weeks ago patient experienced a sudden attack of severe pain in right half of abdomen. Progress of disease characterized by a dull, heavy, aching pain in right groin and hip. Patient jaundiced since commencement of attack. Stools normal; difficulty in micturition; great tenderness on palpation over right iliac region; induration. Patient is unable to completely extend right thigh. Operation: Drainage of a large circumscribed abscess containing about three pints of pus. Appendix situated behind cecum; not removed. Recovery.

Case 100.—Date of operation July 23, 1893. Operator, Dr. Murphy. Mrs. C., aged 25 years. Patient was attacked on July 19 with severe pain all over abdomen; the pain was more severe over right side. It was accompanied with nausea and vomiting, which continued up to time of operation. Temperature July 19, 103 degrees; pulse 96; 20th, the same; 23d, 10 P.M., temperature 102 degrees, pulse 90. Abdomen enormously distended, dull over lower half. Operation: Lateral incision · a quart of fluid of sero-purulent nature escaped from the general peritoneal cavity, which covered the bowels to a great extent. Drainage; recovery.

Case 101.—Date of operation July 24, 1893. Operator, Dr. Murphy. T. S., aged 25 years; male. Alexian Brothers' Hospital. Twelve recurrent attacks during the past two and one-half years, lasting from three to ten days. Appendicisectomy in immediate stage; drainage; recovery. Appendix extensively adherent; mucous membrane ecchymotic. A marked stricture in middle of appendix, resulting from cicatricial contraction of former ulcerations.

Case 102.—Date of operation July 25, 1893. Operator, Dr. Murphy. J. H., aged 14 years; male. Case occurred in practice of Dr. Quine. Patient had a typical attack of appendicitis two weeks previous to the operation accompanied by fever, local tenderness, induration. The temperature subsided on the tenth day to normal, and remained so for three days when it gradually began to increase and by the thirteenth day reached 102 degrees. The area of induration increased rapidly and was somewhat tender. On the fourteenth day there was a large induration in right iliac region. Pulse and temperature both good. Operation: Lateral incision directly into an abscess. General peritoneal cavity not opened. There was no gush of pus when the abscess was opened as is usually the case, showing an absence of tension in the abscess. There was considerable fresh blood in the abscess cavity. Two fecal stones. No effort made to locate or remove the appendix. Drained. After recovering from the anesthetic the patient complained of intense abdominal pain and vomited persistently. Tympanites rapidly set in; patient collapsed, and died fourteen hours after the operation. The course of this case after the operation indicated that the abscess ruptured between the coils of the intestine and the pus emptied into the peritoneal cavity before the incision was made, explaining the reason why pus did not escape when abscess was opened, as well as the hemorrhage into the abscess. This opening was not detected at the time of operation, nor could it be seen that the pus escaped into the peritoneal cavity, as that was not opened beyond the line of adhesion. This also accounts for the collapse of the patient, for the symptoms were those of a fatal sapremia.

Case 103.—Date of operation July 26, 1893. Operator, Dr. Murphy. Case occurred in practice of Dr. Rohr. F. O., aged 43 years; male. A week before operation patient was suddenly attacked with pain in right iliac region, followed by vomiting, nausea and tympanites. Pain and tenderness all over abdomen, especially in lower half. Temperature 99½ degrees at time of operation; pulse 100.

Operation: Lateral incision. General peritoneal cavity opened. A general dry septic peritonitis present. Appendix situated behind cecum, very difficult to locate; the adhesions around the same were loosened and the appendix removed. The appendix was large, gangrenous and showed perforation through which a fecal stone projected. Iodoform gauze drainage.

I desire to call your attention especially to the fact that this patient was not collapsed at the time of operation, that his temperature was 99½ degrees, and his pulse 90, notwithstanding that he had a general septic peritonitis involving all of the abdominal viscera, and had it for some time previous to operation. Death twenty-four hours after operation.

Case 104.—Date of operation July 27, 1893. Operator, Dr. Murphy. M. O. C., aged 22 years; male. Patient suddenly attacked with pain in region of right kidney. Extreme tenderness over appendix extending high up above crest of ilium and up to margin of ribs behind, but not in front. No tympanites until the morning of operation. At 4 A.M., on day of operation patient felt the abscess rupture; he described a sudden bursting in his abdomen, followed by great pain and depression. Operation four days after attack. Incision; appendix difficult to locate; an abscess cavity was found and the appendix formed a part of its wall; it was gangrenous, had ruptured and located behind cecum. Two fecal stones were removed. There was present a dry septic peritonitis, the result of a rupture of the abscess the morning of the operation. The intestines were denuded of their endothelium and flakes of pus and some sero-purulent fluid rested between the coils. The operation was refused forty-eight hours preceding the rupture of the abscess, and the delay sacrificed the patient's life. Death thirty-six hours after operation from sapremia.

Case 105.—Date of operation July 28, 1893. Operator, Dr. Murphy. T., aged 18 years; male. Case occurred in practice of Dr. Berry. Patient complained of abdominal pain and vomiting on the night of the 24th. Called the doctor on the evening of the 25th, temperature at this time was 103 degrees; pulse 120. July 26, A.M., temperature 102 degrees, tympanites increased, pain diminished. July 27, P.M., temperature 101 degrees, pulse 100, very little pain. July 28, temperature 101 degrees, pulse 100. Operation: Lateral incision, circumscribed abscess, general peritoneal cavity not opened. Fecal stone escaped with pus. Appendix not removed. Drainage; recovery.

Case 106.—Date of operation July 28, 1893. Cook County Hospital. Operators, Drs. Murphy and La Count, House Surgeon. J. M., aged 32 years; male. Patient's trouble began twelve days before entrance to hospital, with severe pains in abdomen, accompanied by vomiting. Later on a dull aching pain developed in the right iliac fossa which was persistent; vomiting continued a little every day until day of operation. Could keep nothing on stomach. Bowels moved daily. No chills; no fever. Later on an induration became visible in right iliac region. Operation: Usual incision: general peritoneal cavity not opened; escape of eight to ten ounces of purulent, fecal smelling pus. Digital

examination of pus cavity detected sacculated condition which was broken down and made into single cavity. Packed with gauze. Upper part of wound sutured with silk. Patient made rapid recovery.

Case 107.—Date of operation July 31, 1893. Operator, Dr. Murphy. A. J., aged 22 years; female. Case occurred in practice of Dr. P. H. Conley. Patient had a previous attack about a year before operation, but not as severe as present one. Sudden attack July 24, 1893; pain in right iliac region, nausea, vomiting, tympanites, induration, dulness on percussion. Operation: Lateral incision; extensive suppurative peritonitis extending into Douglas pouch and up behind the cecum and colon to the kidney; drainage; recovery.

Case 108.—Date of operation Aug. 5, 1893. Operator, Dr. Murphy. R. W., aged 18 years; male. Alexian Brothers' Hospital. Patient had had previous attack June 25, 1892, for which he was operated; simple drainage (see Case 55). Had a second attack in August, 1892, which only lasted a few days. The present attack (third) began with sudden pain in the abdomen caused by straining himself while working at his lathe. The pain and vomiting were so severe that he was compelled to go to bed. At first, pain was located in right iliac region, but in a few hours it extended over the entire abdomen. Examination: The temperature reached 102 degrees, fifteen hours after onset, and he presented himself for operation sixteen hours later. Temperature 99.7 degrees; pulse 80. Tympanitic, general abdominal tenderness; dulness on superficial percussion over lower half of abdomen. Operation: Lateral incision; general peritoneal cavity opened; found full of a thin purulent fluid. The wall of an old circumscribed abscess was seen in which was detected a small opening. On opening this wall extensively half of the appendix was found to protrude into it. The appendix was very much enlarged, thickened, and at its tip an enterolith protruded. This condition had existed for a long time, as could be seen from the pathologic condition of the opening. Although the peritoneum of the intestine and omentum was congested, it still retained its gloss, and was not eroded of its endothelium. Appendix ligated, amputated. Recovery.

Remarks.—The cause of the peritonitis in this case was the rupture of a circumscribed abscess that had existed since the previous August, or the time of the second attack. The wall of the abscess was very firm. It will be noted that while a general suppurative peritonitis was present at the time of the operation, and had existed for thirty-one hours, the patient was not collapsed; his temperature was only 99.7 degrees, and his pulse 80.

Case 109.—Date of operation Aug. 8, 1893. Operator, Dr. Murphy. J. J. D., aged 23 years; male. Present attack began July 28 with sudden pain in the region of the umbilicus, which rapidly localized itself in the right iliac region. Marked induration over appendix. Temperature 102 degrees day before the operation. Has vomited several times since the onset of attack. Temperature on morning of operation 100 degrees. Operation: Lateral incision, general peritoneal cavity opened; circumscribed abscess found which contained half a pint of pus. Appendix amputated. Drainage; recovery. Pathologic conditions: Appendix enlarged, local gangrene with perforation. No foreign body.

(*To be continued.*)

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

The Third Annual Meeting Held in Chicago, Sept. 12, 13 and 14, 1893.

Augustin H. Goelet, M.D., President.

(*Continued from page 356*).

FURTHER STUDY OF ELECTRO-ANESTHESIA AND FREQUENCY OF INDUCTION VIBRATION.

The following illustrations will show what class of cases I have found benefited by the anesthetic current, where other forms of electricity failed:

Miss F., age 25, a strong, handsome woman, had been for several years a victim to supra-orbital neuralgia of an aggravated type. During the crises she was in the habit of taking large quantities of drugs to quell pain, principally such derivatives as antipyrin, acetanilid, etc., until stomach action was greatly impaired and heart rhythm completely broken up. Fortunately, she had avoided opium, having sense enough to know that remedy to be worse than disease.

Examination of heart gave 110 beats, with a confused mixture of sounds from which nothing normal could be extracted, considerable dyspnea, aversion to food and general hyperesthesia of nerves. She came to my rooms in a violent attack, pain being too severe to admit careful testing of nerve impulse rate, and faradism employed with the rheotome sounding C major. In fifteen minutes the painful spot was anesthetic, all suffering gone and patient happy.

Tests were then made to ascertain normal speed of nerve force, with a result of .0500, corresponding to a tone very slightly above major C, closely enough for practical work.

Miss F. is now in her third week of daily twenty minute sittings, and the neuralgia has only recurred once, in a much modified form. I propose to continue the treatment a month longer and then suspend for a month, when, if there is no trouble, I shall dismiss the case.

Miss S., age 48, nurse. Pure nervous temperament, slender, sallow. For years Miss S. has been under more or less medical treatment for uterine displacement and catarrh. In 1882, I operated upon her electrolytically for rectal stricture, during the course of which she had formed opium habit, which required four months to cure. Pain during defecation and afterwards was so severe that any habit was as nothing compared to relief at the time.

From that time until two months ago I lost sight of her, when she returned with a beginning of the old sensations of uneasy rectum, difficult, spindling stools and general nervousness, together with intense pain in right flank, extending down the front of leg on that side. Rectal examination showed no stricture, but a mass of hemorrhoidal veins nearly occluding the canal, some protruding through the sphincter, contraction of which probably caused the pain. The muscle was stretched and veins obliterated by fine electric needles, but the neuralgia persisted, recurring at irregular intervals and aggravated by patient's nervous hyperesthesia.

She was placed upon Mariani's Thè Cocoa, a preparation which I have found almost magical in relief of nervous debility, and soon grew better of her restless uneasiness. Still the sharp pain kept up.

Some two weeks ago, on a stormy day when leisure was plenty, I spent several hours measuring her nerve rate, using both medians, both sciatics and the long thoracic trunks. There was remarkable unanimity of speed, a dead point being reached by C a little sharp in each nerve, which is about normal.

She was therefore placed under faradic treatment with rheotome singing sharp C, one electrode, a broad sponge, at the sacrum, the other at the motor point of adductor muscles just inside the knee. A sharp thrill followed circuit closure which went to the toes, and after ten minutes a certain sense of numbness in the thigh, but not much relief to pain. I suspected that neuritis had begun, but sent her away to wait three days. Upon her return she reported improvement, and the same applications were continued until the present, with steady gain, but slow. In this case it was impossible to produce anesthesia extending far enough to be of value; yet the curious sense of numbness in the foot which follows circuit closure each sitting, indicates clearly that it is not the fault of the remedy that she is not cured; it is but the ignorance of the operator.

I do not know why pain should subside under the electrode alone, while every experiment I have made shows that an entire nerve trunk, when intercalated, is traversed and physiologically affected by the electric energy employed.

Some of you may recall that during the discussion which followed the reading of my paper before you last year, Dr. Herdman remarked that purely mechanical explanation was sufficient to account for the action of the singing rheotome, and Dr. Num said that there is undoubtedly a percussion taking place through the cells of the body when a muscle contracts under the influence of induced electricity.

These later studies seem to indicate that the keen perception of these gentlemen was right, and that mechanical vibration may enter into diagnosis and treatment of nervous disease more than before. Yet, bearing in mind my own therapeutic failures when percussion without electricity was employed, I believe that the latter is a part of effect, not the former.

And I desire to thank these gentlemen who have taken the trouble to provide themselves with a singing rheotome, in order to confirm my experiments, or to fail, as I have often done myself. Let us hope the former.

The following communication on

ALTERNATING CURRENTS IN ELECTRO-THERAPY

by DR. GEORGES GAUTIER and J. LARAT of Paris, France, was then read in abstract by DR. LAPTHORN SMITH.

Preamble.—In reviewing the works, treatises and monographs relating to medical electricity that have appeared during the last fifteen years, we find that so far from remaining stationary, electro-therapy has extended its domain, multiplied and defined its applications, but using only forms of electricity already known: Franklinism, faradization, galvanism.

During the last twenty months, however, an altogether new way has been opened to electro-therapeutists. It is a method not yet used in medicine; alternating currents with high and low potential, with medium and extra rapid frequency.

It is well first to define these terms before proceeding to show what physiologic or clinical results have been already obtained by the use of these currents or what future one has to expect from the use of them.

The common faradic current, furnished by a Ruhmkorff's coil, connected with a vibrator is in the strict sense of the word an alternating current, since, if we consider one of the rheophores, this is alternately positive and negative; but it has defects or rather qualities which distinguish it essentially from the current which we mean when we use the word *alternating*. Let us consider the nature and action of the current which is produced during an oscillation of the vibrator. At the moment that the hammer by its electricity or weight comes in contact with the block, the circuit is closed and we have the inducing current which develops by induction a secondary current (induced) in the opposite direction (it is understood that we leave out the question of extra currents which do not belong here); but this momentary current has sufficed to render the soft iron a magnet, the hammer is attracted by the electro-magnet and oscillates in the space, to come in contact with the soft iron. At the moment when it leaves the contact, we get the induced current in the same direction. During this oscillation there is no induced current, and as the duration of this oscillation is very long in proportion to the time of contact the time lost is considerable.

The faradic current then possesses the property of being very rapid and consequently of attaining its maximum very rapidly. It is a current essentially intermittent and a simple graphic representation explains the nature and form of the electro-faradic wave.

The current which we propose to study under the name of alternating, produced by alternating dynamos, (Siemens, Patin-Ferranti, etc.,) attains its maximum very gradually and no time is lost. It can be represented graphically by a curved line, somewhat undulated on account of phenomena of self-induction which the scope of this article does not permit us to analyze.

On the one hand, then, the *time* during which the current acts is more considerable on account of no time being lost; on the other hand, its *potential* can be born, higher; the irritation of the sensitive nervous system being, as demonstrated by Prof D'Arsonval, a factor in the variation of the fall of potential (e=fct). In a word the alternating form permits the use of a greater quantity of electricity: (Q=It).

The "current sinusoidal" differs from the preceding only in that the undulation is perfectly regular without any notch. From this short description it is evident that the use of the alternating current is a thing altogether new from the point of view of electro-therapy. Also the physiologic properties of these currents are themselves new and full of interest.

Physiologic effects of the alternating current at low frequency.—The alternating current of low frequency, i.e., presenting a maximum of 20,000 per minute, has been first studied by Prof. D'Arsonval, who in his laboratory of the College of France has measured on the human subject and on animals, on the one hand the variations in the absorption of oxygen, in the production of carbonic acid; and on the other hand the modifications in the production of heat, by his calorimetric method. *Without any muscular contraction*, without any pain, it is shown that is possible to increase instantaneously by more than a quarter the activity of the gaseous respiratory changes.

It seemed probable that this powerful action on the gaseous changes would be accompanied by a correlative increase in the excrementitious products and we have in fact shown by several hundred analyses of urine that the amount of urea is always increased in a variable proportion and that it can reach double the amount eliminated before the experiment.

Besides, certain substances eliminated by the urine seem to be transformed. Thus, to cite an example, the urine no longer has the characteristic odor after the ingestion of asparagus. We are continuing our researches on this subject.

When not proceeding experimentally, there seems to be no difficulty in producing muscular contractions; on the contrary, general faradization by means of a bath modifies itself the nutritive changes, augmenting the production of heat.

The other physiologic effects are on the one hand partially those of the faradic current, on the other partly those of the continued current. Like the latter, the alternating current produces a chemic action, weaker, it is true, but very distinct; like the faradic it determines vaso-motor changes and muscular contractions.

THERAPEUTIC EFFECTS.

1. *General.*—In order to obtain the maximum effect by applying the current to the whole surface of the body we have adopted water as a conductor. The patient is plunged into a bath of lukewarm water containing starch, the starch rendering the water opaque for purpose of decency. The bath-tub may be of marble or porcelain, or of iron carefully enameled, or of wood. A series of nickel-plates (nickel to avoid oxidation) can be arranged around the inside of the tub, hung by conducting cables, isolated by rubber and provided with hooks. A system of movable plates permits the localization of the maximal action of the current and is preferable to fixed plates, difficult to cleanse. The carbon plates which we used at first are too heavy and break the threads that support them very easily.

We speak here only of the therapeutic results which we consider absolutely determined. We are studying others, as the application of electric douches to hysterical subjects, but our experiments are of too recent a date to make them worthy of mention here. Since the principal effect of the alternating current is increased action in the nutritional changes, it is rational to think that a retardation in this process, would be amenable to this treatment; and in fact arthritic subjects generally do well on it. Rheumatism in its subacute and chronic form, especially the rheumatic neurites are rapidly improved by the alternative baths.

It is, therefore, diseases of this order, characterized by a retardation in the nutritive process that have been the first to be the object of our researches. We have already made known in a certain number of previous publications the favorable results of our method of treatment. We have called attention to the good effects obtained in obesity, in chronic gouty subjects and in dyspeptics. Our attention has also been called to chronic skin diseases and especially to eczema. Eighteen cases of eczema of long standing have been rapidly improved and all had resisted numerous treatments. In a case of vitiligo we have been able to obtain a marked diminution in the dyschromatic lesion after fifty baths.

The treatment of sciatica has given results to which no other medication can pretend: fifteen cases, fourteen successful. In infantile paralysis, in pseudo-hypertrophic paralysis the improvement has been more rapid than by other electrical treatment.

Thanks to the enlargement of our electro-therapeutic laboratory, we have been able to extend the field of our researches during the past year. We have been able to treat about a hundred patients, children and adults, with anemia, lymphatism, scrofula, adenitis and rickets. We shall publish later interesting observations on the results which we have obtained. Dr. Segretti of Rome, who considers rickets as a functional derangement of the trophic nervous system which always manifests itself by the lack of calcareous salts in the osseous system, as chlorosis always manifests itself by the lack of iron in the blood, has been recommending for some time past the use of hydro-electric baths in this disease and has obtained the best results from this medication.

2. *Local Effects.*—One of the first aims of our researches was to take all the advantage possible of the use of the alternating current in gynecology. In our article read in 1891 at the Academy of Science of Paris, we called attention to the great advantages to be derived from the use of this form of electricity in the diseases of women, promising to give later the indications. Pure results obtained can be formulated as follows:

1. The alternating current is always contra-indicated when the hemorrhagic symptom is marked. It is useful in amenorrhea and dysmenorrhea.

2. In inflammations of the uterus, in fibromata, the continuous action is preferable to the alternating.

3. In inflammations of the ovaries, tubes and pelvic tissue, the alternating current has rendered such services that the other medications must give place to it.

4. When properly applied it is the treatment par excellence for pain.

These statements need explanation which will be given in extenso later.

We have already mentioned the applications of the alternating current in a large number of affections such as: Muscular atrophy, dilatation of the stomach, neuritis, etc. We add summarily that we now recommend it in constipation, hemorrhoids, engorgements of the prostate and certain forms of cystitis. In torticollis and lumbago, one sitting is usually sufficient to bring about a permanent relief.

Finally, the alternating current increases indisputably the domain of electro-therapy; as a local agent it enjoys therapeutic properties worthy the attention of electricians; its application is painless and dosage easy. Lastly in its action on those nutritive derangements which constitute the diatheses, the source of numerous chronic diseases, the alternating current is one of the greatest acquisitions of therapeutics.

Production and Transformation of the Alternating Current.—The electric energy which we use is produced by the machines of Ferranti. It is known that Ferranti has modified the Siemens' machine, which is the type of the machines with alternating currents, whose coil does not contain iron, by giving to this latter a special form presenting many advantages. This coil is constructed by winding a long copper band in a wavy curve, a sort of circular zigzag. Several of these can be superimposed, separated from each other by vegetable fiber. The two extremities of the metal end in two metallic collars on which rest friction plates (rubbing surfaces). The current engendered by the Ferranti machine comes into our cellar where it is transformed, the strength being reduced from 2,400 volts to about 110 volts. Thus transformed it is easy, by the aid of apparatus for reduction of potential of different types, to utilize it either locally or in baths, beginning with a minimum and increasing gradually to a dose that is beneficial and can be borne.

The apparatus for reducing potential consists of liquid resistances or of solenoids in the interiors of which move cores of soft iron which have the property of reducing considerably the alternating current.

The graduation of the current is obtained by means of a coil of very fine thread which can be passed more or less over another coil which is directly connected with the potential reducer.

Alternating Current with High Frequency.—We only recall to memory the well-known experiments of Tesla and E. Thomson, not dwelling on them. After the demonstration of Tesla at Paris and the conferences of Prof. d'Arsonval, having obtained sufficient knowledge of these currents, we tried for a year and a half to render them utilizable in medicine.

The method used for demonstration and in laboratories is lacking in one essential quality for current usage; it is not practical. As well known, we use piles or accumulators as the source of the current, as a transformer we use Ruhmkorff's coil. Now, on the one hand, the source is exhausted too rapidly, hence the necessity of constant and troublesome changes; on the other hand, the vibrator of the coil soon gets out of order. These defects in apparatus have permitted us to pursue our experiments only intermittently.

The solution for us who had at our disposal the alternating current of the city, was to use this. Unfortunately all the transformers which we applied to this current either did not give sufficient voltage or became heated after a few minutes trial. It is only after all these trials that we, with the aid of the firm Ducretel, have succeeded in finding a coil which works perfectly. This coil gives a transformation of 1-100. Its inductor is composed of three layers of copper thread of 22-10=531 turns; its length=48 cm.; weight of thread = 2.900 kilos, (6 lbs), its resistance = O, 57 ohm. Its induced coil is composed of fifty layers of copper thread of 21-100 = 53.000 turns. Weight of copper thread = 5.200 kilos; its resistance = 8,600 ohms.

The current which we have under 100 volts traverses at first a series of coils of resistance, arrives at the transforming coil, whence, like d'Arsonval, we let it pass through a battery of Leyden bottles to end either in a final transformer plunged into oil or in a solenoid in the center of which the patient is placed.

Our experiment is too recently completed to have made its application to patients possible as yet.

From an experimental point of view, we have been able to reproduce all the experiments of M. d'Arsonval; to light a lamp held in the hand, the current passing through the human body without being perceived, provided that the conductor fixed to the wires attached to the lamp is of sufficient surface; to prove the local anesthesia which is produced by this imperceptible current and the accompanying vaso-motor dilatation, etc. When the person is touched at one of the poles, the other being in connection with the ground, a short spark and local heat is observed.

In the solenoid when the vibrations are extra rapid and with a spark from the condensers of three millimeters at least and very bright, a sort of general vibration is felt. Under these conditions a lamp held simply between the hands is lighted. We propose next to try the treatment on hysterical subjects, with the coöperation of M. Gilles.

(*To be continued.*)

NECROLOGY.

G. V. Ewing, M.D. of Ogden, Colo.

Butler E. Turrill, M.D. February 24.

G. Wyman, M.D. of Topeka, Kan., March 3.

W. C. A. Banes, M.D., New Albany, Ind., March 6.

H. S. Stimson, M.D., of Athens, Ohio, February 25.

R. H. Johnson, M.D. of Atlanta, Ga., February 19.

H. W. Simmons, M.D. of Conneaut, Ohio, February 19.

C. Loftus Martin, M.D. of Janesville, Wis., February 24.

H. K. Porter, M.D. of Duluth, Minn., March 2, aged 30 years.

Dr. Stevens of Windsor, Ohio, February 9, aged 90 years.

C. L. Martin, M.D. of Janesville, Wis., February 23.

James Shook, M.D. of Chillicothe, Ohio, February 18.

W. B. Lapham, M.D. at Togus, Maine, February 21, aged 66 years.

G. W. Norton, M.D. of Earlville, Ill., died March 2, aged 80 years.

Henry B. Mathiot, M.D. of Smithfield, Pa., died Feb. 24, 1894, after a brief illness in the 79th year of his age.

De Casper Vitzhum, M.D., formerly of Moline, Ill., died February 24, aged 71.

J. C. James, M.D. of Bradford, Pa., February 25, aged 42. He was a graduate of Bellevue Medical College, New York.

J. C. Snavely, M.D., ex-President of the Lancaster County Medical Society, and ex-member of the Legislature, at Manheim, Pa., February 26, aged 75.

E. E. Hutchins, M.D. of Clyde, Ohio, was killed by the explosion of a new self-lighting kerosene lamp, February 28. He was a graduate of Jefferson Medical College, and was 48 years of age.

N. G. Thompson, M.D. died suddenly of heart disease at Coatesville, Pa., March 1. He was one of the best known physicians in Chester County, and was a graduate of the Philadelphia Medical College, class of 1852, and for forty years successfully practiced his profession at Brandywine Manor. Tiring of country life two years ago he removed to Coatesville, where he erected a handsome residence.

Charles H. Bressler, M.D. died at York, Pa., February 21, aged about 72 years. He was stricken with apoplexy about ten days before and had been slowly sinking ever since. Dr. Bressler was always prominent in Republican politics, having been a candidate several times for Congress in this district, and also was several times a candidate for Congressman-at-large. He was appointed by Governor Curtin Sheriff, to fill the vacancy caused by the death of Sheriff

Wolfe. He was a member at times of the City Council. He was a consistent member of the Methodist Church, and also of the Masonic fraternity.

Bernard Segnitz, M.D. of New York died February 23. Dr. Segnitz was 84 years old and was one of the best known German physicians in this country. Among his writings are "The Physician and His Work," "Mortality Versus Progress" and "Fashion and Medicine." He recently invented an inhaler for use in diseases of the respiratory organs, and was engaged in perfecting it when the stroke occurred that caused his death. He had been House Physician to Baron Mayer, Carl von Rothschild and Prince Isenberg Birstein. His fame in Germany grew rapidly, until he took a stand against the Government and became a political refugee. Dr. Segnitz was a strong advocate of the prohibition of marriage to consumptives.

Joel Seaverns, M.D. of Roxbury, Mass., died March 1. Joel Seaverns was born at Jamaica Plains, N. Y., May 25, 1828. At the age of 18, he graduated from the Roxbury Latin school. Leaving college in 1850, he spent one year in teaching, when he entered the Harvard Medical School, from which he graduated in 1854. Commencing private practice then at Jamaica Plains, he continued there until May 25, 1862, when he entered the Army as Acting Assistant Surgeon, holding this position until Dec. 4, 1863, when he was appointed Assistant Surgeon of U. S. Volunteers, and promoted March 30, 1864, to the rank of Surgeon. In 1865 he was made Brevet Lieutenant-Colonel for faithful and meritorious service. His first two commissions were signed by Abraham Lincoln and his last by Andrew Johnson. During his army life he was Surgeon-in-Charge of hospital ship, the *New World* and of steamer *De Molay*. Before and after that time he was Post Surgeon at Fort Warren in Boston harbor.

Michael Jean Baptiste Messemer, M.D. died at Mentone, France, February 21. He was born in New York City of German and French parents, forty-five years ago. As a boy he attended a Roman Catholic parochial school, and before he was of age he graduated from St. Francis Xavier's College. Later he studied law for two years, but he decided not to be a lawyer, and began the study of medicine. In 1885, he was graduated from the College of Physicians and Surgeons. Before he had gained much of a practice at his office in Second Avenue, he began to take an active part in politics, and in 1881 he was appointed a deputy coroner by Coroner Merkle. He was elected coroner before the expiration of Merkle's term of office to succeed him, and he was reëlected in 1887 and in 1890. He was large and stout, with ruddy face, blue eyes and large flowing sidewhiskers. His congenial habits made him popular with his Tammany supporters. He was a bachelor and belonged to many clubs. He also held memberships in several medical societies, and in the Liederkranz and Arion Societies, and was physician to the outdoor poor department of Mt. Sinai Hospital. His last term of office as coroner did not expire until Dec. 31, 1893, but he performed no duties connected with his office for many months previous to that time.

Paul Diday, M.D.—In M. Diday, who died a short time ago at the age of 83, Lyons loses one of its leading surgeons and the medical profession in France one of its most distinguished members. Born at Bourg in 1812, he studied medicine in Paris, where he was a favorite pupil of Dupuytren, and afterward of Ricord. Soon after taking his degree he became surgeon to the Antiquaille Hospital at Lyons, a post which he continued to fill for many years. It was largely owing to his influence that this institution was transformed from a mere special hospital into a school of scientific syphilography, where much work of the greatest value was done by Diday himself and his pupils.

Early in his career Diday was appointed General Secretary of the Lyons Société de Médecine. Into the duties of this office, which he held for thirty-four years, he threw himself with the greatest enthusiasm. He was one of the founders and the first editor of the *Lyon Médical*, and for twenty-five years he was a constant contributor to its pages. He also wrote largely, though anonymously, in the *Gazette Médicale de Paris*. His literary activity was extraordinary, and continued to the end, a paper from his pen on the expediency of subjecting a primipara, presumed to be syphilitic, to mercurial treatment having appeared in the *Lyon Médical* on December 24.

Of his books the best known are the *Traité de la Syphilis des Nouveau-nés et des Enfants à la Mamelle* (1854), *Histoire de la Syphilis* (1863), *Therapeutique des Maladies Venériennes* (1876) and *Pratique des Maladies Venériennes* (1886). At his best Diday was a brilliant writer, incisive, epigrammatic and exquisitely lucid.

Diday had suffered for some time from an affection of the bladder, for which he was successfully operated on (a fact which he commemorated in verse only a few weeks ago). His death appears to have been due to a tumor of the chest wall which was discovered quite recently; it proved fatal by extension into the pleural cavity. He was buried on January 11 in the presence of an immense concourse of his professional brethren and friends, including all the academic and official notabilities of Lyons.—*British Medical Journal.*

The Numbers of the Profession.—The Medical Directory for 1894, now published, gives the following as the numbers of the medical profession for the year 1894: In London, 5,590; in the provinces, including Wales, 14,897; in Scotland, 3,107; in Ireland, 2,485; registered practitioners resident abroad, 3,209; Naval, Military and Indian Medical Services (excluding those which appear also in other lists), 2,426; "too late" list—additional names, 58. The total number of practitioners in the "Directory" for 1894 is 31,772, as against 30,759 in the previous year. This shows an increase in the twelve months of 1,013. The obituary list, which seems to be wonderfully complete, gives the deaths as 639. The above figures give one medical practitioner in London for every 750 of the population; in the provinces, one in 1,650; in Scotland, one in 1,300; in Ireland, one in 1,900; and in the United Kingdom generally, one in 1,450.—*The Lancet.*

The Statistics of the Medical Profession in Austria.—According to the official statistics published recently there were in Austria, 6,057 physicians holding the diploma of M.D. in the year 1891, and 6,565 in 1892. In the former year there were also 1,588 surgeons of the old surgical schools, but in 1892 this number had been reduced by death to 1,582. The total number of medical practitioners in Austria in 1892 was 8,097 against 7,645 in 1891. The figures for 1893 have not yet been published.

The Medical Profession in Italy.—According to the *Annuario Statistico Italiano* for 1892, just issued under the authority of the General Direction of Statistics at Rome, the total number of medical practitioners in Italy in that year was 19,120, being a proportion of 6.2 per 10,000 of population. The ratio varied in different parts of the Kingdom from 11.1 per 10,000 in sixty-nine chief towns of provinces to 5.3 in the rural communes. The following figures show the numbers of practitioners and the proportion to population per 10,000 in several of the principal cities: Rome, 510 (11.6); Naples, 1,506 (28.3); Milan, 374 (8.8); Turin, 292 (8.8); Palermo, 225 (8.2); Genoa, 255 (12.0); Florence, 258 (13.1); Bologna, 144 (10.2); Venice, 127 (8.5); and Catania, 114 (9.5). Between 1878 and 1892 the absolute number of doctors increased by rather more than 1,000 (19,120 as against 18,044), but the relative number decreased from 6.5 to 6.2 per 10,000 of population.—*British Medical Journal.*

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All members of the Association should send their Annual Dues to the Treasurer, RICHARD J. DUNGLISON, M.D., Lock Box 1274, Philadelphia, Pa.

SATURDAY, MARCH 17, 1894.

MEDICAL EDUCATION IN THE UNITED STATES.

Report of the Illinois State Board of Health on Medical Education and the Regulation of the Practice of Medicine in the United States and Canada. Revised to Jan. 1, 1894.

In an address delivered before the Section on Pedagogy of the Pan-American Medical Congress,[1] by J. COLLINS WARREN, M.D., President of the Section, the speaker took occasion to pay the following tribute to the Illinois State Board of Health: "The reports on medical education by the Illinois Board, I do not hesitate to say, have exerted a more powerful influence on the movement in education than any other publication which our medical literature has produced."

The latest volume of this series, recently completed for the Board by its former Secretary, DR. F. W. REILLY, presents a collection of facts and figures which seem to fully justify DR. WARREN'S recognition of the value of these publications. The reports were projected in 1880 by DR. JOHN H. RAUCH, member, President and Secretary of the Board from its organization in 1877 until 1891, and the eight volumes prepared by him are a monument to his ability, sagacity and untiring zeal in the cause of higher medical education. A brief summary of what has been accomplished by the Board, directly through its own action and mediately through the influence of these publications, can not fail to be of interest:

The Illinois Medical Practice Act of 1877 empowers the State Board of Health to determine the "good standing" of any medical college whose diploma may be presented to the Board as the basis for the license or certificate authorizing the practice of medicine and surgery in the State. The necessity of some standard by which to determine this point was soon apparent, and the Board early in its existence addressed itself to an investigation of the methods and character of instruction in vogue among the medical schools of the period—the requirements and conditions upon which they conferred the degree of Doctor of Medicine upon their students.

Of the 57 institutions in the United States whose diplomas had been presented to the Board prior to October, 1880, and which thus became the legitimate subjects of this investigation, there were 43 regular schools, 10 homeopathic, 3 eclectic and 1 physiomedical. It was found that qualifications for matriculation were exacted by only 15 of the total 57 schools —14 regular and 1 homeopathic; in the remaining 42 schools no evidence of preliminary education was required before students were permitted to enter the lecture room. By 30 of the 43 regular schools, 8 of the 10 homeopathic and the 3 eclectic schools the degree of M.D. was conferred after two years of study and attendance upon two annual courses of lectures of an average duration of 22.6 weeks—included in the two years of study. Only 13 regular and 2 homeopathic schools required three annual courses of lectures and three full years of study before graduation. More than half the regular schools had lecture courses averaging less than 20 weeks duration.

After a careful study of the facts disclosed by this investigation the Board framed a schedule of requirements for medical colleges which desired to be recognized as in "good standing." This schedule prescribed certain matriculation qualifications; the branches of medical science to be included in the curriculum of instruction; the duration and number of lecture terms; the percentage of attendance upon lectures, recitations and quizzes; the amount of dissection to be performed and of attendance upon clinical and hospital instruction; the period of study; the character of the corps of instructors and of the teaching equipment. This schedule was promulgated in 1880, and the Board announced that, after the sessions of 1882–83, it would recognize no college as in "good standing" that did not conform to these requirements.

The following table shows to what extent this schedule was complied with during the next three years:

Requirements of Colleges in 1880 and 1883	Regular.	Homeopathic.	Eclectic.	Percentages of Totals.
Colleges listed by the Illinois Board in 1880	43	10	3	
Colleges listed by the Illinois Board in 1883	91	13	5	
Colleges exacting matriculation qualifications in 1880	14	1	0	26.8
Colleges exacting matriculation qualifications in 1883	61	11	7	66.4
Colleges requiring attendance on three courses of lectures in 1880	13	2	0	26.8
Colleges requiring attendance on three courses of lectures in 1883*	16	2	0	15.1
Colleges requiring three full years of study in 1880	13	2	0	26.8
Colleges requiring three full years of study in 1883	68	2	1	59.6
	Weeks.			Gen. Aver.
Average duration of lecture terms in 1880	22.8	22.7	22.0	22.5
" " " " in 1883	24.4	23.7	20.9	23.0

[1] Journal Amer. Med. Ass'n, Sept. 9, 1893.

* In the following year, 1884, these figures changed to 79 out of 87

Following are the figures for 1893:

Total number of existing medical colleges in the United States January, 1894. 136
Number exacting matriculation qualifications 131
Or 96.3 per cent. of the whole number.

All of the 19 homeopathic colleges, the 8 eclectic and 104 out of 109 regular colleges now require some sort of preliminary education before admitting students to the lecture classes. The five exceptions are the Medical College of Georgia, the Atlanta (Ga.) Medical College, the Southern Medical College of Atlanta, the North Carolina Medical College (newly organized) and the University of Virginia Medical Department.

The proportion of schools requiring attendance upon three or more courses of lectures before graduation has also risen from 26.8 per cent. in 1880 to 96.3 per cent. in 1893. There are now 11 regular schools and 1 homeopathic that require attendance upon four annual courses of lectures; and 45 regular, 17 homeopathic and 6 eclectic schools require four or more full years of study before graduation. No school required four courses of lectures or more than three years of study in 1880 or in 1883.

The only schools which still graduate upon two courses of lectures are the Atlanta Medical College, the Baltimore Medical College, the University of Virginia, the Medical College of Virginia and the Georgia College of Eclectic Medicine and Surgery. The Georgia schools still adhere to the system of repetitional lectures; in all other cases, with the exception of one newly-organized homeopathic school, the lectures are graded.

In 1880 the average duration of the lecture term was a fraction over 22 weeks; of the 56 colleges examined, 38 had terms of less than 24 weeks and 18 had terms of 24 weeks or more. During the current sessions, 1893–94, the average duration of the lecture term is 28.19 weeks; only 10 schools have terms of six months or more.

In 1884, immediately following the enforcement of the Illinois Board's schedule of minimum requirements, there was an extinction of 4 regular and 3 eclectic, and the number of regular schools did not again reach that of 1883 until 1888. The eclectic schools have steadily diminished in number from 15 in 1883 to 8 in 1893, while the homeopathic schools have increased from 10 in 1882 to 19 in 1893.

Missouri and Ohio are the most prolific States in the Union as to medical-diploma issuing institutions. Each has 16 existing medical colleges—Missouri, 12 regular, 2 homeopathic, 1 eclectic and 1 miscellaneous; Ohio, 11 regular, 3 homeopathic, 1 eclectic and 1 miscellaneous. Since 1840 Missouri has had 38 schools—25 regular, 9 homeopathic, 2 eclectic and 2 miscellaneous; since 1819 Ohio has had 42–20 regular, 6 homeopathic, 7 eclectic, 9 miscellaneous.

regular schools, 13 homeopathic and 7 eclectic, which required attendance upon three courses of lectures before graduation, and the percentage of schools requiring attendance upon three courses of lectures rose from 26.8 in 1880 to 88.3 in 1884.

The fluctuations in the numbers of regular, homeopathic and eclectic medical colleges since 1882 are shown in the following:

Years.	Schools.			Totals.
	Regular.	Homeopathic.	Eclectic.	
1882	78	10	10	98
1883	91	13	15	119
1884	87	13	12	112
1885	89	13	11	113
1886	90	13	10	113
1888*	91	14	10	115
1889	101	14	9	124
1890	111	13	9	133
1893†	109	19	8	136
Net gains	31	9		38
Net losses			2	

THE MICROBIC DISEASES OF THE NERVOUS SYSTEM.

The microbic or, to speak more exactly, the infectious diseases of the nervous system at present recognized are very few in number and this recognition is, except in the case of hydrophobia, entirely a matter of recent date. Even now, if we except tetanus, rabies, diphtheritic paralysis, cerebro-spinal meningitis, certain forms of neuritis, one or two tropical disorders and the tubercular affections, a spinal infectious etiology is not generally admitted. Perhaps we ought to add tabes and paresis to this list in view of their probable specific origin, and there are one or two affections such as LANDRY'S paralysis that stand as yet in an undetermined position in this respect. Apart from these forms any infectious nature of diseases of the nervous system is seldom admitted.

It is a question, however, whether we may not, in the near future, have to enlarge our ideas to some extent, and put poliomyelitis, syringomyelia, and possibly gliomas in general into this category. It is just probable that even some of the disseminated scleroses and paralysis agitans may be found to have special germs that cause their appearance and may have to be classed with the microbic diseases. Suppurative inflammations wherever they occur, whether within the cranium or elsewhere within the nervous system, are in all probability attended with the usual organisms of suppuration, and it seems probable from certain observations that have been reported, that other microörganisms than those usually found may sometimes be their exciting causes. The nervous system, protected and resistant as it is, presents constantly points of weakness which the roving microbes in the system may attack.

It is a rather significant fact as regards the future that tetanus, the one purely nervous disorder that is a typical bacillary disease, has only been recognized as such within the past few years. It is not altogether improbable that discoveries as striking as that of NICOLAER'S bacillus will yet be made in the pathology of diseases of the nervous system; the

* No report published in 1887. † No reports published in 1891–92.

possibilities are not exhausted, indeed, we are probably only at the threshold of the investigation.

Setting aside the necessity of specific microbes, and admitting only a toxine action we find that the latter plays a most important part in these disorders. The number of nervous structural diseases that follow acute infectious fevers is in evidence, to say nothing of the known effects of such agents as alcohol, lead, mercury, and other mineral and organic poisons. The nerve centers are influenced from every part of an organism, which has been truly called a laboratory of poisons, and every failure in their elimination through disturbances of function reacts at once upon the brain and cord. The recent discoveries in regard to the thyroid gland are in evidence here, to say nothing of the long known effects of disorders of the organs of excretion. The part played by toxines in the etiology of these diseases is one of the most important if not actually the predominant element of their causation.

IMMIGRATION STATISTICS.

The United States Commissioner of Immigration at New York in a recent report states that there were 352,885 immigrants received into the United States during the year ended Dec. 31, 1893.

The comparative figures of the six leading nationalities are as follows; Italy, 69,074; Germany, 55,981; Russia, 37,100; Ireland, 30,236; Sweden, 28,965; Austria, 28,872. The number of illiterate, those who could neither read nor write, was 52,919, and of these Italy furnished by far the largest number with Russia a close second, while only 530 out of the nearly 29,000 Swedish immigrants did not have the rudiments of an education.

Thus we have more than fifty thousand illiterates added to our population who are practically certain, sooner or later, to become inmates of our charitable institutions, and nearly the whole number will be added to the already large class of persons seeking employment. In ordinary times this mass of humanity could be taken care of with comparative ease but at this time, when there is much suffering and too little work, it is not doubtful that a temporary suspension of immigration would be in the common interest of intending immigrants, not less than in the interest of those already among us.

REGARDING THE PRACTICE OF MEDICINE IN KENTUCKY.

The Kentucky State Board of Health has succeeded in removing nearly all the opposition to the new law regulating the practice of medicine in that State. The courts have sustained the validity of the Act, and the Legislature which has just adjourned was in thorough sympathy with the manner in which it was enforced. One of the results is that now they do not have an advertising or traveling doctor in the State. The COPELAND advertisers that infest so many of the States, made a strong fight, and were the last to surrender and leave the State. Kentucky is to be congratulated.

AN EXPLANATION.

The *Pittsburg Medical Review* in an ill-natured commentary on Dr. COHEN'S letter lately published in this JOURNAL, refers to our foot-note that the letter was "published by order of the Trustees." That foot-note simply meant that as the article was an attack on the Board it was only printed by their own order.

CORRESPONDENCE.

"The Code."

To the Editor:—Doubtless there are many good men in favor of revision, but I believe each of these good men will admit that they have been benefited by adhering to the Code, and I believe that most of these good men will say that no man was ever injured in reputation by adhering to the Code. Now if it is true that the Code will benefit all of its adherents and at the same time injure none of them, it ought not to be changed in any way. Ever so small a change in a *perfect* instrument may make it useless. When a patient is doing well on any special treatment, the prudent doctor will hesitate before making a change. The same principle applies in all things. *Sometimes* a change makes the patient improve faster, but this is the exception, not the rule.

The strongest reason outside the above, why the Code should not be changed is, that the enemies of the ASSOCIATION and regular medicine are clamoring for a change. Editors of medical journals who interleave their pages with such nostrums as "Cactina Pillets," "Vinola Cream," "Malto Yerbine," "Sing," "Chionia," "Sanmetto," Terraline," "Uric Solvent," and the host of nondescript compounds, have no use for a code. They claim that the "Golden Rule" is a sufficient code. So it is, but if a man will knowingly violate the present Code every day of his life, is there any hope of that man's adhering to the Golden Rule? The Golden Rule without penalties for its violation or rewards for its fulfillment would be a dead letter.

The irregulars have made war upon regular medicine for the past century. They have told the people that regular medicine was a "humbug" and none but the "reformed" men were doctors. The men who never use "calamy" (calomel) or other minerals; the men who claim that venesection is a crime and who give little doses of pleasant medicines were the ones to employ. Not satisfied with telling what they knew was false, they now have the "cheek" to ask regulars to change their rules of action (their Code), that they (the little pill men) may unite with us. What for? If we are humbugs and commit crime by our methods of practice why do they want to join our ranks? Why do they not keep themselves "unspotted from the world?" They call us all manner of mean names and then ask us to meet them in consultation, and because we refuse they are furious and want us to change this part of our Code. Shall we do it? I say, no. We have prospered wonderfully under the present Code, we are decidedly "on top" in every branch of medicine. Why should we step down and out and let our enemies dictate what is best for us? If they are so "tony"

and can do so much better by their patrons than we can, why do they not take the advice of the Kentucky doctor, who advised them to roost where they belonged? Surely we do not need them nor their suggestions. There has been a hue and cry for *union, union, union.* Union of what? Regular and irregular medicine? "No sir-ree." These are incompatible. They might make a *mixture* but no solution. The mixture would kill the ASSOCIATION so dead that the buzzards would not eat. The next meeting of the ASSOCIATION will be in a place where it will be costly for many to attend, and there will be a strong effort made to revise the Code. It is to be hoped that every member of the Society who can will be present and do all he can to prevent any legislation that has for its object the union of regular medicine with quacks. Write up your objections and send them to the JOURNAL. Show the rascals up in their proper colors, and instead of making a change in the Code whereby these high-toned gentlemen can be admitted, make it more difficult for them to enter. Let it be universally understood that no vendor of nostrums need apply. I am sorry I can not paint them in more natural colors.

Very respectfully submitted,

W. P. HOWLE, M.D.

Tscherning's New Theory of Accommodation.

PARIS, Feb. 22, 1894.

Dear Doctor:—I have been told by Dr. Javal and others that Tscherning's theory of accommodation has not yet been published in the English language, inasmuch as it has just appeared for the first time in the *Archives de Physiologie*, published in Paris. I therefore thought that it might be of interest to the medical profession in America. I shall not undertake to give a complete exposition of this theory, but only a brief resumé of its most important features. I will say, however, that the conclusions to which Dr. Tscherning has arrived have been the outgrowth of a vast deal of very careful study in the laboratory of Javal in the Sorbonne, and from my limited personal acquaintance with him I would judge that his inquiries have been conducted in the proper spirit of scientific investigation. His numerous experiments on the lower animals and his accurate observations on the human eye by the aid of the aberroscope and ophthalmophakométer (specially devised by him) have furnished him with the data upon which he has founded his new theory of accommodation in opposition to the well-known theory of Helmholtz which has existed so long. According to the latter the increased refractive power of the eye during accommodation depends upon a relaxation of the suspensory ligament which allows the lens to assume a more spherical form, and that this relaxation of the suspensory ligament is brought about by the contraction of the ciliary muscle. Now Tscherning's view is quite different from this. He holds that *one* action of the ciliary muscle is to render *more tense* the suspensory ligament, thus giving to the lens by an active and not by a passive process a form which is responsible for the augmentation of its refractive power. Tscherning's theory seems to explain not only the mechanism of refraction in the human eye but also is applicable to the various modifications of refraction observed in the lower animals. For example, in the case of fishes the crystalline lens is perfectly spherical in a state of repose and hence could not become more spherical during accommodation, which would be required by the theory of Helmholtz if his theory is universal.

The following is a resumé of Tscherning's conclusions:

1. During accommodation the summit of the anterior surface of the lens remains almost stationary.

2. The anterior surface of the lens during repose resembles the surface of a sphere, but during accommodation it approaches that of an hyperboloid of revolution.

3. During accommodation the peripheral parts of the anterior surface of the lens are flattened, and the central parts become more convex.

4. During accommodation the refractive power of the anterior surface increases throughout, but especially towards the middle.

5. The spherical aberration diminishes during accommodation on account of the flattening of the peripheral portions.

6. The central part of the lens increases in thickness on account of the flattened peripheral portions.

7. The rate of curvature of the posterior surface of lens increases a little at the center.

8. The lens recedes a little, at least in certain cases.

9. The pupil contracts. The contraction commences a little after the change in the lens. During this contraction even the most peripheral parts of the iris take on a centripetal movement which does not occur after a simple incidence of light.

10. The plane of the iris changes. The central parts and the peripheral parts remain in the same plane, but the intermediate parts undergo a slight depression.

11. The ciliary processes advance slightly towards the axis of the eye.

12. The choroid is drawn forward.

13. The tension in the anterior chamber is diminished.

Without attempting to decide as to the value of these observations, I simply present them as being, in my opinion, worthy of consideration. Very sincerely,

JNO. MCREYNOLDS, B.S., M.D.

To Dr. R. H. CHILTON, Dallas, Texas.
Dallas, Texas.

Not Persons but Principles; Not Words but Actions.

PHILADELPHIA, Feb. 20, 1894.

To the Editor:—Your correspondent, "Constancy," objects to the language in which I criticised the action of the JOURNAL in disobeying the order of the ASSOCIATION and the provision of the Code prohibitory of nostrum advertising. I am unaware of anything "unprofessional" in my remarks,—but, be that as it may, if my letter is worth noticing at all, the question is not as to the literary merit of my style, but as to the justness of my contention; not as to my words but as to the Trustees' acts. While I am perfectly willing to be criticised, I do not desire to obtrude, or have others obtrude, my personality into what should be a discussion of principles. Let us avoid side issues of all kinds and stick to the main point.

The facts are undisputed, that: 1, the Code and, by resolution at Detroit, the ASSOCIATION, have prohibited the advertising of nostrums (i.e., secret preparations) in the JOURNAL of the ASSOCIATION; and 2, the JOURNAL, notwithstanding this repeated prohibition, does publish such advertisements. I would therefore respectfully ask "Constancy" for a direct answer to the following question: "Is the JOURNAL justified in publishing advertisements of nostrums?"

Yours truly, S. SOLIS-COHEN, M.D.

The Advertising War.

CHICAGO, March 6, 1894.

To the Editor:—I write simply to indorse in their *entirety* the contents of Dr. Solomon Solis-Cohen's letter published in the issue of Jan. 20, 1894, of the JOURNAL, with reference to *nostrum* advertising. Unlike "Constancy," I see *nothing* undignified about Dr. Cohen's letter. It is precisely the

attitude of "Constancy," that is, one of timidity as to the statement of the bare truth, that is threatening the overthrow of medical ethics. There is no doubt that a lukewarm consideration of the subject makes the enemies of medical ethics still bolder.

My individual opinion on the matter at issue has already been expressed elsewhere, and now I only desire to be placed on record as indorsing every sentence of Dr. Cohen's letter.

Very truly yours, DAVID CERNA, M.D.

LETTER FROM EUROPE.

Major Girard, Surgeon U. S. Army, to Professor Senn.

No. III.

HEIDELBERG—PROFESSOR CZERNY — STRASSBURG — PROFESSOR LUECKE—PROFESSOR VON RECKLINGHAUSEN—BALE—PROFESSOR SOCIN.

HEIDELBERG, Feb. 14, 1894.

Dear Dr. Senn:—The purpose of my visit to Heidelberg was to see Professor Czerny and observe the management of his clinic. If I am a little disappointed I must ascribe the major cause to the miserable weather and lack of expected news from home, both of which will to a certain degree affect even a stoic. Perhaps, to the taste of the distinguished Professor, I was not a big enough personality, and when on inquiry, if I was a Surgeon-General, I replied in the negative I thought I perceived a shade of difference in manner, all of which may be a result of my mental depression and goes to show that, even with the most honest intentions, reports of clinics depend to a certain degree on the mental condition of the writer.

Professor Czerny is one of the foremost of German surgeons, and is spoken of as the successor of the lamented Billroth. He is said by his assistants to have deprecated any intention of leaving Heidelberg, a view ardently indorsed by those who well know that with him one of Heidelberg's brightest stars will leave; but it stands to reason that he can not refuse one of the greatest chairs in Germany (including Austria among the German-speaking universities). The present operating room of the clinic is very antiquated and will be replaced in May by one in course of construction, of which anon.

While the cases presented in the clinic were not of the brilliant kind, they still conveyed valuable lessons. A woman with a synovitis of the knee joint of a metastatic nature, in consequence of an attack of quinsy, had been aspirated some weeks ago and allowed at once to return to her home. Result: Severe inflammation. The lesson conveyed was that an aspiration should not be considered a slight operation and absolute immediate rest in bed must be insisted on.

A case of non-venereal multiple papillomata of penis and scrotum was operated on by one of the assistants with scissors and the Paquelin knife, while the Professor proceeded to operate on the case of the day. A boy of about 18 had been suffering with tubercular perforation of the squamous portion of the temporal bone and of the mastoid process, both of which were in communication with the external meatus. Gradually cerebral symptoms set in, leading to the suspicion of pyemic infection and thrombosis of the sigmoid sinus. With chisel and gouge the canal of the sinus was laid open, without revealing the expected thrombus. The operator then dissected down to the internal jugular and found no evidence of thrombus there. He was certain of the presence of a pyemic focus somewhere, but deemed ligation of the jugular or further investigation unjustifiable and the prognosis more grave on account of his inability to locate the trouble.

The wards of the surgical clinic are built on the two story pavilion system, eight in number, each abutting on a central corridor, and accommodating about forty public patients and some private ones. The new operating amphitheater is at the end of this corridor and has on its lower floor rooms for the surgical policlinic, and on the second one, beside the large operating room, the office of the Professor and several rooms for special examinations such as ophthalmoscopy, cystoscopy, etc. The operating room faces north and, as far as illumination is concerned, combines the advantages of Würzburg and Göttingen.

STRASSBURG.

I visited Prof. Luecke at his clinic.[1] The buildings pertaining to the clinical departments of the University have all been built, with the exception of the internal clinic, since the Franco-Prussian war, and are beautiful structures and in every way equal to those heretofore described in other places. Asepsis is carried out so scrupulously in Luecke's clinic that visiting physicians, who in the area are more or less in contact with the operating paraphernalia, are invested with operating aprons and sleeves, a good precaution no doubt. Ether has been introduced in this clinic for several months. Fearlessness of the results has, in my opinion, led to the practice of too profound an anesthesia, approaching asphyxia, and sooner or later fatal cases will be reported which will unjustly be attributed to ether—it should be abuse of ether.

The first case, enucleation of a large lipoma of the occipital region (large orange), calls for no special remark. Prof. Luecke operates rapidly and nervously and his assistants have no easy task.

The next case was a suicidal attempt of an actor—three pistol wounds inflicted with a small pistol on right temple and forehead. Two bullets were found flattened against the temporal bone, without injury to the osseous tissues (!) The third entered the right supra-orbital arch, under which it passed to the right frontal sinus, which it entered. The opening was enlarged with the chisel, but the bullet was not found. The usual packing with iodoform gauze terminated the operation. A Nélaton probe, which would have found special application in this case for location of the bullet among the osseous tissues, had unfortunately been mislaid and was not available.

The third case was a tubercular abscess over the ninth rib of the right side. After incision and evacuation a small focus was discovered, which was cut out with the spoon. I remarked, that Prof. Senn did not believe the spoon sufficient to prevent recurrence, upon which (possibly it might have been done without it), subperiosteal resection of the rib through sound tissues with the bone forceps was immediately performed. Prof. Luecke agreed entirely with your views on the subject.

To-day I witnessed an operation for removal of a goitre, which by compression of the trachea threatened the life of the patient. The tumor being almost solid was not suitable for Socin's enucleation, and it was removed *in toto*. The only point of importance was that the anterior superior thyroid artery was enormously distended, and being incised caused an extraordinary hemorrhage, which left the patient pulseless without alarming the operator, who as sole measure of restoration ordered hypodermic injection by hydrostatic pressure of the 3 per cent. solution of sodii chlorid with perfectly satisfactory results, since the patient was restored to consciousness by the time the various ligatures had been applied.

I learned various points of Prof. Luecke's methods in conversation, when he very kindly made the rounds of his clinic

[1 The press dispatches announce the death of Prof. Luecke February 20. The clinic here reported by Major Girard must have been one of his last.—EDITOR.]

with me. The same obtains here as at other similar institutions in Germany, i. e., the director of the clinic, meaning the professor of surgery, selects the cases for admission. The patients generally pay two marks (50 cents) a day and in exceptional cases only are admitted gratis.

Prof. Luecke rarely resorts to extra capsular resection of the head of the femur for cavities. He cuts the upper rim of the acetabulum from an interior incision and either removes the head inside the capsule with the chisel or only the diseased parts with the sharp spoon. I saw several cases which made an excellent recovery with free motion of the joint.

He exhibited to me his modification of Glück's method in pseudarthrosis and arthrodesis. Glück drives a hollow ivory nail with lateral perforations into the medullary canal of each of the bones to be united and connects them with a screw peg. Luecke, finding that this peg produced an impassable bridge for bone formation, does not attempt bringing the two hollow pegs forcibly together, relying for this on the elasticity of the muscles and only prevents lateral displacement by the introduction of a central peg, like the pencil in a pencil holder. I saw a foot which had been operated on in this manner a few days ago for paralytic varus, the joint surfaces having first been denuded. It appeared already fairly solid.

A little boy with gastrostomy with valvular opening was cheerfully perambulating the ward. Three children had been successfully operated on in this manner during the year and in all three cases lye was the irritant which brought about the stenosis of the esophagus. Dilatation from below was not attempted.

I met in Strassburg in the Pathological Institute Professor von Recklinghausen, who was first assistant to Virchow, when I made my studies there in 1859 and 1860. His pathological establishment is on a large basis, the collection very rich and, no doubt, would offer a splendid school for Americans, who desire engaging in that particular study.

My next stop was in Bâle, where my principal purpose was to visit the clinic of Professor A. Socin, who had been my teacher thirty years ago. He is rated among the prominent surgeons of Europe. I found him as fresh as ever, a painstaking, thorough clinical teacher and a fearless, but careful operator. His clinic was in proportion to the number of students in the University very well attended, better than any of those I had visited heretofore. His plan is to operate as little as possible during the hours of clinic, but to present the cases and submit them to an exhaustive clinical analysis, during which the "consulting staff" have no easy time, but are induced into methods of careful reasoning and defense of views.

Among the cases I witnessed in the clinic I will mention a hydrocele combined with irreducible inguinal hernia. The canal was opened by an incision extended down to the scrotum, the hernia liberated and reduced into the peritoneal cavity, without attempt at radical cure. The hydrocele was treated according to Volkmann's method, incision, ablation of part of the walls of the sac, suture of sac with external integument, application of a solution of carbolic acid, and then again suture of the scrotal wound. I relate the disposition of the hernia as a matter of observation.

The next case was a recurrent carcinoma of orbit, necessitating the removal of the margin with chisel and gouge. The wound was packed with iodoform gauze after sterilization of whatever skin covering was left. No attempt at primary transplantation.

A "cold" abscess at the lower angle of the scapula was the next case, patient being a young man of about 20, existence of the swelling having been noticed about four years and no tubercular localization having been found on palpation in scapula or ribs; simple evacuation by means of trocar was deemed the safest treatment. In this connection Prof. Socin related a remarkable case of his practice, which has not yet been published.

A young man presented himself with a swelling in the groin, with impulse on cough, having all the other appearances of a hernia. He had had some disease of the spine some years before, leading to scoliosis. Prof. Socin diagnosed a cold abscess, incised in the groin and evacuated several pints of pus with pieces of the dorsal vertebræ.

The next case, a return of carcinoma in upper maxilla was treated by incision. Injury to the internal maxillary leading to great hemorrhage, which was arrested with a Langenbeck serre-fines, left in the wound, led to abandonment of further procedure.

A metastatic sarcoma of the size of a child's head in the groin was another case presented. It was the result of osteo-sarcoma of the great toe, which was amputated about two years ago. The Professor drew attention to his method of making a semi-plantar, semi-internal flap, thus bringing the cicatrix where it would be free from any pressure.

The inguinal sarcoma was operated on, not with the hope of cure or prolonging life, but to alleviate the annoyance to the patient resulting from probable extensive ulceration and the danger from hemorrhage.

An operation for radical cure of hernia presented some novel features. Prof. Socin makes a *horizontal* incision about two and one-half inches long about the level of the inguinal ring. He claims that being in a line with the natural folds, it heals more readily and gives sufficient room. The sac is passed through an incision in the transverse fascia, to which it is stitched with catgut. Four catgut sutures fasten it then in the inguinal canal. No attempt is made to approximate the pillars of the ring, which accounts for returns of the hernia, he is said to have. Owing to considerable handling of the tissues holding the spermatic cord, he introduced a glass drainage tube in the lower part of the canal. The natural opening is accurately closed with continued suture. He uses for that purpose a very fine aluminium wire, as flexible as silk, the proper alloy of which he determined after numerous experiments. He has not published yet his results.

I saw among other cases operated on, a nephrectomy for tubercular kidney, in which a considerable part of the peritoneum had been removed, an excision of the tongue for carcinoma with preliminary tracheotomy, and numerous other major operations, showing, that while Prof. Socin deprecates the excessive use of the knife, owing to the impunity conferred by Lister's discovery, he is well in the advance in the boldness of his operations. In his clinic he predicted that in the next generation a reaction would set in and that many surgical diseases, which at this time led to operations, will be cured by internal medication, and that internal medicine, which has been thrown into the shade by surgery during this age of new operations, will recover its place.

Sincerely yours, A. Girard.

ASSOCIATION NEWS.

The Association Train will leave Chicago Monday, May 28, via Santa Fe R. R., Rio-Grande Western, and Southern Pacific, for San Francisco via Denver, Colorado Springs, Leadville, Manitou, Glenwood Springs, Salt Lake, Ogden, Truckee and Sacramento. Returning, after the meeting, the train will pass through Sacramento and Northern California to Portland, thence east by way of the Northern Pacific R. R. to St. Paul. C. M. & St.P. R. St. Paul to Chicago. A stop over at Yellowstone National Park for those who desire it has been arranged, and it has been understood that at several places on the journey there will be

short stops. President Hibberd's party in a special car join the train at Chicago, and the St. Louis party are expected to join at Kansas City. From all points east and south, concentrating on this train should be effected at Chicago and St. Louis. For all information relating to this train, fares, etc., address G. M. Connell, 212 Clark st., Chicago, or any agent of Santa Fe line in other cities. Rates promised are the lowest excursion rates at time of departure.

Hotel Rates.—The following hotels, centrally situated and convenient to the place of meeting, have quoted special rates for members and their families, which will apply during the entire stay of the guests, who should, upon registering, signify that they are in attendance upon the meeting of the Association.

The rates quoted are for single persons, the variation depending upon the size, situation and appurtenances of the rooms, as single, en suite, with private bath, etc. Special arrangements will be made for families, or parties, on timely notice.

Some of the hotels entertain upon the American plan only, some upon the European plan only, and some upon either plan to suit guests.

Palace Hotel (headquarters) American plan (rooms and board) $3.50 to $5.50 per day; European plan (rooms only) $1.50 to $3.50.

Baldwin Hotel, American plan $3.50 to $5 per day; European plan $1 to $3 per day.

California Hotel, American plan $3.50 and up per day; European plan $1.50 and up per day.

Lick House, American plan $2.50 and up per day; European plan $1 and up per day.

Russ House, American plan $2 to $3.50 per day; European plan .50 to $2.00 per day.

Occidental Hotel, American plan only, $2.50 and up per day.

Hotel Pleasanton, American plan only, $2.50 to $5 per day.

Grand Hotel (connected with the Palace by a glass enclosed bridge across New Montgomery Street), European plan only, $1 to $2 per day.

In addition, there are many other hotels, boarding houses, lodging houses and restaurants contiguous to the place of meeting where one can be made happy and comfortable at less cost.

Post Office Section K is located in the Palace Hotel, on the office floor, adjacent to the registration room, where members can receive all mail matter by having it so addressed.

R. H. Plummer, Chairman.

San Francisco, March 4, 1894.

Section on State Medicine, American Medical Association It is proposed that diphtheria shall be the prominent subject of discussion at the coming session of this Section, to be held June 5, in San Francisco. Original work is desired, and all members of the Association interested in preventive medicine are invited to participate in the discussion. Papers on any subject relating to public health or preventive medicine will be welcome. Kindly notify, as soon as convenient, by sending title and outline of paper to

Chas. H. Shepard, Secretary.

81 Columbia Heights, Brooklyn, N. Y.

Section on Surgery and Anatomy, American Medical Association, San Francisco meeting, June 5–8, 1894. It is proposed to devote a portion of the time of this Section to the systematic consideration of a few selected subjects, upon which papers, each not occupying more than ten minutes will be read. It is hoped that speakers discussing these papers will confine their remarks to brief addresses of five minutes' length. The topics and papers to be so presented are as follows:

1.—Malignant Growths.

The Pathology of Malignant Growths; E. Laplace, Philadelphia, Pa.

A Critique of the Sporozoan Theory of Malignant Neoplasms from a Micro-technical Standpoint; A. P. Ohlmacher, Chicago, Ill.

Clinical Recognition of Malignancy in Tumors; C. A. Wheaton, St. Paul, Minn.; Henry W. Coe, Portland, Oregon.

The Necessity of Early Surgical Interference in Malignant Tumors; R. A. McLean, San Francisco, Cal.

The Value of Caustics in Malignant Growths; John Parmenter, Buffalo, N. Y.

The Radical Cure of Malignant Tumors by Operation; J. H. Wythe, Oakland, Cal.

The Value of Inoculations with Septic or Toxic Agents in the Treatment of Malignant Neoplasms; John A. Wyeth, New York, N. Y.

2.—Tubercular Disease of Joints.

Early Symptoms and Diagnosis of Tubercular Joint Disease; Emmet Rixford, San Francisco, Cal.; A. B. Judson, New York, N. Y.

Conservative Treatment of Tubercular Joints; R. H. Sayre, New York, N. Y.; Harry M. Sherman, San Francisco, Cal.; James E. Thompson, Galveston, Texas.

Operative Treatment of Tubercular Joints; Robert W. Lovett, Boston, Mass.

Treatment of Tubercular Joints by Injections of Iodoform; N. Senn, Chicago.

Treatment of Tubercular Joints by Injections of Corrosive Sublimate; R. H. Plummer, San Francisco, Cal.

3.—Hernia.

The Causation and Prevention of Hernia; James T. Jelks, Hot Springs, Arkansas; C. M. Richter, San Francisco, Cal.

The Management of Reducible Hernia; Emory Lanphear, Kansas City, Mo.; C. M. Fenn, San Diego, Cal.

The Treatment of Irreducible Hernia; James B. Eagleson, Seattle, Washington.

The Treatment of Strangulated Hernia; Joseph Ransohoff, Cincinnati, Ohio.

The Radical Cure of Hernia; W. E. S. Davis, Birmingham, Ala.; H. O. Marcy, Boston, Mass.

4.—Hemorrhoids, Fistule, and Fissure.

The Pathology and Symptomology of Hemorrhoids, Anal Fistule, and Anal Fissure; J. M. Matthews, Louisville, Ky.; David Powell, Marysville, Cal.

Treatment of Hemorrhoids; H. M. Bishop, Los Angeles, Cal.; Charles B. Kelsey, New York, N. Y.

Treatment of Anal Fistule; J. McF. Gaston, Atlanta, Ga.; G. B. Somers, San Francisco, Cal.

Treatment of Anal Fissure; Thomas W. Huntington, Sacramento, Cal.; Lewis H. Adler, Jr., Philadelphia, Pa.

5.—Fractures.

Treatment of Fractures of the Lower End of the Humerus; Oscar H. Allis, Philadelphia, Pa.

Treatment of Fractures of the Lower End of the Radius; P. T. Conner, Cincinnati, Ohio; C. L. Bower, Philadelphia, Pa.

Treatment of Fractures of the Neck of the Femur; Bedford Brown, Alexandria, Virginia.

Treatment of Gunshot Fractures; George A. Goodfellow, Tucson, Arizona.

Treatment of Fractures of the Shaft of the Femur; Llewellyn Eliot, Washington, D. C.

Treatment of Open or Compound Fractures; H. H. Mudd, St. Louis, Mo.

6.—Obstruction to Urination in the Male.

Effects of Obstruction in Urination Upon the Bladder and Kidneys; J. William White, Philadelphia, Pa.

Diagnosis and Treatment of Enlargement of the Prostate Gland; Hunter McGuire, Richmond, Va.; Wm. T. Belfield, Chicago, Ill.

Symptoms and Treatment of Stone in the Bladder; Wm. T. Briggs, Nashville, Tenn.

Symptoms and Treatment of Tumors of the Bladder; John B. Deaver, Philadelphia, Pa.; C. F. Buckley, San Francisco, Cal.

Treatment of Stricture of the Urethra; J. Rosenstein, San Francisco, Cal.

Members who have patients or specimens to exhibit bearing on these topics or who wish to make remarks in the discussion of them are cordially invited to be present during the meetings of the Section. The titles of other papers to be presented to the Section will be published when the program of the meeting of the Association is issued by the Committee of Arrangements.

John B. Roberts, Chairman,
1627 Walnut Street, Philadelphia, Pa.

Lloyd W. McRae, Sec'y, Atlanta, Ga.

The Coming Meetings.—"We doctors ought to feel happy; we can pay our money and take our choice—the State Medical at San José in April, or the National at San Francisco in June. We can also combine business with pleasure by at-

tending the greatest attraction ever seen on the Pacific Coast, and, in many respects, save the World's Columbian Exposition, the greatest exhibition ever in America. This latter will be an extra inducement to the Eastern visitors to come to the Pacific Coast. So very rare is it for the National Association to go so far from the popular center, it behooves us to show our appreciation of the compliment by attending in large numbers and by causing a respectable increase in membership.

Los Angeles, considering her importance as a noted health resort and number of physicians, ought to have a larger representation in the National Association. Of all places in the world, this city can least afford to be local, and that, too, upon medical matters. With us there will be a twofold good—the benefit derived from the attendance upon the meetings of the Society, and the indirect advantage accruing to the city. Many of the visitors will undoubtedly pay their respects to Los Angeles. All Southern California representatives will be eagerly questioned. The old story told on the Californian visiting his Eastern friends is probably true. So frequent had been his praises of the magnificent weather of this favored State, that by preconcerted arrangement every one of his callers asked, "How did you leave the climate?" Though this was a joke, yet the inquiry as to climate is the first question asked in good faith by the rest of the country—save the dwellers in Florida, or some other place of low latitude.

In pleading for the National we by no means wish to belittle the claims of the State Association. Southern California is a very important part of the State climatically, and it is very essential for its proper recognition that a goodly number of its physicians be present in San José in April.

On the day before the convening of the State society there will be held Monday, the 16th inst., the second annual State Sanitary Convention. The time is so arranged so as not to interfere with the sessions of the State Society, and at the same time allow one trip to do for both. There is room for a great deal of work in this direction. As this will be under the auspices of the State Board of Health, its utterances will have a semi-official bearing and corresponding weight with the laity. Preventive and State medicine will be the themes chiefly discussed. A topic, which is otherwise mentioned in this number, will be discussed under the following resolution:

Resolved, That hereafter consumption (and other diseases due to the bacillus tuberculosis) should be included in the list of diseases dangerous to the public health; requiring notice by householders and physicians to the local health officer as soon as such disease is recognized.

The utter disregard of many patients and landlords for the health of others can only be overcome by proper measures initiated by the physicians themselves."—*Southern California Practitioner.*

SOCIETY NEWS.

The Second Sanitary Convention of the State of California.—The second annual Sanitary Convention will be held at San José on April 16, the day preceding the meeting of the State Medical Society. The convention will be held under the auspices of the State Board of Health, which will pay all the bills. Invitation is extended to all medical men and sanitarians to be present and to present papers in the interest of preventive measures.—*Pacific Medical Journal.*

The Morgan County (Illinois) Medical Society held its regular monthly meeting in the Society's rooms, Jacksonville, March 8; President Frank P. Norbury in the chair. C. E. Ruth, Professor of Anatomy and Clinical Surgery, Keokuk (Iowa) Medical College, by special invitation demonstrated, upon a dog, the use of the "Murphy button" in intestinal surgery. The meeting was well attended. A vote of thanks was tendered Prof. Ruth for his highly interesting and scientific address and demonstration.

The Medical Society of the State of California.—The twenty-fourth annual session of the Medical Society of the State of California will convene at San José, April 17, 18 and 19, 1894. Chairmen of committees are requested to send the titles of their papers by the middle of March, to the Secretary of the Committee of Arrangements, Dr. John Wagner, Sixteenth and Valencia Streets, San Francisco. A large and interesting meeting is promised, and it is hoped that all members will endeavor to be present to give our friends in San José a chance to show what they can do when they try. —*Pacific Medical Journal.*

The Association of Military Surgeons.—The fourth annual meeting of the Association of Military Surgeons of the United States will be held in Washington, D. C., May 1, 2 and 3, 1894.

This National organization is composed of medical officers of the U. S. Army, U. S. Navy, National Guard of the United States and the Hospital Marine Service—in whose service are many of the most celebrated and distinguished surgeons of our country. A brilliant and able literary program will be presented. The afternoon of one day will be set apart for an object lesson from the "Manual of Drill," by the Hospital Corps. The evenings will be given up to social entertainments. There will be about five hundred delegates in attendance.

GEORGE HENDERSON,
Chairman Committee of Arrangements.

Twenty-first National Conference of Charities and Correction, Nashville, Tenn., May 23–28, 1894. Provisional Program. The Twenty-first National Conference of Charities and Correction will be held at Nashville, Tenn., beginning May 23 and closing Monday, May 28.

The Executive Committee has adopted the following provisional program, which is subject to amendment. A revised edition will be published later:

Wednesday—May 23, 8 P.M., Opening Exercises and Reception.

Thursday—May 24, 9:30 A.M., Reports from States. 10 A.M., State Boards of Charities. Papers and Discussions. 2 P.M., Section Meetings. 8 P.M., Charity Organization in Cities. Ten minute reports from cities upon this winter's emergency work.

Friday—May 25, 9:30 A.M., Reports from States. 10 A.M., The Insane. Papers and Discussion. 2:30 P.M., Section Meetings. 8 P.M., Juvenile Reformatories. Papers and Discussions.

Saturday—May 26, 9:30 A.M., Reports from States. 10 A.M., The Feeble Minded. Papers and Discussions. 2:30 P.M., Section Meetings. 8 P.M., Sociology in Institutions of Learning. Papers and Discussions.

Sunday—May 27, 11 A.M., Conference Sermon. 8 P.M., Child Saving Work. Ten minute addresses.

Monday—May 28, 9:30 A.M., Reports from States. 10 A.M., Prisons and Reformatories. Papers and Discussions. 2:30 P.M., Section Meetings. 8 P.M., Training Schools for Nurses. Brief Addresses. Closing exercises of the Conference.

The membership of the Conference includes members of State boards of charities, delegates from charity organization societies, officers of public and private charitable and correctional institutions, official delegates appointed by the Governors of States, and all other persons directly or indirectly connected with charitable work. All persons included under this general description are invited to attend the Conference, and the boards in charge of charitable or correctional institutions, public or private, are invited to send delegates.

The Conference is non-sectarian and non-political, whose aims are purely scientific and philanthropic.

The local arrangements for this meeting are in charge of a local committee composed of some of the best citizens of Nashville, who will make the necessary arrangements for reduced railroad and hotel rates, of which due announcement will hereafter be made.

A large attendance is expected, and the papers and discussions will be of a high order of scientific value and practical utility.

Persons receiving this circular will confer a favor by sending the Secretary the names of persons in their cities or States who are officially or personally interested in charitable or correctional work, for the purpose of having circulars sent them. Please give the official relation to institu-

tions or societies, and in large cities the street and number of residence, if possible.

L. C. Storrs, Lansing, Mich., President.
A. O. Wright, Madison, Wis., Secretary.
John M. Glenn, Baltimore, Md., Treas.

MISCELLANY.

Dr. J. W. C. Neal of Gettysburg, Pa., at a meeting of the State Board of Charities held at Harrisburg on March 1, was chosen a member of the Lunacy Commission.

Died of Ruptured Heart.—Sewall Parker, a young man of 23, died suddenly March 4, at Toledo, Ohio, while sparring with a friend. The postmortem examination made two days after showed that Parker's death was caused by a broken heart, that organ being literally rent in two.

Registration of Tuberculosis.—The State Board of Health and Bureau of Vital Statistics of Washington, at its recent annual meeting, passed an order requiring physicians practicing within the State to report all cases of pulmonary tuberculosis.

No attempt will be made at isolation, but a printed circular containing full directions for the sanitary care of such patients will be sent out by the Board for the guidance of the persons having them in charge.

Yellow Fever Spreading at Rio.—A cable from London bearing date March 7, says Captain John Piper, who succeeded Captain Lang as senior officer of the British fleet at Rio Janeiro, cabled to the Government to-day that yellow fever is spreading in the city. He recommends that all vessels be withdrawn from the entire harbor and that the port be closed. Advices from Rio Janeiro of March 9, state that all the foreign vessels of war have left the harbor, with the exception of Admiral Benham.

Dr. J. H. Ford of Wabash, Ind., has been appointed chief surgeon of the "Big Four" Railroad system. It is the intention to establish a hospital system like that on the Wabash and Missouri Pacific Roads. Dr. Ford will have jurisdiction over the "Big Four" and the Peoria & Eastern. It is the intention to erect a large hospital at Indianapolis to accommodate the divisions centering there, and to establish a hospital in every other division if the employes are favorable.

He Likes Our Reviews.—It was with pleasure that we read the greater portion of our review of Dr. Matthieu's book on diseases of the stomach, and the major portion of our notice of Professor Koch's book on operative surgery, in the March number of the *Southern Practitioner*. It would have added to our pleasure if the articles had been properly credited to the Journal instead of being used as original matter of the *Practitioner*. The notices in question appeared in our issue of February 17.

Faxton Hospital, Utica, N. Y.—The following staff appointments have been made by Dr. James H. Glass, Surgeon-in-Charge of Faxton Hospital:

Surgical Service—A. R. Simmons, Judson G. Kilbourn, F. F. Ellinwood.

Medical Service—H. C. Palmer, Charles B. Tefft, F. H. Brewer, James M. Ross, Walter B. Palmer, LeRoy Jones, L. F. Pattingill, M. J. Davis, William Powell, W. H. Brownell, C. R. Ward, H. E. Shumway.

Eye, Ear and Throat Service—A. R. Simmons; Charles W. Crumb, Assistant.

Obstetrical Service—F. H. Brewer, W. H. Brownell.

Gynecological Service—James H. Glass, Judson G. Kilbourn.

Pathologist—Theodore Deecke.

Consulting Staff—G. Alder Blumer, Utica; Stephen A. Ingham, Little Falls; Claude Wilson, Waterville; J. F. Huntley, Oneida; L. Swartwout, Prospect; George Graves, Herkimer; D. A. Barnum, Cassville; D. H. Roberts, Trenton; J. W. Douglas, Boonville; G. I. Pollard, Oriskany Falls; H. G. Dubois, Camden; M. W. Hurst, Holland Patent; G. A. Armstrong, West Winfield; I. M. Comstock, New York Mills; O. Langworthy, Hamilton; J. E. Casey, Mohawk; I. S. Edsall, Middleville; C. R. Hart, New Hartford; C. M. Sefler, Gloversville; George Fisher, Clayville; Alfred Goss, Adams; C. C. Veeder, St. Johnsville.

Home for Feeble Minded Children.—The Board of Directors of the Pennsylvania Training School for Feeble Minded Children, at Elwyn, Pa., at their meeting on March 2, elected a medical board of consultants for the first time in the history of the institution. These gentlemen have consented to give their professional services gratuitously and to aid in the cure and the mental and physical improvement of the children. They are: Surgeons, Dr. John B. Deaver, Dr. W. W. Keen; physicians, Dr. John Madison Taylor, Dr. D. T. Laine; neurologists, Dr. S. Weir Mitchell, Dr. H. C. Wood, Dr. C. K. Mills, Dr. James Hendrie Lloyd; orthopedic surgeon, Dr. G. T. Morton; otologist, Dr. C. S. Turnbull; ophthalmologist, Dr. S. D. Risley; laryngologist, Dr. S. Solis-Cohen; gynecologist, Dr. Anna E. Broomall; pathologists, Dr. H. W. Cattell, Dr. Joseph Leidy; dental surgeon, Dr. Thomas C. Stellwagen.

The chief physician, Dr. Martin W. Barr, and the assistant physicians, Drs. Frank White and Louise H. Llewellyn, are also members of the medical board. There are at present 909 children in the school, of whom 100 are supported by the city of Philadelphia, 550 by the State of Pennsylvania, and the remainder by the District of Columbia, by relatives, or by the "Free Fund" of the institution.

Appointed General Superintendent of the Canadian Quarantine Service.—Dr. Frederick Montizambert, has recently been appointed by the Dominion Government, General Superintendent of the Canadian Quarantine Service. Dr. Montizambert has for many years had charge of the Quarantine Station at Grosse Isle, in the St. Lawrence River about thirty miles below Quebec. This station during the cholera and ship fever times, commencing in 1832 and extending about to 1855, was the best equipped in the world. Steam having supplanted the sailing vessel, the plant was for many years crippled, on account of the steamships not being able to land at the wharf. About ten years ago Dr. Montizambert began to urge the building of a pier to deep water, so that vessels could come alongside, and other improvements and additions to the plant as experience demonstrated were necessary. He finally succeeded, so that by the beginning of the quarantine season of 1893 the changes desired were completed, and with the sub-station at Point Levi near Quebec it is once more the most complete quarantine station in the world. During the past season all the baggage of immigrants was inspected and disinfected whether cholera, or cholera suspects were on board or not, and in this way afforded greater protection to the United States (as nearly all the immigrants went to the United States) than any of our own quarantines. It not alone protected us from cholera, but other infectious diseases. He now will have supervision of the stations at Halifax, Grosse Isle, and those on the Pacific coast. Would that we could have such supervision of the quarantines of the United States. Dr. Montizambert is one of the best quarantine officers on this continent; a good executive, and an accomplished sanitarian, and always acts in harmony with the sanitary authorities of the United States. In 1890 he was elected the sixteenth President of the American Public Health Association, the first time in the history of that organization that a non-resident of the United States was selected for that honorable position.

Water Supply of Bridgeport, Conn.—Dr. Garlick of the Bridgeport Board of Health, made a statement before the Water

Investigating Committee, February 28, the substance of which was that the water taken from the upper and lower dams for the purpose of examination was found impure and highly prejudicial to the health of the community. According to the Bridgeport *Farmer*, he asserted that the typhoid fever outbreak last summer was caused by impure water. There were in all seven cases, two of which were fatal.

He gave the details of the examination of the water which he said was performed by Dr. Foote, the bacteriologist of Yale. The result of the test demonstrated the presence of germs which, while corresponding with and possessing all the known features of the typhoid fever germ, might not have been the real thing.

Speaking of his visit to the dams last summer for the purpose of securing the samples of water for analysis, the Doctor said:

"We found evidences of filth and uncleanliness on all sides. Especially filthy were the quarters occupied by the Italian workmen. It was clear that the sanitary condition of the surroundings was not what it should have been. The privy vaults were in a deplorable condition, and had a heavy rain storm or freshet occurred the refuse of these depositions would in all probability have been forced back into the reservoirs, with the result of tainting the water which flowed to the consumer."

The Doctor believed that the impure water and surroundings were responsible for the illness of the typhoid fever victims among the workmen.

President Sherwood, of the Hydraulic Company, inquired if Dr. Garlick was positive that the disease the men died of was typhoid fever, and the latter replied affirmatively.

Mr. Sherwood asserted that Dr. Bill, who attended some of the men, said that the symptoms were not those which indicated typhoid, but fever of another type. Dr. Garlick said examination of the water drawn from the faucet in his office showed it to be exceptionally pure, and from this he judged that it was on account of its being filtered. At that time the Board of Health recommended the use of private filters in all homes and also wherever possible the boiling of the water used for drinking purposes.

When asked if he had any idea of what would improve the quality of the public water supply he said that as an individual he did not care to take the responsibility of offering a suggestion but intimated that the Health Board might submit a proposition for remedial measures.

Engineer Hotchkiss, of fire steamer No. 3, and Engineer Tracey, of No. 4, said that as a general thing the fire supply was adequate, but on several occasions they had been compelled to remain idle owing to the apparent absence of sufficient force in the water pipes. In their opinion this was due to some irregularity of the water mains and not the hydrants.

Health Officer FitzGibbon substantiated the statements of Dr. Garlick. Of 102 cases of typhoid fever reported since 1889, 38 proved fatal. Some of the fatal ones were in his opinion due to impure water.

James Lyons, engineer at Hincks & Johnson's carriage factory, said he often found that there was not enough water in the boilers to get up steam. President Sherwood said that the capital stock of the Hydraulic Company was between $700,000 and $800,000. He refused to say how much the Company expended in constructing its system, intimating that the question was an improper one. City Attorney Davenport explained to the committee the legal relations between the Company and the city, and an adjournment was made subject to the call of the chair.

Philadelphia Notes.

The Polyclinic Trustees have just signed the contract for improvements which will cost near fifty thousand dollars this sum having been appropriated for the institution by the State Legislature at the last session. Among the additional accommodations are a three story laboratory building, a mortuary or autopsy room, a clinical amphitheater, and wards aggregating about fifty beds. The alterations will be made during the summer and completed by September.

The German Hospital—has also just adopted plans for enlarging its administration building by bringing it out to Corinthian Avenue. The addition will be modern in style 80 feet front and 25 feet in depth, and three stories in height, and will afford additional wards and private rooms.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from March 3, 1894, to March 9, 1894.

Major John Van R. Hoff, Surgeon U. S. A., is hereby assigned to the charge of the office and duties of the Medical Director, Hdqrs. Dept. of the East, during the temporary absence of Col. Joseph R. Smith, Asst. Surgeon General, Medical Director of the Department.

First Lieut. Charles Willcox, Asst. Surgeon U. S. A., is relieved from temporary duty at Boise Bks., Idaho, and ordered to return to his proper station, Presidio of San Francisco, Cal. Par. 7, S. O. 54, A. G. O., Hdqrs. of the Army, March 5, 1894.

Capt. R. B. Ball, Asst. Surgeon U. S. A. (Ft. Monroe, Va.), is hereby granted leave of absence for one month.

Capt. R. W. Johnson, Asst. Surgeon U. S. A., will proceed to Ft. Monroe, Va., for temporary duty during the absence on leave of Capt. R. B. Ball, Asst. Surgeon. Upon the return of the latter from leave, Capt. Johnson will return to his station, Washington Bks., D. C.

Major Timothy E. Wilcox, Surgeon U. S. A., is granted leave of absence for one month.

Major John D. Hall, Surgeon U. S. A., leave of absence granted is extended one month.

Capt. Henay I. Raymond, Asst. Surgeon, is granted leave of absence for four months, to take effect on or about Aug. 10, 1894.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending March 10, 1894.

P. A. Surgeon F. W. Olcott, from Naval Hospital, New York, and to the "Richmond."

P. A. Surgeon S. S. White, from the "Richmond," and to the Naval Academy.

P. A. Surgeon L. W. Curtis, from the Naval Academy, Annapolis, and wait orders.

P. A. Surgeon G. T. Lumsden, from the "Kearsarge," and wait orders.

Medical Inspector W. H. Jones, ordered before the Retiring Board.

Asst. Surgeon C. E. Rigos, from Naval Hospital, Mare Island, Cal., and to Naval Laboratory and Department of Instruction, New York.

Surgeon D. N. Bertolette and Asst. Surgeon J. M. Moore, ordered to the "Atlanta."

Asst. Surgeon J. E. Page, ordered to examination preliminary to promotion.

LETTERS RECEIVED.

(A) Asdale, W. J., Pittsburg. Pa.; Auld, J. M., Chicago, Ill.

(B) Birney, E., Greely, Iowa; Brown, R. S., Brooklyn, N.Y.; Berger, S. C., Philadelphia, Pa.; Billings, John S., Washington, D. C.; Brinkerhoff, W. C., Chicago, Ill.; Belkamp, L. J., St. Helena, Cal.

(C) Connor & Wylie, W. Superior, Wis.; Currier. C. G., New York, N. Y.; Culhane, T.H., Rockford, Ill.; Crothers, T. D., Hartford, Conn.

(D) Devlin, J. B., Denver, Colo.; Drevet Manf'g Co., New York, N. Y.

(E) Eagleson, J. B., Seattle, Wash.

(F) Fraid, Nathan, Louisville, Ky.; Formento, Felix, New Orleans, La.; French, Pinckney, St. Louis, Mo.

(G) Gage, Homer, Worcester, Mass.

(H) Hudson, W. G., New York, N. Y.; Hall, Rufus B., Cincinnati, Ohio; Hazelwood, A., Grand Rapids, Mich.

(L) Labordine Chemical Co., St. Louis. Mo.

(M) Mealer, W. K., St. Louis, Mo.; McArthur Hypophosphite Co., Ansonia, Conn.; Monette, Geo. N., New Orleans, La.; Montgomery, E. E., Philadelphia, Pa.

(N) New York Post-Graduate Med. School, New York, N. Y.

(O) O'Brien, J. S., Milwaukee, Wis.

(P) Petty, J. T., Washington, D. C.; Penfield, R. C., Philadelphia, Pa.; Plummer, R. H., San Francisco, Cal.

(R) Rauch, J. H., Lebanon, Pa.

(S) Shepard, Chas. H., Brooklyn, N. Y.; Stair, M. P., Ft. Atkinson, Wis.; Stowell, Chas. H., Washington, D. C.

(T) Tracy, J. L., (2) Toledo, Ohio; The Medical World, Philadelphia, Pa.; Thorpe, H. H., Liberty Hall, Texas; The American Physicians Sanitarium Association, Washington, D. C.

(U) University of Buffalo, N. Y.

(V) Van Hook, Weller, Chicago, Ill.

(W) Wadsworth, L. C., Newport, Ky.; Woodbridge, John E., Youngstown, Ohio; Wells, G. R., Livingston, Mont.; Ward Brothers, Jacksonville, Ill.; Wood, E. A., Pittsburg, Pa.

(Y) Yates, W., Chicago, Ill.

PAMPHLETS RECEIVED.

Mechanism and Personality. By Francis A. Shoup, D.D.

Erythema Exfollativum Recurrens. By A. H. Ohmann-Dumesnil, M.D.

Twenty-sixth Annual Report, New York Orthopædic Dispensary and Hospital Bulletin, Medical Society of Woman's Medical College. Baltimore, Md.

Twenty-third Annual Report Woman's Hospital. Philadelphia.

The Operative Treatment of Complete Prolapsus Uteri et Vaginæ. By Geo. M. Edebohls, A.M., M.D.

Latrines of the East. By Edw. S. Morse.

Total Extirpation of the Uterus. By George M. Edebohls, A.M., M.D.

The Technique of Total Extirpation of the Fibromatous Uterus. By George M. Edebohls, A.M., M.D.

In Memoriam—Chas. G. Smith. By Chicago Literary Club.

Society of the Lying-In Hospital, City of New York—Medical Report.

Studies from Department of Pathology, College of Physicans and Surgeons, Columbia College, N. Y., Vol. III, 1892-1893.

The Journal of the

American Medical Association

VOL. XXII. CHICAGO, MARCH 24, 1894. No. 12.

ORIGINAL ARTICLES.

APPENDICITIS OBLITERANS.

Read before the Chicago Academy of Medicine, March 16, 1894.

BY N. SENN, M.D., P.H.D., LL.D.

CHICAGO.

PROFESSOR PRACTICE OF SURGERY AND CLINICAL SURGERY RUSH MEDICAL COLLEGE; PROFESSOR OF SURGERY CHICAGO POLICLINIC; ATTENDING SURGEON PRESBYTERIAN HOSPITAL; SURGEON-IN-CHIEF ST. JOSEPH'S HOSPITAL.

The successful surgical treatment of peritonitis caused by infective lesions of the appendix vermiformis constitutes the most brilliant chapter of modern aggressive surgery. The surgeons have taught physicians by scientific research, as well as by lessons learned from clinical experience, that peritonitis, in the majority of cases, is a secondary affection, and that its successful treatment depends largely upon the detection and removal of the primary cause. The present large amount of knowledge concerning appendicitis and its complications is largely the result of the work of American surgeons. The European surgeons are slow in accepting the teachings and practice, as developed and promulgated in this country, but in the near future they will have to submit to the most convincing proof—the results of clinical experience. During the last five years so much literature on the surgical treatment of inflammatory affections of the appendix has accumulated that this subject has become somewhat threadbare and confusing. For a number of years it was customary for a certain class of abdominal surgeons to report the result of their annual work on ovariotomy; then it became the fashion to give the statistics of tubal surgery, but at the present time the appendix vermiformis is the favorite topic of discussion, and to it is assigned a liberal space of the medical press and the programs of medical societies, both large and small.

It appears to me that it would be more profitable in the future for this department of abdominal surgery to write less concerning individual experience, and elaborate more thoroughly upon a pathologic basis the conditions which demand surgical interference. The surgeon must bring more convincing proof than the simple recovery from the operation, viz.: The reasons for the necessity of operative intervention, in order to convince the mass of the profession of the correctness of the ground taken by a number of surgeons, that the appendix should invariably be removed when it is the seat of an infective lesion. There are exceptions to nearly all rules, and the surgery of the appendix vermiformis has not advanced sufficiently to enable us to lay down cast iron rules when and when not to operate. Pelvic surgery has been degraded by the modern *furor operativus*, and the same fate threatens the surgery of the appendix. The conscientious surgeon must bring his work in consonance with the pathologic conditions which he is expected to correct or remove. If it were my intention to report the result of my own work in the surgery of the appendix, I should certainly feel inclined to offer an apology in view of what has been presented by the medical journals, especially those of our country during the last five years, but as I propose to limit myself to the description of a special pathologic form of appendicitis, I am confident that I have opened up a field that will afford ample space for future investigations of a similar character and which will, in the course of time, furnish a foundation for accurate diagnosis and an improved technique.

I have, for a long time, been convinced that appendicitis is an infective disease, caused by pathogenic microbes which reside in the normal intestinal canal and exercise their specific pathologic properties in the appendix whenever the essential *locus minoris resistentiæ* is produced by other conditions. The anatomic location of the appendix is such that retention of its secretions is liable to occur, particularly in cases in which the lumen at the proximal end has become narrowed by congenital stenosis or antecedent affections of the cecal wall. From a bacteriologic aspect the appendix may be regarded as an open test tube, and the retained secretions a culture medium. I have but little doubt that future research will demonstrate that the most frequent microbic cause of appendicitis is the bacillus coli communis. Pus microbes undoubtedly enter largely into the etiology of mixed infections here as elsewhere. Intensity of the inflammation is determined more by the quantity than by the pathogenic quality of the microbes. The same cause which in one case produces a mild form of inflammation may in others determine speedy death from gangrene or perforation and acute sepsis.

I have performed at least 150 operations for lesions of the appendix, but instead of giving a detailed account of these it is my intention, in writing this paper, to call the attention of the profession to a pathologically and anatomically well-defined form of appendicitis that has heretofore not been separately described. For a number of years I have noticed in the examination of specimens removed from cases of recurring appendicitis, varying degrees of contraction of the lumen of the appendix, differing in extent from slight stenosis to complete obliteration. In recent cases I have invariably found the wall of the appendix more or less thickened at the seat of constriction. Similar observations have been made by other surgeons, but I have not seen anywhere special mention of this particular form of appendicitis. The *Medical Record*, July 15, 1893, alludes to a specimen described by Dr. Biggs, which had been removed from a man dying of chronic alcoholism. The appendix consisted of a small pouch about 3.1 ctm. in length, and beyond this a fibrous

cord 2 mm. in diameter, which, apparently as a result of an old inflammation, had been united by adhesions to the neighboring tissues. The effect of this appendicitis had been to cause a complete obliteration of more than one-half of the lumen of the appendix. Sections of the fibrous cord showed, under the microscope, unstriped muscular tissue, fibrous tissue and many small round cells. Fenger ("Remarks on Appendicitis," *American Journal of Obstetrics*, No. 2, 1893), has described a similar specimen. Nearly one-half of the appendix on the distal side was found obliterated. (Fig. 1. "Obliteration of Appendix on Distal Side." Fenger's case.) T. G. Morton ("Two Recent Cases of Excision of the Vermiform Appendix for Chronic Relapsing Appendicitis in the Interval," *Medical and Surgical Reporter*, Dec. 23, 1893) has recently removed an appendix for recurring inflammation in which obliteration had taken place on both sides. "It measured rather more than three inches in length; it was greatly distended near its middle, and the proximal and distal ends were thickened and swollen; a section showed total obstruction of the organ except its middle or distended portion, which was filled with about two drachms of very offensive pus." Lange, of New York, has also described several similar cases.

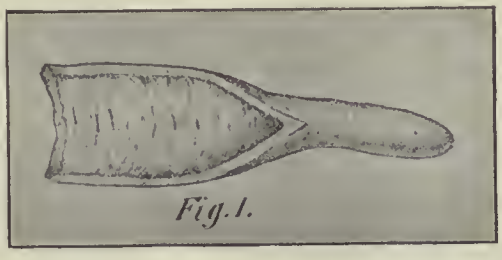


Fig. 1.

My attention has recently been called forcibly to this form of appendicitis, as within the short space of two months four cases have come under my observation. I have designated this form of appendicitis as appendicitis obliterans, because the most conspicuous pathologic condition presented by the specimens is an obliteration of the lumen by cicatricial contraction. The pathologic processes resemble very closely a similar condition in the terminal arteries designated here as arteritis obliterans. The patients presented before the operations a complexus of clinical symptoms which, when grouped together, will enable the surgeon to at least suspect, if not positively predict, this condition. I will briefly report the four cases of appendicitis obliterans which have recently come under my observation, and later utilize them as a text upon which to base some general remarks on the pathology of this form of appendicitis.

Case 1.—H. M. Stewart, aged 26; business, book-keeper; residence, Lyons, Kansas. Admitted into St. Joseph's Hospital, Sept. 30, 1893.

The patient states that his health had been fairly good until three years ago, when he suffered from an attack of "cramps in the stomach," and pain and tenderness in the ileo-cecal region. This attack lasted about eight hours. Similar attacks followed at intervals of two or three months, becoming more frequent until during last year they occurred every four to six weeks. The acute symptoms would, as a rule, subside in from six to fourteen hours, to be followed by a dull aching pain in the right iliac fossa accompanied by tenderness on pressure which would continue for ten days to two weeks when he would be able to resume his occupation, but more or less soreness and tenderness remained. The last attack which was unusually severe occurred in June. Operation was performed Oct. 2, 1893. The appendix was found behind the cecum directed inward and upward. It was adherent to the cecum and a loop of the ileum, mesenteriolum shortened and much thicker than normal. The organ when removed measured about three inches in length and presented a peculiar club-shaped appearance, the constricted portion being on the proximal side while the free end was bulbous. (I am indebted to Dr. Mellish for the illustrations in this paper). The wall of the free bulbous portion was much thickened. About one-third of the lumen on the proximal side was completely obliterated. The excluded part contained a viscid fluid, of a brownish color. The temperature ranged between 99 and 100 degrees F., for four days when it reached 101½ degrees F., on the fifth day, after which it became normal. The patient left the Hospital at the end of the fourth week.

Case 2.—J. Barzhof, aged 25; German-American; dentist; residence, Manitowoc, Wis. He entered St. Joseph's Hospital at the request of his attending physician, Dr. Pritchard, Nov. 4, 1893. Operation on the following day. General health fair. In the summer of 1888 he was taken with the first attack in the form of severe vomiting, diarrhea and intense pain in the abdomen, radiating upward and downward to the right of the median line. The first seizure lasted about four days. Similar attacks occurred about four times every year. In the spring of the present year it appeared that the attacks were provoked by change in diet. Pain often more severe when stomach was empty. Dietetic treatment had no effect in preventing recurrence of the difficulty. No constipation. Last and most severe

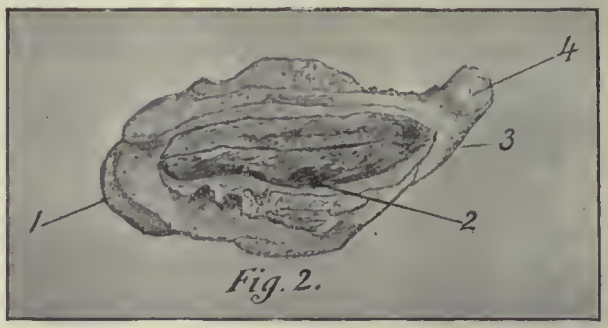


Fig. 2.

Appendix laid open from tip to near proximal end; Mrs. W.; Nov. 13, 1893. 1. Bulbous extremity. 2. Everted exceedingly vascular mucous membrane. 3. Obliterated portion. 4. Central part showing location of obliterated lumen.

attack about September 20. This was preceded by a somewhat hard swelling extending from umbilicus to the right inguinal region which was followed by a severe chill, vomiting, diarrhea and the characteristic sharp lancinating pain more severe in the ileo-cecal region. Highest temperature 102 degrees F. The pain and tenderness in the ileo-cecal region never disappeared completely after this and were relieved only by rest in the recumbent position. On opening the abdominal cavity the appendix was seen at once. It measured at least five inches in length and was firmly attached to the caput coli and extended behind the colon. The distal bulbous end was small. A similar bulbous expansion was found near its attachment to the cecum. Between these bulbous expansions the organ was not larger than a small lead pencil, anemic and very dense. Owing to the length of the mesenteriolum it had to be tied in four sections. The glands in the vicinity were found much enlarged, some of them had attained the size of an almond but none of them presented any evidences of caseation. Examination of the specimen after its removal showed that nearly the entire lumen had been obliterated, only a small portion on the distal and proximal side remaining patent. The open spaces contained a catarrhal viscid secretion of a brownish color. The temperature in this case never reached 100 degrees F., and the patient left the Hospital at the expiration of four weeks.

Case 3.—Mrs. E. A. West, aged 28, American, housewife; residence, Decatur, Ill. Entered St. Joseph's Hospital at the suggestion of the family physician, for the purpose of having the appendix removed for a recurrent inflammatory affection in the right iliac region of long standing. Her mother died of pulmonary tuberculosis when patient was only six months old, and the latter has always been

in delicate health. Married two years; no children. Six years ago was taken suddenly ill with symptoms indicating peritonitis. The pain was diffuse and of a grinding character. The acute symptoms subsided in five or six hours, but she was confined to the bed for four days. The tenderness in the right iliac region remained for a number of days. Later, in the same year, had a similar attack and during each of the succeeding four years the same experience was repeated from two to four times. Beginning with September, 1892, she had an attack each month until February, 1893, six in all. The attack in February was so severe that a physician was called for the first time. As in all previous attacks, pain passed off in a few hours but patient was confined to bed for four or five days, and tenderness persisted for as many more days. She was never aware of the exact location of tenderness until she was examined by her physician. The last and most severe attack occurred in July of the present year, which lasted twelve days. She was attended by Dr. Bumstead, who recognized the difficulty and advised a radical operation. During the last attack the temperature reached 103 degrees F. Vomiting and nausea were not conspicuous symptoms during any of the attacks. In the beginning of the acute exacerbations the pain was generally diffuse; later, localized in the ileocecal region. Hot applications always afforded prompt relief, and she believes that they were the means of cutting short pation. He attributed the difficulty to a strain produced by lifting. The second attack in April, the following year, commenced with a sudden, sharp, intense pain confined to the right side in the region of the appendix. The acute symptoms continued for one month, during which time he was confined most of the time to bed, but at any time, if assisted to his feet he could walk with the aid of a cane. During the second month he improved sufficiently to resume his work. A sense of soreness and tenderness in the ileocecal region remained. Vomiting occurred on the evening of the second day. Tympanites absent. Diagnosis of appendicitis was made on the fourth day by the attending physician. Third attack February, 1893, resembled the second in every respect. There remained not so much tenderness on pressure, as a soreness or pain from a slight jar, as would happen when riding in a buggy when the wheel struck a stone. Could not stand perfectly erect, but would incline the body slightly forward and to the right with feet about twelve inches apart. Examination before operation revealed tenderness in the region of the appendix on deep pressure. Operation Dec. 8, 1893. The appendix was readily found as it was directed forward and to the right, occupying a groove in the caput coli. During its separation from the cecum I expected every moment to make a rent in the bowel as the peritoneal coat of the latter appeared to be absent and the muscular coat very much attenuated. The dissection was

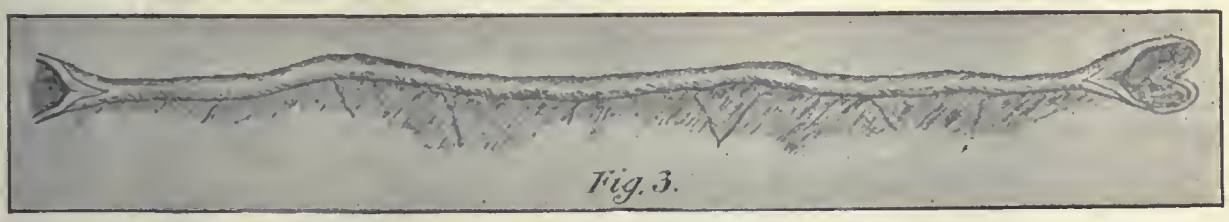


Fig. 3.

Obliterated appendix showing small pervious spaces at each end, the intervening part converted into a solid cord.

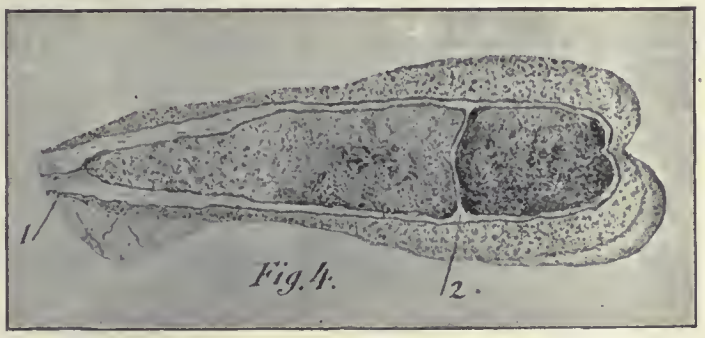


Fig. 4.

1. Proximal end completely obliterated. 2. Narrow stricture dividing completely the remaining lumen into two unequal portions; great thickening of wall near distal end.

several of the attacks. When examined after her admission into the Hospital the appendix could be felt as a firm cord, and tenderness was limited to this structure. Operation November 14. In this case the appendix was directed downward and inward toward the pelvis; adhesions old and firm. Mesenteriolum very short and adherent to appendix. It was tied in several sections. About one-fourth of the lumen on the proximal side was obliterated and the corresponding portion of the appendix transformed into a firm fibrous cord. (Fig. 4.) Beyond this obliterated part the lumen was much dilated, and subdivided into two unequal portions by a thin partition composed of cicatricial tissue. Wall of appendix much thickened and dense. Both compartments contained inspissated pus which resembled liquefied caseous material. Lymphatic glands in the vicinity of the appendix much enlarged and exceedingly vascular. Patient recovered without an untoward symptom. A small stitch abscess at the end of a week gave rise to a slight elevation of temperature, and slightly retarded the healing of the wound.

Case 4.—J. H. Croskey, aged 33, American; farmer by occupation; residence Farmer City, Ill. Entered St. Joseph's Hospital Dec. 5, 1893. Family history good. Patient was never sick until November, 1891, when after a hard day's work, he experienced a dull pain in right side and lower part of abdomen. He was able to sit up but could do no work for three days, when all symptoms passed away. There was no nausea or vomiting; a little tympanites and constimade slowly and carefully and mainly with the aid of blunt instruments. The mesenteriolum was incorporated so firmly in the adhesions that ligation was rendered superfluous. A number of bleeding points were ligated. The appendix when removed measured three inches in length, and on slitting it open it was found that about one-third of its lumen on the distal side was completely obliterated. (Fig. 5.) The distal end tapered into a sharp point. Wall of remaining portion only slightly thickened. Mucous membrane intensely congested. At a point about half an inch distant from obliterated part, both the wall of the appendix and its lumen showed changes which indicated the first stages of the formation of a circular stricture. Mucous membrane much thickened.

In this case the second attack of appendicitis produced an intense localized plastic peritonitis which gave rise to the extensive and firm adhesions of the appendix to the cecum, rendering the operation one of great difficulty. During the dissection I feared that a perforation at the tip of the appendix had taken place, followed by rupture of a small abscess into the cecum, and on this account anticipated injuring the wall of the bowel. Examination of the specimen, however, proved conclusively that this had

not occurred and that the adhesions were caused by a plastic peritonitis without perforation.

Since writing this paper the following interesting case of appendicitis obliterans has come under my observation in the clinic of Rush Medical College:

Case 5.—Jas. McChane, occupation, farmer, aged 35 years, married; mother died of phthisis. Personal history: Never a very robust man. Had "ague" eight years ago lasting three months. Regular in habits; no venereal history.

In August, 1893, the patient, while threshing wheat, was attacked with a severe paroxysm of pain in the right lumbar region. He had to stop work but did not go to bed. He has not been able to do a day's work since, although he has not been confined to his bed. The pain is always present, a dull aching pain, and the least exertion aggravates the difficulty and tenderness. The pains are always referred to the same point, a few inches to the right and below the umbilicus.

The bowels have been constipated and the patient resorts to the use of enema to relieve them. The appetite is very poor and he has been steadily losing flesh. When admitted the patient's temperature is normal in the morning with a slight evening rise.

On physical examination, a point of tenderness found corresponding to McBurney's point, with some induration and fixation of head of cecum.

From the clinical history and existing symptoms I was able to make the diagnosis of appendicitis obliterans before the operation. The operation was performed in the clinic. Photograph of specimen herewith shown. The distal end was patulous and is slit open, showing interior view with the obliterated portion at the proximal end.



Appendix, about one-third natural size.

GENERAL REMARKS.

The cases just reported present many clinical features in common. The age of the patients varied from 25 to 38. Four were males and one female. In all of them the acute exacerbations were characterized by symptoms of peritonitis of varying intensity. Swelling does not appear to have been a constant feature, either during or after the acute attack. In most instances the pain was at first diffuse or referred to epigastric region; later, localized in the ileo-cecal region. In most of the cases, tenderness in the region of the appendix remained a long time after the subsidence of the acute symptoms, or remained as a permanent condition. In all of the cases I was able to produce pain on making deep pressure directly over the appendix. The point of tenderness therefore varied according to the location of the appendix. The febrile disturbance during the acute attack appears to have been moderate and of short duration. Nausea and vomiting were not constant symptoms. Tympanites depended on the extent of the peritoneal involvement. The most constant and characteristic feature was recurrence of the acute exacerbations which set in from once a year to every few weeks. As a rule, the attacks became gradually more frequent. In two out of the four cases, some of the most important symptoms remained in a masked form during the intermissions. This was noted particularly in the cases in which the appendix was obliterated on the proximal side. I should suspect, very strongly, appendicitis obliterans in cases of recurrent appendicitis in which no complete intermission takes place during the interval between the acute attacks, and no appreciable swelling can be found in the region of the appendix. From what has been said it will be seen that the most conspicuous symptoms of this form of appendicitis are: 1, short duration and moderate intensity of the acute exacerbations; 2, slight or no swelling in the region of the appendix; 3, recurrence of acute attacks varying in frequency from a year to several weeks; 4, persistence of some soreness and tenderness in the part affected during the intermissions.



Fig. 5.

a—Appendix laid open from proximal end as far towards distal end as it is pervious, and a little farther. *b*—Transverse section of same, showing bulging of the mucous membrane.
1. Narrow circular strip of appendix much thickened, lumen much contracted; early stages of circular stricture. 2. Distal obliterated end tapering into a sharp point.



Appendix of rabbit, lymphatics injected. *f f*—Outer follicles with lymphsinus, *s s*. *f' f'*—Inner follicles. *l l*—Lymph vessels which leave the lymph follicles. *m*—Mucous membrane with dilated glands; *e*—their epithelial cells; *r r*—their recesses. *r'*—Recess; point of entrance does not correspond with level of section (Orth).

Etiology.—I have already made the statement, in the introductory remarks, that this as well as other forms of appendicitis is caused by pathogenic microbes, and therefore regard all acute inflammatory affections of the appendix as infective lesions. A glance at the anatomy of the appendix, as well as an examination of the most constant pathologic conditions, will corroborate the correctness of this assertion. The appendix is richly supplied with lymphatic vessels, and it is through these that infection most frequently takes place. Orth (*Cursus der Normalen Histologie*, etc., Berlin, 1878,) has fully described the lymphatic structures in the appendix of the rabbit, and Morris has recently alluded to the lymphatic channels of this structure as a route of infection in man.

It is not difficult to understand that an ordinary

catarrhal inflammation would render the mucous membrane permeable to the passage of pathogenic microbes, rendering it possible for them to pass from the lumen of the appendix into the lymphatics, the essential cause of the inflammation thus coming in direct contact with every anatomic constituent of the wall of the appendix, its serous investment and even the free peritoneal cavity without any ulceration or perforation. The distribution of the microbic cause through the lymphatic route has been demonstrated by many postmortem examinations and appendices removed by operative treatment. Minute miliary abscesses have often been found in the wall of the appendix and underneath the peritoneal coat, and usually in locations formerly occupied by lymphatic channels. There can be no question that the exciting cause can often be traced to a trauma, indiscretion in diet and exposure to cold. In none of the cases of appendicitis obliterans did I find a foreign body or an enterolith. In Fenger's case in which the obliteration was on the distal side, two grape seeds, one fecal concretion the size of a split pea, and the husk of an oat were found in the appendix. In the event of incarceration of a foreign substance or fecal concretion on the distal side of the obliteration, I should expect more pronounced symptoms during the intervals between the acute attacks, and apprehend great danger of perforation with all its immediate disastrous consequences. In only one case did the inflammation result in suppuration on the distal side of the obstruction, and in this case the pus had become inspissated. In all the other cases the excluded part of the lumen of the appendix contained from one to a few drops of viscid fluid stained a brownish color. It is evident that a plastic peritonitis in the vicinity of the appendix can be produced by pyogenic microbes without visible pus within the appendix or its wall.

Ribbert (*Virchow's Archiv*, 1893,) wished to ascertain the frequency with which the appendix vermiformis undergoes obliteration, and for this purpose noted the condition of this organ in 400 postmortem examinations. He found partial or complete obliteration in 25 per cent. of these cases. He believes that this change is due to involutionary changes in the majority of cases. One reason for entertaining this idea is that this condition of the appendix is met with more frequently in persons advanced in years. The influence of age is shown in the following table:

1	decennium	4	per cent.
2	"	17	"
4	"	27	"
5	"	36	"
6	"	53	"
7	"	58	"

In favor of the inflammatory origin of appendicitis obliterans it can be said that appendicitis is a comparatively rare affection in children, and that the longer the person lives the greater the liability to suffer from an attack. I have no doubt that obliteration of the appendix occasionally occurs as a congenital condition. Atresia of the lumen of this organ is probably more liable to occur during intrauterine life than the same condition in other parts of the gastro-intestinal canal.



Fig. 6.

Appendix (Stewart). + section through cicatrix, one-half circumference. The upper border of drawing represents the mucous surface— × 25 diameters. *a*—Muscular tissue. *b*—Empty glandular spaces. *c*—Granulation tissue. *d*—Remnants of mucous membrane. *e*—Fibrous and granulation tissue. *f*—Cicatricial tissue.

Pathology and Morbid Anatomy.—Ranvers (*Zur Pathologie and Therapie der Perityphlitis Deutsche Med. Wochenschrift*, 1891, No. 5,) found the appendix completely obliterated in thirteen postmortem examinations. All of the specimens showed evidences of circumscribed plastic peritonitis. He believed that in some of these cases perforation had taken place, and that the disease ultimately cured itself. In one specimen he found a small fecal concretion, surrounded by a capsule of cicatrical tissue. The most striking morbid changes in obliterating appendicitis are found in the different tissues of the organ, and these are directly concerned in the gradual and progressive obliteration of its lumen. A stricture of the appendix, like that of any other hollow organ, may be brought about by: 1, destruction of the mucous membrane by ulceration; 2, infiltration, thickening and contraction of the muscular coat; 3, prolonged cica-

tricial contraction of exudates upon its serous covering; 4, or, in consequence of a combination of two or more of these causes. In a former communication on relapsing appendicitis, ("A Plea in Favor of Early Laparotomy for Catarrhal and Ulcerative Appendicitis, with the Report of Two Cases," Journal of the American Medical Association, Nov. 2, 1889.) I described an appendix in which the mucous membrane was extensively ulcerated. " On inspection of the mucous membrane lining it, an oblong ulcer was discovered near the middle and opposite mesenteric attachment. The ulcer measured about half an inch in length, and a quarter of an inch in width. Its greater diameter corresponding to the long axis of the appendix. The margins of the ulcer were regular in outline and not undermined. It presented no evidences of repair. Its greatest depth corresponded to its center. The whole mucous membrane was exceedingly vascular and much thickened, the submucous infiltration being uniform over its entire area. A transverse section of the appendix through the center of the ulcer, examined under the microscope, showed that the entire thickness of the mucous membrane and part of the muscular coat were destroyed by the ulcerative process, and that the remaining thickness of the wall, as far as the peritoneum, was infiltrated with embryonal cells and leucocytes which were closely grouped together in the connective tissue reticulum. The submucous tissue and part of the muscular coat were similarly infiltrated throughout." The healing of such an ulcer would naturally produce stenosis and eventually complete obliteration of the lumen of the appendix. Such an event would presuppose subsidence of the infective inflammation, the lining of the floor of the ulcer with active granulations and the transformation of embryonal into cicatrical tissue endowed with the characteristic intrinsic tendency to progressive contraction. Such a mode of obliteration is shown by illustrations, Figs. 6, 7 and 8. The sections were taken from near and under the obliterated part of the appendix removed from Mr. Stewart.

Fig. 6 represents a section through a portion of the circumference of the appendix near the occluded part. Most of the spaces shown in the scar tissue were evidently formerly occupied by submucous glands. A few of them represent lumina of blood vessels.

The mucous membrane is almost completely destroyed, only a few remnants at *d* remaining. The place formerly occupied by the mucous membrane is now the seat of active cell production from the submucous connective tissue. The numerous vacant spaces in the fibrous tissue are empty glandular and lymph spaces, in which the parenchyma of gland tissue was destroyed, either by the infective inflammation or later by pressure from cicatricial contraction. The inflammation started in this case either in the mucous or submucous tissue, and extended towards the periphery of the organ, as indicated by the pathologic changes. The peritoneum, with the exception of the adhesions, had undergone but slight textural changes, while the tissues underneath were not much affected.

Fig. 7 represents the same section under higher power. It shows the remnants of glandular tissue and the almost complete destruction of the epithelial cells lining the interior of the appendix, and an abundance of scar tissue taking largely the place of muscular tissue. (Fig. 8). This section was taken from near the distal extremity of the excised appendix where the mucous membrane was least affected, and demonstrates that the primary lesion commenced some distance from the terminal end of the lumen, and that the process of obliterating cicatrization extended from here in both directions. It also illustrates that the fibrous thickening of the wall takes place largely by proliferation of the submucous connective tissue. It appears from these illustrations that while the primary microbic cause in such cases acts with sufficient intensity to destroy the mucous membrane, producing more or less suppuration, the destruction of tissue is limited to the epithelial lining and perhaps the submucous glandular and lymphoid tissue; when it comes in contact with the connective tissue its pyogenic function is limited and an abundance of



Same section as represented in drawing No. 6, showing remains of mucous membrane mingled with granulation tissue—× 75 diameters

granulation tissue is formed, which not only limits infection but likewise brings about obliteration of the lumen which in many instances assumes a progressive character. The adjacent mucous membrane not only suffers from continual exposure to the primary infective cause, but also from impairment of nutrition from gradually increasing cicatricial contraction. It is probable that in this way obliteration of the entire lumen would be finally accomplished, and that this termination is most likely to occur if the obliterating process begins in the distal part of the appendix.

I am, however, inclined to believe that in the majority of cases the obliterating appendicitis has a deeper and more serious origin in the direction of the lymphatic glands and channels. In such instances the mucous membrane at some point furnishes the necessary infection-atrium through which the microbes enter the lymphatic channels resulting finally in an interstitial inflammation, with more or less involvement of the peritoneal coat. The acute exacerbations in this variety of appendicitis obliterans are more intense, because the primary seat of infection is nearer the peritoneal coat, and the route of infection towards it more direct. The interstitial inflammation may result in the formation of small intermural abscesses which are more likely to reach the mucous than the serous surface. The mucous lining of the lumen of the appendix becomes implicated by the inflammation extending from glandular structures and connective tissue underneath it, and later from cicatricial contraction. Case 4 furnishes a good illustration of this type of obliterating appendicitis. The clinical symptoms in this case pointed to severe circumscribed plastic peritonitis, and the pathologic conditions revealed at the time of operation extensive and very firm adhesions. The appendix removed was occluded for about an inch at the distal extremity. The non-occluded portion showed the presence of catarrhal inflammation with the characteristic bulging of the mucous membrane after the appendix was laid open.

Fig. 9 represents a section through one-third to one-half of the entire circumference of the obliterated portion of the appendix. The section includes only a small part of the peritoneum which was very much thickened and the subserous vessels dilated.

As compared with the other illustrations the section through the obliterated part shows fewer empty glandular spaces and more blood vessels. The glandular structure was destroyed by the inflammation at an early date and not starved out, as was the case in the former instance. The former lumen of the appendix is here indicated by a mass of embryonal tissue in various stages of transformation into connective tissue. Reduction in the size of the obliterated part of the appendix was brought about in part, at least, by constriction of the peritoneal adhesions.

Fig. 10 represents the appearance of the tissues in a section near the obliterated part. At *a*, the superficial glands remain while in close proximity to it at *b*, the epithelial lining and glands are destroyed and their places are occupied by granulation tissue. The submucous tissue is again the seat

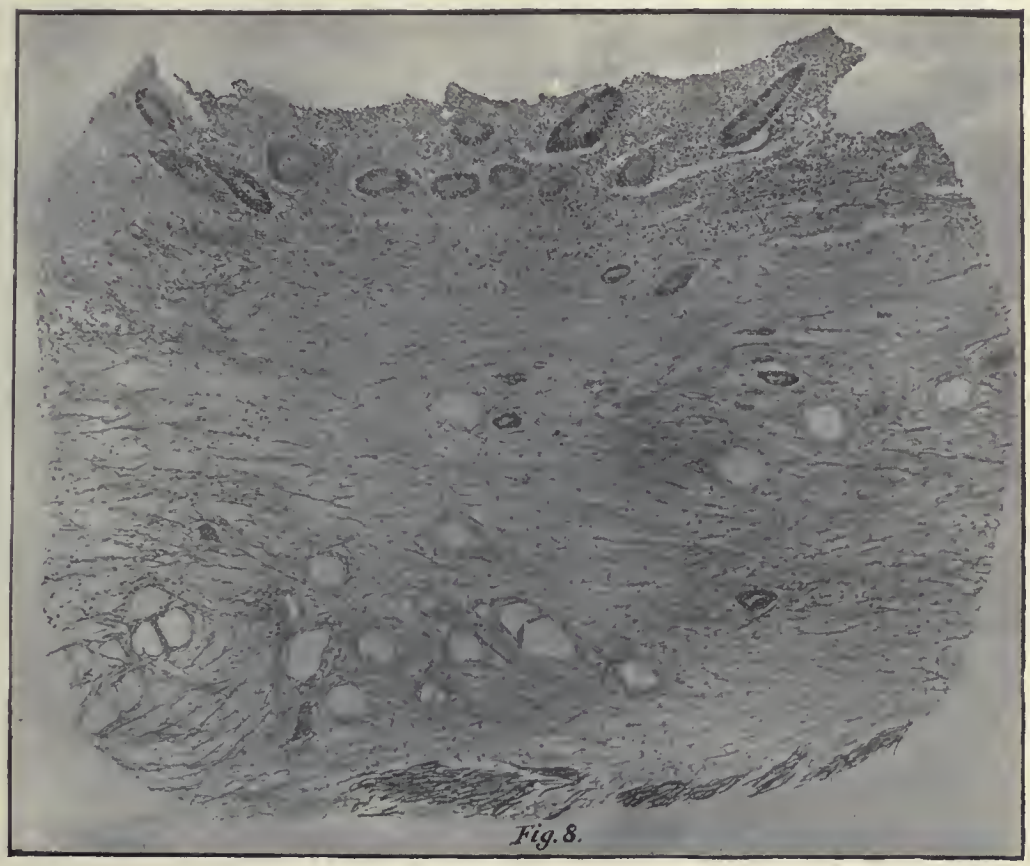


Fig. 8.

Showing remnants of mucous membrane with granulation tissue. At lower edge is shown a few muscle fibers. × 75 diameters; + section. Peritoneal surface not shown.

of active tissue changes, especially under the mucous membrane at *a*. The continuance of inflammation at the proximal end of the obliterating process, is indicated further by the presence of an extravasation of blood at *f*, and the masses of embryonal cells near the muscular coat at *g*. The thickening of the wall of the appendix is most marked during the acute exacerbations and in the excluded part. In the obliterated part the diameter of the organ is gradually diminished until it is transformed into a firm solid cord while its length, owing to adhesions, is often elongated instead of undergoing shortening (Case 2).

Among the cases which I have reported there is no instance of obliteration from cicatricial contractions of peritoneal adhesions alone, nor have I been able to find such a case in literature; but that such an occurrence is possible we know from analogy. In Case 4, we have reason to assume that the extensive and firm peritoneal adhesions aided the obliterating process. In reference to the contents of the excluded portion of the appendix we find that in two cases it consisted of a small quantity of viscid fluid devoid of odor and stained a brownish color, while in one case the cavity contained inspissated pus. In Morton's case it contained two drachms of fetid viscid material. In distal obliteration the proximal patent lumen usually contains the characteristic catarrhal secretion. One of the interesting pathologic conditions attending proximal obliteration which attracted my attention is the implication of the lymphatic glands in proximity to the vermiform appendix. In such cases the escape of septic material into the intestinal canal is prevented by the occlusion, and indefinite accumulation is prevented only by the passage of the products of the septic inflammation through the lymphatic channels. In this way lymphangitis and lymphadenitis, usually of a non-suppurative type, are produced. I found more or less enlargement of the lymphatic glands in all cases in which the product of the inflammation was thus imprisoned. In Cases 2 and 5 a number of lymphatic glands the size of almonds were found. The operative removal of such glands is superfluous as the removal of the depot of infection will be promptly followed by resolution. The great thickening of the wall of the appendix in the part excluded must be attributed, in part at least, to the vain attempts of the organ to evacuate its contents.

Operative Technique.—The operation performed in these cases for the removal of the appendix, as in other forms of relapsing appendicitis, was in all essential points the same as described in my paper referred to above. The abdominal incision was made from a point half way between the anterior superior spinous process of the ilium and the umbilicus in a vertical direction down to near Poupart's ligament.



Fig. 9.

Appendix (J. H. Croskey). Distal end, occluded, + section through about one-third of its circumference—× 25 diameters. *a*—Non-striped muscle fibers. *b*—Blood vessels. *c*—Collections of round or oval cells. *d*—Peritoneum. *b c*—Granulation tissue partially converted into connective tissue.

The cecum was used as a guide to the appendix. The free abdominal cavity was protected by sterilized gauze during the isolation and removal of the appendix. The mucous membrane of the stump was cauterized with pure liquid carbolic acid, the surplus acid carefully removed with a gauze sponge, the stump dusted with iodoform and buried by three or more Lembert sutures of fine silk, which included the serous and muscular coats of the cecum on each side. The line of suturing was made in accordance with the conformation of the cecum, in a direction which would cause the least tension, and without causing any unnecessary encroachment upon its lumen. I look upon this method as the ideal one in disposing of the stump, as it most efficiently guards against the two most serious after complications in such cases—infection and formation of a fecal fistula. I appreciate more and more the difficulties which so

often confront the surgeon in performing this operation. Although I have had but one death in about thirty-five operations, for recurring appendicitis, I am always prepared to meet unexpected complications and inform the patient of the possible risks which he assumes in subjecting himself to the operation. As in none of the cases of obliterating appendicitis pus was found outside of the appendix, flushing and drainage were dispensed with. The external incision was invariably closed by four rows of sutures, the first of catgut including the peritoneum only, the second of the same material embracing the fascia of the external oblique, the third of silkworm gut including all of the tissues, and, finally, the fourth of very fine catgut in the form of a continued suture, to bring the skin in accurate contact. As I have observed a number of cases of ventral hernia following operations upon the appendix in my own, as well as in

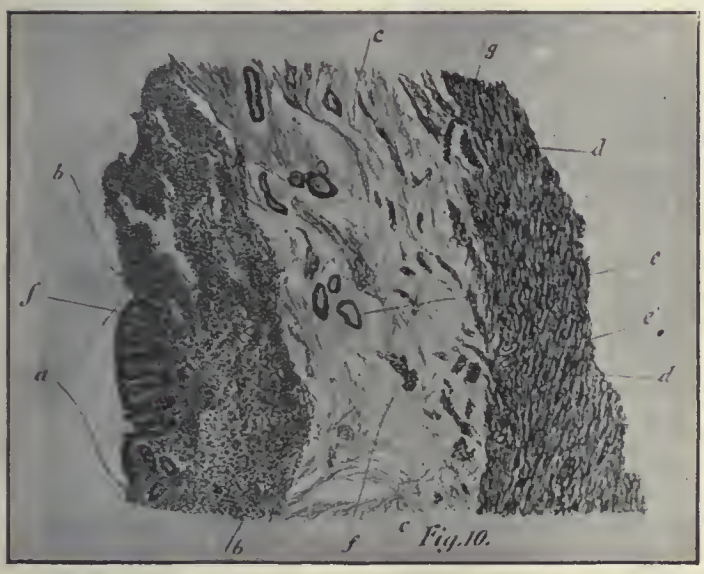


Fig. 10.

Appendix (J. H. Croskey). Proximal end; + section through about one-sixth of its circumference—× 25 diameters.
a—Glands. *b*—Granulation tissue, the deeper portion more or less fibrous. *c*—Connective tissue. *d*—Non-striped muscle fibers. *e*—Blood vessels. *f*—Extravasated blood. *g*—A collection of cells like granulation tissue cells. The peritoneum is not shown.

the practice of other surgeons, I am exceedingly anxious to prevent this occurrence by bringing the most important tissues in accurate contact by separate rows of the buried suture. I never permit patients to leave the bed in less than four weeks, and I advise them to wear a well-fitting bandage for six months as an additional safeguard against this exceedingly undesirable remote complication.

CONCLUSIONS.

1. Appendicitis obliterans is a comparatively frequent form of relapsing inflammation of the appendix vermiformis.

2. It is characterized by progressive obliteration of the lumen of the appendix, by the gradual disappearance of the epithelial lining and glandular tissue, and the production of granulation tissue from the submucous connective tissue which by transformation into connective tissue and cicatrical contractions starves out remnants of glandular tissue, and finally results in obliteration.

3. The obliterating process manifests a progressive tendency, and may finally result in complete destruction of all glandular tissue and obliteration of the entire lumen.

4. The incipient pathologic changes occur either in the mucous membrane of the appendix, in the form of superficial ulceration, or as an interstitial process following lymphatic infection.

5. The most constant symptoms which attend this form of appendicitis are relapsing acute exacerbations, of short duration, moderate or no appreciable swelling at the seat of disease, and persistence of soreness and tenderness in the region of the appendix during the intermissions.

6. The process of obliteration may begin at the distal or proximal end, or at any place between, or it may commence simultaneously, or in succession at different points.

7. Obliteration on the proximal side gives rise to retention of septic material which finds an outlet through the lymphatics giving rise to non-suppurative lymphangitis and lymphadenitis.

8. Circumscribed plastic peritonitis is an almost constant concomitant of appendicitis obliterans, and hastens the process of obliteration.

9. Complete obliteration of the lumen of the appendix results in a spontaneous and permanent cure.

10. In view of the prolonged suffering incident to a spontaneous cure by progressive obliteration, and the possible dangers attending it a radical operation is indicated, and should be resorted to as soon as a positive diagnosis can be made.

CLINICAL HISTORY OF THE CASE OF PRESIDENT JAMES ABRAM GARFIELD.

BY ROBERT REYBURN, A.M., M.D.

PROFESSOR OF PHYSIOLOGY AND CLINICAL SURGERY MEDICAL DEPARTMENT HOWARD UNIVERSITY, WASHINGTON, D. C., AND ONE OF THE ATTENDING SURGEONS IN THE CASE OF PRESIDENT GARFIELD.

I

ASSASSINATION OF PRESIDENT GARFIELD.

On the morning of July 2, 1881, President Garfield accompanied by Secretary Blaine drove up to the B Street entrance of the Baltimore and Potomac depot, Washington, D. C., intending with a party composed of members of his family, Cabinet and personal friends, to take a pleasure trip through the New England States. At 9 : 30 A.M. President Garfield and Secretary Blaine were walking across the ladies' reception room on their way to take the train, when a pistol shot was heard, which was immediately followed by a second report. There was a rush of those who were present to the reception room, where the President was found lying on the floor with blood streaming from two wounds, one a slight flesh wound of the right arm, and one of the right side of the body. The President turned at the first shot, and fell on his knees at receiving the second shot. The first ball from the assassin's revolver struck the upper portion of the right arm inflicting a slight flesh wound. The second bullet entered the right side of the back, four inches to the right of the spinal column, and on a level with the twelfth, or lowest of the dorsal vertebræ, and passing at first forwards, fractured the eleventh and twelfth ribs, then being deflected to the left, passed through the body of the first lumbar vertebra in an oblique direction to the left, and emerging thence,

Entered according to Act of Congress, May 29, 1893, by ROBERT REYBURN, M.D.

passed behind and below the pancreas, where it was found at the postmortem examination. The second ball in its course penetrated some of the branches of the mesenteric arteries and grazed the splenic artery.

The President was laid upon the floor until a mattress could be procured, and he was at once removed to a room in the second story of the depot; when he turned deathly pale, and soon after he was carried up stairs he vomited. The assassin attempted to run out of the Sixth Street door of the depot, but for some reason turned back and was arrested by Officers Scott and Kearney. The President's eldest son was with him at the time he was shot as well as Secretaries Blaine, Hunt and Lincoln, and Postmaster General James.

Dr. Smith Townshend, the district Health Officer was the first physician who came to the assistance of the President. He arrived about four minutes after the shooting, and states that he found him lying upon the floor of the depot, surrounded by an immense throng of people. He was in a fainting condition, and apparently dying. Dr. Townshend administered a stimulant, and by his orders he was removed upstairs. Immediately after this Drs. Purvis and Bliss arrived at the depot.

Secretary Blaine came out of the reception room following a man, and calling, "Rockwell! Rockwell! Where is Rockwell?" The man was seized by Officer Kearney, and Mr. Parks, the depot policeman, and proved to be Charles J. Guiteau.

Secretary Blaine was not going with the party, but came down to bid the President good-by. He said: "The President and I were walking arm in arm toward the train. I heard two shots, and saw a man run. I started after him, but seeing he was caught just as he got out of the room, I came to the President, and found him lying upon the floor. The floor was covered with the President's blood." The weapon used by the assassin was a five chambered revolver of the English bulldog pattern, with an ivory handle, and was about seven inches long. This is a weapon of strong propulsive power, and experiments made with a similar weapon during Guiteau's trial showed that it had power enough to penetrate a two inch plank at a distance of one hundred feet. When arrested Guiteau said: "I did it, and want to be arrested. I am a stalwart and Arthur is President now. I have a letter here I want you to give to General Sherman; it will explain everything. Take me to the police station."

Officers were sent to the police headquarters, by order of those around the President, to get the name of the assassin. He very willingly wrote his name and address on a sheet of paper, as follows:

"Charles Guiteau,
Attorney-at-Law,
Chicago, Ill."

The following letter was taken from the prisoner's pocket at police headquarters, showing conclusively the intention to kill the President:

July 2, 1882.

To the White House:

The President's tragic death was a sad necessity, but it will unite the Republican party and save the Republic. Life is a flimsy dream, and it matters little when one goes. A human life is of small value. During the war thousands of brave boys went down without a tear. I presume the President was a Christian, and that he will be happier in Paradise than here. It will be no worse for Mrs. Garfield, dear soul, to part with her husband this way than by natural death. He is liable to go at any time, anyway. I had no ill-will towards the President. His death was a political necessity. I am a lawyer, a theologian and a politician. I am a stalwart of the stalwarts. I was with General Grant and the rest of our men in New York during the canvass. I have some papers for the press which I shall leave with Byron Andrews and his co-journalists at 1420 New York Avenue, where all the reporters can see them. I am going to the jail.

Charles Guiteau.

On the morning of July 2, 1881, at about 9:45 A.M. whilst in my office, I was suddenly summoned by a messenger from Dr. D. W. Bliss, who informed me that President Garfield had been shot by an assassin, at the Baltimore and Potomac depot, and requesting my immediate assistance. At first I refused to go, being incredulous, but after a few moments' consideration, I deemed it advisable to go and see for myself if there was any truth in the story, and drove rapidly in the direction of the depot. I was soon certain that something terrible had just happened. From all directions I could see people hastening towards the depot as to a common center. Hastening up stairs on my arrival I saw President Garfield lying on a mattress, which had been hastily procured for him, and which had been placed on the floor of a room in the second story of the depot. He was lying in the northeast corner of the room when I first saw him. I asked him, "Mr. President, are you badly hurt?" He answered: "I am afraid I am." The President was deathly pale, almost pulseless and apparently dying from internal hemorrhage. Dr. Bliss was present, surrounded by a number of physicians, and was evidently recognized by all who were there as in full charge of the case. The following account of the condition of the President, when first seen by Dr. Bliss is a verbatim copy of his statement made to me at the time, and immediately recorded by me in the note book of the case: "I recognized a very feeble pulse of about forty beats per minute, and a marked pallor of the face; skin cold and covered with a clammy perspiration. There was sighing respiration which was slow, being about twelve to fourteen per minute. The lines of expression of the face were changed, and evidences of his having recently vomited were apparent. I then learned from Dr. Smith Townshend who had preceded me, that he had administered one ounce of brandy and one drachm of aromatic spirits of ammonia to the President. I then proceeded to examine the wound, and carefully introducing my little finger detected fractured portion of the eleventh rib and determined that the ball had passed forwards and slightly downwards into the abdominal cavity. I found a clean cut wound four inches to the right of spinous process of twelfth dorsal vertebra, between the eleventh and twelfth ribs. After withdrawing my finger, I introduced a Nélaton probe with great caution to the extent of three inches, where its progress was arrested by the soft tissues. Deeming it hazardous to make any forcible exploration I desisted, and then informed the medical gentlemen who were present that I deemed it unwise to make any further examination. I then asked the physicians who were present to retire to one of the corners of the room for consultation (there being no other available place) respecting the propriety of removing the President to the White House, and whether or no more stimulants should be given. It was then thought best on account of his weak condition to give him another half ounce of brandy."

The physicians present at this consultation were Drs. D. W. Bliss, Smith Townshend, N. S. Lincoln, Basil Norris, P. S. Wales, John B. Hamilton, C. M. Ford, D. C. Patterson, C. B. Purvis and Robert Reyburn. The President repeatedly and urgently requested that he should be removed to the White House. After the examination of the wound the President inquired as to the gravity of his injury; Dr. Bliss replied to him that it was quite impossible to give a definite opinion at this stage, disguising his own fears as to the gravity of the case. The President complained very much of a sense of weight and heaviness in his lower extremities. After a few minutes he said he had a sensation of tingling in his feet, and very soon these sensations changed to severe and distressing pains in the lower extremities. Half an hour after the injury the President's pulse was fifty to the minute, and though feeble was more full. After the consultation it was deemed expedient to remove the President to the White House and the ambulance was ordered for that purpose. I think I can see now the sea of human faces that completely filled the space in and around the depot, as we carried him down the stairs, and through the depot, with the mingled expressions of pity and consternation that sat upon each of them. The President was tenderly and carefully taken up by eight men and carried on the mattress to the ambulance, and was slowly driven to the White House. Dr. Bliss and Dr. Townshend accompanying the President in the ambulance.

At the time of his removal, 10:30 A.M., he complained of pains in his feet and legs, pulse 60 to 65. At 11 A.M. pulse 74 with more character; patient slightly restless, was offered water which he took with half an ounce of brandy. After arriving at the White House he received a hypodermatic injection of one-quarter of a grain of sulphate of morphia, and one ninety-sixth of a grain of sulphate of atropia. At 12 A.M. pulse 94, soft and compressible; he complains of spasmodic pains in the extremities, which he describes as shooting up the legs towards the body. These pains became very severe. There is a considerable hemorrhage which has taken place from the wound since his arrival at the White House, and there is probably also internal hemorrhage taking place. At 12:30 P.M. pulse 88, no material change except interruption of pulse; 12:45 P.M. patient vomited and on recovering himself said: "Well, Doctor, I suppose that was the result of your hypodermic." At 1 P.M. pulse 100 and very feeble, sighing respiration but complains less of pain in the extremities, has pains in the right hip. At 1:30 P.M. patient is restless, has had nausea and has vomited twice; complains of constant pain in the feet, surface cool, temperature 96.8, respiration 30 to the minute. The pulse and respiration are increasing in frequency, whilst the temperature is falling; an ominous sign.

At 1:40 P.M. pulse 124 and feeble. Pain in the extremities continues about the same; patient gives evidence of extreme prostration; 2:15 P.M. pulse 124 and a trifle better in character; respiration 32 per minute; complains much of pain in the lower extremities. After consultation one-quarter of a grain of sulphate of morphia was given hypodermatically; 2:45 P.M. pulse 116 and a trifle more full; respiration 38 per minute; has less pain and feels more like sleeping; is thirsty and asks if it will injure him to take water freely. At 3:40 P.M. pulse 130, pains in the feet more severe. After consultation it was decided to give another quarter of a grain of morphia hypodermatically. At 4:15 P.M. pulse 128; respiration 30 per minute. Seems easier since receiving the hypodermatic injection; but has just vomited freely a watery fluid. Percussion reveals a marked and well-defined dullness in the right hypochondriac region, (below lower margin of the liver).

The President has just made inquiry of Dr. Bliss concerning his real condition, which was explained to him and he took the announcement of his dangerous condition quietly and calmly. At 4:40 P.M. complains of pains in both feet and ankles, but is otherwise comfortable; 5:30 P.M. pulse 140 and respirations 28 per minute. The President has just vomited; is free from pain, but has a sensation of numbness in his hands and arms and wants them rubbed. The respiration is abdominal in character, and is more full on the right side than on the left; 6:30 P.M. pulse 150 and respirations 28 per minute; occasional sighing respiration. The President is cheerful and inclined to talk to his family and friends.

COMMENTARY ON THE STATE OF THE PRESIDENT.

In spite of the cheerful condition of the spirits of our patient as mentioned above, our prognosis of his case at this time was of the most discouraging character. He was evidently bleeding internally, and unless reaction would soon take place, it was evidently impossible that he could long survive. Mrs. Garfield was absent at Elberon, N. J. She had been telegraphed for, and was coming as fast as the express train could bring her to Washington, and yet we had grave and well-founded fears that he would die before her arrival.

Our patient lay on the wounded side to facilitate drainage from the wound. He had a sighing respiration, a feeble and scarcely perceptible pulse; the lines of the face hippocratic in character; frequent movements of the lower limbs, with regurgitations from the stomach. Our anxieties increased with each hour. No indications of reaction could be discovered even by the most sanguine. We measured the time with beating hearts, hoping that the illustrious sufferer might again see the face he loved so well. The President several times made inquiry as to the cause of Mrs. Garfield's delay, and, appreciating the gravity of his injury, was extremely anxious lest she should be too late for an intelligent interview. Upon her arrival, at 6:40 P.M., he requested that their interview should be entirely private. Thus the prostrate and apparently dying husband met his wife. She remained by his side not more than five minutes. The words of love, hope and cheer given him are known only to themselves and to God. It is a fact, however, that within an hour the President's symptoms began to indicate reaction.

The President rarely spoke of his condition, seldom expressed a want, and only once, in my hearing, referred to the circumstance of his shooting. He asked the Secretary of State, in the afternoon, the name of the assassin. On being told, he said: "Why should he have wished to shoot me?" It was explained that he had probably been disappointed in seeking some office.

Commentary continued from 8:30 P.M. July 2, to morning of July 4. The favorable reaction that took place in the condition of the President at 8:30 P.M. July 2, gave a relief to the feelings of the attending surgeons that may be imagined, but scarcely be ade-

quately described. The hemorrhage from the splenic artery, and which was probably also due to injuries received from the bullet by the mesenteric arteries was spontaneously arrested, just as our patient was on the brink of death. This favorable condition of our patient continued during the night, and on the morning of July 3 his temperature was 98.6 (normal); pulse 126; respirations 18 per minute. Drs. Bliss and Reyburn remained on duty all the night of July 2 and 3. Colonel Rockwell, General Swaim, several members of the Cabinet, Miss Edson and Steward Crump were also at hand to render any needed aid. The President enjoyed, upon the whole, considerable refreshing sleep, broken about every half hour by regurgitation of the contents of the stomach. The morning of July 3 found him comparatively cheerful and hopeful, and with a full appreciation of his surroundings. At this time he inquired of me what his chances of recovery were, saying, in his bright and cheerful way, that he desired a frank and full statement—that he was prepared to die, and feared not to learn the worst. He added that personally he was willing to lay down the heavy burden thrust upon him. I replied:

"Mr. President, your injury is formidable. In my judgment, you have a chance for recovery."

He placed his hand upon my arm, and, turning his face more fully toward me, said, with a cheerful smile:

"Well, Doctor, we'll take that chance."

It was perfectly apparent that there were more physicians in attendance upon the President than were needed, and Dr. Bliss determined to ascertain the President's wishes in the matter. On the morning of July 3 after the morning consultation and dressing of the wound, Dr. Bliss went to the President and said: "Mr. President, there are a number of the physicians of the city who have kindly volunteered their services and have been associated with me in conducting your case successfully through the day and night since your injury, and have contributed largely to the prospects of your recovery. Now that Mrs. Garfield has arrived and you are so comfortable, we wish to retire from the case and ask you to select your permanent surgeon and his counsel." The President replied:

"I wish you to retain charge of my case, and select such counsel as you may think best. Your judgment is better than mine on that subject." Dr. Bliss then said that if it was agreeable to the President and Mrs. Garfield, he would select Surgeon-General Barnes, U. S. A., Surgeon Woodward, U. S. A., and Dr. Robert Reyburn as his counsel, giving his reasons in each case for making the selection. The President replied:

"Doctor, your selection is eminently satisfactory."

Dr. Bliss then requested permission to thank the medical gentlemen in the name of the President and Mrs. Garfield, which was accordingly done. As many statements have been maliciously made to the effect that Dr. Bliss in assuming the charge of the President did so without due authorization, I herewith submit the following documentary evidence which will settle the point beyond question. Before me lies an official copy of the affidavit made by the Honorable Robert T. Lincoln, Secretary of War, and dated, War Department, Washington, D. C., May 23, 1882, and from which the following is an extract: "When the President was shot my carriage was at the door of the railway station, and within a few seconds I hurried it off to bring you (Dr. Bliss)." Farther on in the same affidavit the Secretary again says: "You (Dr. Bliss) at once took charge of the President, acting with the other surgeons who came quickly to his help."

II.

The duties of the attending surgeons were at this time systematically divided among them as follows: Dr. Bliss as chief surgeon in charge of the case remained on continuous duty every night at the White House, from the time the President was shot until he was taken to Elberon, N. J., and he continued his vigils there until the death of the President. During a long and varied professional career, I have known many instances of the self-sacrificing devotion of physicians to their patients, but I have never known such complete self-abnegation as was manifested by Dr. Bliss in his care of the President. He seemed to neither think nor speak of anything, except what concerned the welfare of his illustrious patient. All the medicine and all the articles of diet were either administered by him or under his immediate direction. Surgeon-General Barnes came twice a day in consultation with the other surgeons. To Dr. J. J. Woodward was intrusted the duty of preparing and writing the daily bulletins of the case, and along with Dr. Robert Reyburn assisted in taking the temperature, pulse and respiration, which was done at least three times a day. This naturally became after a while rather wearisome to the President. On my coming into the room one day he smiled, and said: "Here comes old temperature again." To Dr. Reyburn was assigned the duty of taking notes of the case, which were written each day by him in a book procured for the purpose. Drs. Woodward and Reyburn slept each night alternately in the White House, and were always on hand to furnish such assistance as might be required. The nursing of the President was done by Colonel Rockwell, General Swaim, Dr. Boynton, Dr. (Miss) Edson, Steward Crump, and the faithful body servant of President Garfield. These all rendered faithful and meritorious services, and their devotion to the President deserves the highest praise. Mr. J. Stanley Brown, Private Secretary to the President was on almost continuous duty during the President's illness, and gave all the aid in his power. The labor of nursing the President, I may here remark, was much more severe than it would seem to be. In the first place, during a large part of the President's illness it was impossible for him to turn in bed, or even to bend his spine. In order, therefore, to promote his comfort and prevent bedsores, it was necessary to turn him, or to change his position in the bed very many times during the twenty-four hours—this would sometimes reach fifty, sixty or even one hundred times a day. Strong linen sheets were kept under him for the purpose of moving him. When he required a change of position, three persons, either doctors or nurses (as they happened to be in the room at the time) came on each side of the bed, and taking hold of the sheets gently rolled him over to the side he wished to go. For the same reason every passage of his bowels and urine required the same attendance bestowed upon a young infant. The President was a man of large and massive frame (he was over six feet in height and weighed two hundred pounds the day before he was shot), so

it will be readily understood that the physical labor devolving upon his nurses and medical attendants was quite severe. Until the President was removed to Elberon, N. J., the medical bulletins of his case were prepared in conjunction with the other attending surgeons exclusively by Dr. Woodward and myself. Mentioning this fact recalls the many harsh criticisms which were made concerning the roseate statements which the bulletins gave of the President's condition. These bulletins were often the subject of animated and sometimes heated discussion between Dr. Bliss and the other attending surgeons, the surgeons usually taking one side of the question and Dr. Bliss the other. The ground taken by Dr. Bliss was that in the President's case it was vitally necessary to keep from him every unfavorable symptom, for by so doing we gave him his only desperate chance of recovery. It must be remembered that during almost all of his illness he was able to have the newspapers read to him, and he always asked for them every morning. If the slightest unfavorable symptom was mentioned in one of the bulletins, it was instantly telegraphed all over the country, and appeared in every newspaper the next morning. In fact, during the early part of the case he very often read the newspapers himself. We were placed in a very embarrassing position; on the one hand we did not wish to dishearten our patient by circulating discouraging reports of his condition, and on the other hand we wished to do our duty to ourselves and to the people of the whole country, who watched with such intense eagerness every word of intelligence that came from us.

During the early part of the day of July 3 the President's temperature remained about normal; towards evening a slight rise in temperature took place, reaching 100 at 10:30 P.M. He slept a good deal during the night of July 2–3, and in the morning took with relish equal parts of milk and lime water. He complained often during the day of severe pains of a lancinating character in the scrotum, both feet and ankles; he complained also of sensations of pricking and numbness in the same members. These symptoms were no doubt due to the concussion of the spinal cord produced during the passing of the bullet through the body of the fourth lumbar vertebra. So marked were these symptoms for the first few days after he was wounded, that it was feared that the spinal cord itself might have been injured. Of course the after history of the case (from the gradual disappearance of these symptoms) showed that such could not have been the case. Applications of cloths wrung out of hot water not relieving him entirely, he was given a hypodermatic injection of one-quarter of a grain of sulphate of morphia. He seemed cheerful and full of hope and amused himself by telling us a laughable incident of his early life. Slight tympanites was detected during the day, but no pain on pressure, nor any marked rigidity of the abdominal walls. This was the only symptom that pointed to the existence of peritonitis during the whole history of the case. During the night of July 3–4 the patient dozed at intervals. When awake he complained so much of the pains in his feet that he was given another quarter of a grain of sulphate of morphia hypodermatically; 7:30 A.M. he has vomited at intervals of twenty minutes during the past two hours. Gave one-half ounce of milk and lime water every hour, with powders of four grains of subnitrate of bismuth, two grains of oxalate of cerium in each one; to be given when required. Surgeons Dr. D. Hayes Agnew of Philadelphia, and Dr. Frank Hamilton of New York, having been summoned in consultation, arrived this morning. Dr. Agnew arrived at 4:30 A.M., and saw the President, but postponed the examination of the wound until the arrival of Dr. Hamilton at six o'clock. They were formally presented to the President and we held our consultation at 7:30 A.M. On dressing the wound there was found to be a very slight discharge from it, and scarcely any swelling or inflammation around the track of the wound. A careful review of the case was given to the consulting surgeons by Dr. Bliss, with the request that they should, with the data before them, examine the case thoroughly, as though it was their own, and freely express their views concerning the character and gravity of the injuries, and the course of treatment up to that time. He also gave them a detailed account of the explorations made in the wound, and the unsettled opinions as then held as to the course of the missile, and the organs involved in the injury. Carefully weighing all the evidence, the more prominent symptoms upon which the diagnosis was made were presented in the following order: The relative position of the assassin to the President at the time of the shooting, the direction of the bullet through the tissues as far as it could be determined, the amelioration of pain and hyperesthesia in the feet and ankles and scrotum, the repeated unsuccessful efforts to pass a probe or flexible instrument more than half an inch in any direction beyond the fractured rib, except in a direction downward, a little forward and anterior to the twelfth rib, where it could be passed about two inches. Neither the significance of the profound shock was underestimated, nor the lengthened period of collapse which followed, and which seemed to point to extensive lesions of important viscera. However, the fact that the kidneys, intestine and peritoneum had not been seriously injured, was shown by the passage of normal urine, the spontaneous movements from the bowels of natural feces, the discharge of flatus, and the absence of other symptoms of peritonitis. It was found to be impossible to determine positively the course taken by the bullet, but the indications pointed to a downward course into the pelvic cavity. The absence of any symptoms that could be attributed to a lesion of the liver, also showed that it had escaped serious injury.

They individually examined the wound with great care. These examinations consisted in the introduction in different directions, of probes and flexible bougies, in order if possible to determine the course of the bullet. With the evidences developed by this personal examination, together with the complete history given them of the shooting of the President, the consulting surgeons proceeded to discuss the possible course of the bullet and the organs involved. The propriety of making extensive incisions and dissections, so as to explore the fractured ribs and remove as much as might be necessary to reveal the true course of the bullet, was fully considered. It was finally determined, however, that the favorable condition of the President thus far, did not warrant such interference, and further such an operation would seriously complicate the case and diminish the prospects of recovery.

The consulting surgeons issued the following bulletin to-day after the consultation:

JULY 4, 1881.

We held a consultation with the physicians in charge of the President's case at 7:30 A.M. to-day, and approve in every particular of the management and care of the case, and of the course of treatment which has been pursued.

FRANK H. HAMILTON of New York.
D. HAYES AGNEW of Philadelphia.

At the time of the consultation his temperature was 99:4; pulse 104; respiration 19. He suffers considerably from pains in the feet, and cloths saturated in camphorated tincture of opium were applied to them; some vomiting of a clear fluid tinged with bile. Stopped giving nourishment at 10:30 A.M., and gave two teaspoonfuls of lime water with cracked ice. At 1 P.M. it was deemed necessary to give him another hypodermatic injection of one-eighth of a grain of sulphate of morphia. He then received the following prescription: Carbolic acid solution fifteen drops and lime water four ounces; mix and give a tablespoonful every hour.

At 3:30 P.M. The President has slept at intervals, and on waking expressed himself as feeling more rested. Still continues to vomit at intervals of about thirty minutes, without straining or nausea, and only about an ounce of fluid is ejected each time; 4:30 P.M., patient is more restless, and is more indifferent to surroundings; received another eighth of a grain of morphia hypodermatically; 7:45 P.M., (bulletin.): The President is not so comfortable. He does not suffer so much pain in the feet. The tympanites is again more noticeable; temperature is 101.9; pulse 126; respirations 24.

Telegrams of inquiry and condolence were showered in a perfect avalanche on the White House during the early part of the President's illness. They came from Vice-President Arthur, ex-President Grant, from the officials of the various States of the Union, and indeed from almost every prominent public man in the United States. This interest was not sectional in character. South as well as North, East as well as West, vied with each other in showing their sympathy with our stricken Chief Magistrate. Probably never in the history of the world was there such an outpouring of friendly feeling as was manifested in the case of President Garfield. The Queen of England was among the first to express her sorrow and best wishes for his recovery. This was followed by messages from all the crowned heads of Europe, as well as from many of the officials and public men of the different countries of Europe.

As to the letters received, their name was legion. During the whole time, indeed, of our attendance upon the President the mail received at the White House assumed alarming proportions. We received every morning literally bushels of letters, and many of them were of the most ordinary character. Every crank and vendor of patent medicines in the country seemed to think himself called upon to offer to cure the President. One man gravely suggested that the President's body should be inverted for some hours in order that the bullet might gravitate downwards, and thus aid in its removal. Another sent a drawing of a machine composed of a rubber tube and an air-pump. The rubber tube was to be introduced into the wound until it came in contact with the bullet, then the air-pump was to be attached to it, and by suction the bullet removed. I wish now I had retained some of the most absurd of these missives, but at the time of receiving them we were too busy to appreciate either their absurdity or comicality.

July 5, 8:30 A.M. The President has passed a comfortable night, and his condition this morning is decidedly more favorable. There has been no vomiting since last evening at 8 P.M., and he has been able to retain the liquid nourishment administered. There is less tympanites and no abdominal tenderness except in the region of the wound. Temperature 100; pulse 114; respirations 24.

The following dispatch was sent by the surgeons in charge to the consulting surgeons:

JULY 5, 9:30 A.M.

After you left the urgent symptoms continued. There was much restlessness, constant vomiting, and by 8 o'clock P.M. the President's condition seemed even more serious than when you saw him. Since then his symptoms have gradually become more favorable. There has been no vomiting or regurgitation of fluid from the stomach since 8 o'clock last evening. The President has slept a good deal during the night, and this morning expresses himself as feeling comparatively comfortable. The spasmodic pains in the lower extremities have entirely disappeared, leaving behind, however, much muscular soreness and tenderness to the touch. There is less tympanites and no abdominal tenderness whatever except in the hepatic region. Since 8 P.M. (July 4) he has taken an ounce and a half of chicken broth every two hours and has retained it all. The wound was dressed antiseptically this morning. Altogether but one-half a grain of morphia has been given hypodermatically during the past twenty-four hours, and it has been found quite sufficient. His pulse, however, still keeps up. At 8:30 A.M. it was 114; temperature 100.5; respirations 24. Seventy-two hours have now elapsed since the wound was received. We can not but feel encouraged this morning, though of course we do not overlook any of the perils that still beset the path towards recovery. The course of treatment agreed upon will be steadily carried out.

D. W. BLISS,
J. J. WOODWARD,
J. K. BARNES,
ROBT. REYBURN.

July 5, 12:30 P.M. The favorable condition of the President continues, and at noon he had a natural sleep. Temperature 101; pulse 110; respirations 24. July 5, 8:30 P.M. Favorable condition unchanged. Temperature 100.9; pulse 106; respirations 24.

As above mentioned, the wound of the President was dressed antiseptically, and this continued to be the case during the entire time of the treatment. The most scrupulous cleanliness of the instruments, and surgical appliances was observed, and also of the antiseptic solutions used for the daily washing out of the wound, and every effort was made to render them as aseptic as possible. The solution used was a freshly made one of carbolic acid in water, varying in strength, sometimes a 1 per cent. and sometimes a 2 or 3 per cent. solution being made. With this a solution of permanganate of potash of the strength of one to three grains to the fluid ounce of water was alternated. The carbolic spray was also invariably used during the dressing of the wound. It must be remembered that the technique of antiseptic, or more properly speaking, aseptic surgery was not so thoroughly appreciated or carried out by operating surgeons in 1881 as it is in 1892.

July 6, 8:30 A.M. The President slept well, and said this morning that he passed the most comfortable night he had had since he had been shot. He feels some desire for solid food, but was only given chicken broth, with white of egg, one ounce every

two hours. Temperature 98.9; pulse 98; respiration 23. July 6, 12:30 P.M. Temperature 98.7; pulse 100; respiration 23.

July 6, 8:30 P.M. His condition continues favorable, and he takes more nourishment than yesterday. Temperature 100.6; pulse 104; respiration 23. July 6, 11 P.M. The President continues to take chicken broth with white of an egg one ounce every two hours.

At 9:30 P.M. received one-quarter of a grain of sulphate of morphia, hypodermatically, and is now sleeping quietly, though he occasionally awakes and asks for ice water. A decidedly yellowish hue of the skin has made its appearance during the past two days, but is scarcely pronounced enough to call it icteroid. He complains of great muscular weakness and of the tenderness of the skin of the feet and ankles.

July 7, 9 A.M. The President slept last night until 8:30 this morning, when he awoke feeling refreshed and free from pain. He retains his nourishment. The wound was dressed antiseptically; very little discharge from the wound. Temperature 98.2; pulse 108; respiration 23.

(To be continued.)

EXERCISE—ITS PHYSIOLOGIC FUNCTIONS.

Read before the Topeka Academy of Medicine.

BY W. L. SCHENCK, A.M., M.D.

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South says: "God made no faculty but also provided it with a proper object on which to exercise itself." As God does no unnecessary thing, exercise is essential to the health and development of each organ of the body, each faculty of the soul. Progress demands constant renewal and readjustment. Change is the changeless law of nature. The old must give place to the new. The present is but the everchanging eternal link that binds the future to the past, and in all organic life, with properly regulated activities, each new link will be stronger than the last. Evolution is the law of God. Crabbe defines exercise as "repeated or continued exertion, coupled with purpose." Physiologically, it is that wisely regulated activity through which, by one of those beautiful compensations, so often observed in nature, both the force expended and the atoms destroyed are renewed in more potential form. It is the application of stored up force for the generation of greater force. Whether life was created merely for the reproduction of species, or for that evolution that changes and vivifies matter until at last a superadded spirit finds through it all its possibilities until it reaches that final change beyond which science can not go, the continuous change incident to exercise is essential to both physical and spiritual development. Exercise, voluntary and involuntary, is necessary to constructive and destructive metamorphosis, the vital forces that keep the body new and strong. The functional activity of an organism destroys and removes its atoms while it provides material for their renewal. When exercise is moderate and the material rich in nutritive elements there is increased development, and when the size or number of the cells is greatly increased there is hypertrophy or hyperplasia. On the other hand, atrophy and degeneration follows want of exercise and nutrition.

The body is a marvelous piece of mechanism, whose several parts are so fitly joined that we can not comprehend any one without comprehending all. Impressions made on any one part are in touch with all. In discussing exercise, we must remember that it is but one of many instrumentalities through which the body, mind and soul reach their possibilities, and that we can not confine the effects of its developmental force to the single organ or system we subject to its methods. But more largely than any other force it is the means to the end. It supplies to the cells the material they convert into protoplasm, while it returns them to original elements. It furnishes the force that vitalizes and energizes, while it consumes it. Properly applied it develops and preserves both the form and functions of the several parts of the body and their harmonious relations, and so secures the ends for which they were created. Improperly used, it brings disease to individual organs and interferes with the harmonious action of the organism. Thus by the proper exercise of the organ of vision its functions become clear and strong, the perceptions become more acute, life is more joyons and the vitality of the whole organism is increased. Improperly used, the organ is injured, various diseases are developed, and their effects are not confined to the injured organ. Through proper exercise, the vocal organs are so educated that they convey in varied tones all the emotions of the soul, while through improper use they cease to be its servants, and may produce far reaching disease. The trained muscles, under the control of the will are equal to every contingency. The skilled surgeon plunges his knife where the deviation of a line might prove fatal, with perfect confidence in his ability to control every movement of the hand; the gymnast performs his wonderful feats with full faith that his muscles will obey his will, while the athlete develops a muscular power that scarce knows its bounds. By properly regulated exercise the brain cells, through which are the activities of the spirit, enable it to reach ever upward toward the Infinite; to comprehend the minutest molecule; to weigh in the balance the remotest world; to understand and to utilize the varied laws by which the Omniscient governs the universe, and through its acquisitions in art, rhetoric and science prove its kinship with the Eternal. Without properly regulated exercise, all the forces of the body, all the faculties of the soul retrograde. With improper exercise, they fall beneath the palsied hand of disease. Exercise increases in force and frequency the pulsations of the heart and the rapidity and volume of the respiration. More oxygen is absorbed, more carbon dioxide eliminated, and by exercise that calls into action the whole organism, vitality is increased and life prolonged. But it has its limitations, and the important question is how much is necessary to secure the best results. That will depend largely upon the purpose of life.

Those who live on the fruits of their muscles should take such exercise as will secure their healthful development, and such perfect obedience to the will as will make them the efficient servants of the spiritual man. As the cells of the cortex of the brain are comparatively independent of the functions of the mere animal life, being evolved for spiritual purposes, and simply receiving nourishment and purification through the activities of other portions of the organism, their exercise is rarely a source of disease, the diseases so often attributed to brain work being due to irregularities and improprieties. Other

things being equal, brain work is healthful and brain workers long lived. The frequent "heart failures," and "Bright's disease," and other pathologic conditions common to brain workers, especially in the political arena, can be accounted for on sounder physiologic and pathologic principles. Brain work only requires such physical exercise and development as will keep the organism in health, that it may supply the cells of the cortex with the elements of life and development and remove waste, and exercise for this purpose should be regular and bring into action all parts of the body, but never excessive, as the healthful action of the intellectual brain is never benefited, but always injured, by excessive muscular effort and development, force and nourishment that should sustain intellectual action being expended to create and sustain massive muscles, useless to spiritual activity, but once developed demanding excessive and continued attention, and ever liable to various diseases.

That the proper amount of exercise may be taken during the developmental period of life, and applied where needed, that its function may be understood and regular habits and self-control established, there should be a department of physical culture in all our schools, both for the benefit of the individual members of the school, who too often graduate into early graves, and for the good of the State, that intellectual and moral culture may mean, as well, physical vigor and long and useful lives. And the duties of such a department might have a wide reach, as all intellectual and moral development is through the instrumentality of the body. A one-sided education that develops the cells through which particular faculties act, leaving those of other facilities undeveloped, makes one-sided men; the cranks who curse the State and disgrace humanity, often obscuring the line that separates sanity from insanity. We have all known such cases as that of Prof. A. of —— University, a most distinguished mathematician, but innocent of common sense, and we have known too well the Guiteaus and Prendergasts. While men may with advantage devote themselves to special departments, distinction involves a wide range of knowledge. The specialist in medicine who believes his patient all eye, or ear, or throat, or even alimentary canal, illustrates the saying of Wilhelm Meister: "He who knows it half speaks often and is always wrong;" and proves the prescience of the poet who wrote:

> "A little learning is a dangerous thing,
> Drink deep or taste not the Pyerian spring."

Every cell and every organ of the body was created for use. By way of illustration, let us confine our thought to the effects of exercise upon the muscular system. We know that the contraction and relaxation of muscular fibers changes and sustains the volume of the circulation in their capillaries, and that the cells exhausted by increased activity eagerly appropriate its elements, and that when supply and appropriation are stimulated beyond the normal, there is hypertrophy.

We have an apt and beautiful illustration of the effect of regular and moderate exercise in the pulsations of the heart. Day and night, year after year, the blood is drawn into and driven out of its muscles in such well measured quantity that without fatigue, and without increase or diminution in development the muscles of the beating heart contract and relax sixty or seventy times each minute throughout life. If, like the voluntary muscles, this important organ had been left under the control of a capricious will, the grave hypertrophies and atrophies, the valvular lesions and irregular innervation that from violence, irregularity and disease occasionally endanger or destroy life would have been the common lot of mankind. The preservation of the form and function of this organ, never resting but for an instant, emphasizes more than argument or illustration, the importance of the regular and measured exercise of the whole organism.

Muscles do not develop alone. Their activity involves activity in every other part of the organism. We readily note their impress upon the nervous system, whence comes all that energizes. The central cells are stimulated by reflexes, nervous force is generated and distributed to the acting organs, and nervous power developed. But we must remember that the exercise of organs of vital function has only an indirect influence on those of spiritual function. Though we may not comprehend *how* the muscles are strengthened and controlled by the action of the will, or what nervous force is, we know the results. Under systematic training Sandow is able to sustain a weight a thousand times greater than even his massive muscles would support if dissected from his body, and the skilled workman performs the most delicate and rapid movements with accuracy and ease; muscle and nerve being developed, *pari passu*. But when the acting muscles draw too heavily upon the vital forces there may be sudden failure of innervation, or other parts of the organism may be dwarfed through inanition.

Muscular effort, in any part, demands increased activity of heart and lungs, absorbents and excretants, and there is increased force given to all; but the athlete never gains intellectual or moral vigor from pounding his sand bags, and the blacksmith may hammer his anvil "from early morn till dewy eve," without becoming a "learned blacksmith," unless, like Elihu Burritt, he gives other training to the cells of his brain. The football champion may, by his persistent training, develop a fine physique, and so may the champion of "the ring," but neither will thereby develop the cells through which the spirit acts, except as the emotions and passions of the actors and visitors, intent upon victory at any cost, may find harmful development. Yet we might infer from the expressions of the press, and of some of the professors in our universities that the development of muscle was the *sine qua non* of a college course, and that the college whose "team" could "paint red" all its opponents in a "knock down and drag out" game of football was, *par excellence*, the educational institution of the age. While we can understand how professors of moral science and mathematics, and of Latin and Greek, through lack of a knowledge of physiology and hygiene may believe that great muscular development is essential to a strong life, and close mental application, we can not understand how those who appreciate the dignity and grandeur of the intellectual and moral forces can consent to practice in the gymnasium, or fight sand bags by the month that they may kick a leather ball farther than their opponents, or beat into insensibility a fellow mortal, or how instructors in mental and moral science can believe that a student with his mind intent on football, or anything foreign to mental training, with

frequent interruptions of his college course given to exciting exhibitions of his muscle, is in line with the best educational methods and results. The development of the organism is in line with its exercise. The college should be a gymnasium of mental training for beneficent purposes, for developing the organs through which knowledge and wisdom are attained, and not a gymnasium for forcing the development of mere animal life.

The college professor knows, or should know, that the forces through which the spiritual life is developed are rested by a change of studies; that the cells through which the mathematics are developed are not developed by the activities of the imagination; that those of the imagination are not developed by the study of moral science, and that the whole attention given to one branch of learning makes one-sided men; though by alternation of studies one faculty rests while another works, the habit of mental application continuously improves. Much more should these professors know that if the exercise of the cells of one portion of the intellectual brain can not develop the cells of other portions, that the exercise of those of merely animal function can not develop those of intellectual and moral function; that their only relation to the cerebrum is the preparation and supply to its cells of necessary nutriment, and that while for this a well balanced and healthful activity of the whole organism is required, an overgrown animalism demands so much of vital force that that portion of the body created for spiritual activity is dwarfed and atrophied.

As an illustration of modern methods of education, take the two leading orthodox universities, Princeton and Yale. After numerous breaks in the college course, and months of training, they met on the 30th ult—Thanksgiving day—on the Manhattan field, and Princeton reached home the victors of a bloody fight, when we are told by a laudatory press, "the bells of Princeton rang for four hours, and everybody in this staid old Presbyterian college, from President to janitor, rushed to a mass meeting, when the President said: 'It was a glorious day for Princeton,' and Dr. Green, 'Yale was nowhere; Princeton was everywhere,' and Dean Murray, 'wait till next week that we may have the opportunity of assisting in a glorious celebration;' and after promenading the city until the small hours of the morning with foghorns and tin pans and drums they waited, and had a *glorious celebration*."

Let us look at the other side of the great college spectacle. The New York *Tribune*, an advocate of the game, says: "About the entrance of the hotel were perhaps five hundred people waiting to see what the defeated Yale looked like. And they saw. But they never saw a more woe-begone, used up, pale-faced, bruised and bloodied lot of respectable, healthy sane young men before. One of the players crawled down off the coach and passed into the hotel through the alley made by the police through the crowd. Two of the players had to be helped, half carried. The men had just come from the battlefield; their faces were muddy and marked with bloody streaks; their sweaters were stained and reddened. In their dilapidated condition they did not look the strong, powerful young giants who had driven away, so full of confidence, earlier in the day."

Harper gives its picture of the victors at the same hour. It says: "People who live far away from New York, and who can not understand from the faint echoes they receive how great is the enthusiasm, may get some idea from an incident in the Princeton dressing room. The team was being rubbed down for the last time after three months of self-denial and anxiety, and the hardest kind of work that young men are called upon to do, while outside thousands of Princeton followers are jumping up and down and hugging each other, and shrieking themselves hoarse, when one of the Princeton coachers came into the room out of this mob, and holding up his arm for silence, said: 'Boys, I want you to sing the Doxology.' And standing as they were, naked and covered with mud and blood and perspiration, the eleven men who had won the championship sang the Doxology from beginning to end, solemnly and seriously. . . while the defeated team was lying on the benches of their dressing room, sobbing like hysterical school girls."

One more thought on this great moral exhibition, which we also quote from its champion, *Harper*. In speaking of "Billy" Edwards, an ex-prize fighter, fit adjunct to the moral drama, it says: "He keeps guard over the glassware of the Hoffman House bar, and goes to sleep on the eve of Thanksgiving day with as much as fifty thousand dollars in his possession,"—money bet on the game. And that we may know who deposits with him, it says: "The collegians begin to arrive on Wednesday and one sees nothing but young men enveloped in huge great coats and ulsters. They make Broadway, between the Fifth Avenue Hotel, where the Yale team lodges, and the Hoffman House, where odds are given and taken on the game, almost impassable."

The disregard for limb and life, the brutality and betting on the football field, and in the ring are much the same, differing mainly in the culture and character of the actors. For the one, they are recruited from the college where young men of promise are sent from Christian homes to develop the nobler faculties of mind and soul, drawing from the college and from the same class of society their henchmen and hooters, and here loss by death or demoralization brings sadness to many hearts and loss to the State.

In the other, they are the habitues of the grog-shop and the gambling den, who can scarce reach a lower level, and when "knocked out" are little missed.

If the football teams from our colleges are such models of propriety and scholarship as represented, how great has been the wrong to them, their friends and society. We know it is claimed that football develops determination, will force, quickness of perception, the self-restraint incident to months of training and courage. The same is claimed, and with equal reason, for the ring. Purpose is the foundation on which moral qualities are built. Character may be bad as well as good. The determination may be to do wrong as well as right.

> "There is a divinity that shapes our ends,
> Rough hew them how we may."

"Men do not gather figs from thistles nor grapes from thorns." The means must not only be equal to the ends, but in line with the ends. The Jacksons and Sullivans are the fruits of the ring. Those of the modern football team are not yet ripe, but how much prescience is required to tell the results of a game where a half score of players jump upon an opponent, and where the contestants fight with hands

and feet, breaking noses, ribs and limbs, dislocating joints, slugging on the sly, and in not a few instances taking life. And is this great intellectual and moral drama necessary to the development of courage and the nobler qualities of manhood? When this country has called to arms have not Americans from every department of life freely responded, and were the sluggers in personal encounter the men who stood firm where shrieking shells and hissing bullets fell thick and fast? Is not a prize fight where the combatants boldly declare their purpose, both a moral and scientific exhibition, compared with a modern football battle?

This may seem a diversion from the thought of our subject, but all the activities of the body, mind and soul are through the development of the physical organism, and if it is important that he who makes physical life his study should know the laws by which muscles are developed, how much more important that he should understand the laws that govern the development of those faculties that distinguish man from the brute, and the relation of each to the other?

Ethics may picture to the ethical the athlete transfigured into an intellectual and moral giant, but science beholds him transformed into a prize animal. The one looks at an ideal spiritual growth; the other at the absolute of physical life. One sees what he ought to be; the other what he is. Ethics has an ideal that science will not permit it to realize, for it knows that "they who sow to the spirit shall of the spirit reap," and "they who sow to the flesh of the flesh." Exercise is the stimulus to the metamorphosis of physical life whereby the old atoms are removed and renewed, and its action is largely confined to the organs exercised.

Man differs from the brute only as he has superadded to his animal a spiritual life that can control his will and direct his developmental forces. It requires generations of careful training and breeding to build up the massive muscles of the Percheron and Norman horse, or to produce the speed and endurance of the "thoroughbred," while man, through a well-directed will force makes equal development in a few years. Thus Sandow, the Prussian athlete, who belongs to a family never noted for either strength or athletic tastes, and when 18 years of age possessing no marked muscular characteristics, by localizing muscle building, and associating with muscular training voluntary control, in a few years reached his present wonderful development. He is now 26 years old, and though only 5 feet 8½ inches in height, he measures around the chest 46 inches; about the waist 29 inches; under the axilla and over the deltoid 17 inches; under the axilla and over the shoulder 21 inches; over the biceps 19¼ inches; around the forearm 19 inches; thigh 27 inches; calf 17½ inches; and has an expansive mobility of the chest of 14 inches. He lifts from the floor, with apparent ease, with one hand, at arm's length, straight above his head, a hollow dumb-bell, with a man in each globe, weighing 305 pounds, and as easily lets it down again; or he performs with apparent ease the still greater feat of placing his feet and hands on the floor and on a platform resting on his knees and chest supports three horses; weighing 2,800 pounds, while his lungs move quietly and his well developed heart sits lightly on its throne. But while Sandow has acquired volitional control over his muscles, even with his phlegmatic temperament, he fails to control his appetites and passions, but eats and drinks and smokes regardless of consequences, and is far from being an intellectual or moral giant.

From Samson, shorn of his strength by the seductions of Delilah, down to drunken John Sullivan, neither athletes or gymnasts have been distinguished for spiritual refinement or power, while in thousands, from the poet king of Israel; the blind bards of Greece and England; the Little Corporal, who conquered the nations of Europe, to Longfellow, and Gladstone, the great English premier, who has passed the age of fourscore years, giant intellects have developed through comparatively frail bodies, and without muscle, have gained as distinguished conquests in the world of mind as have athletes and gymnasts, without mind, in the world of muscle. And science teaches that the great animal development, consequent upon gymnastic and athletic training and contests, tends to sudden, or at best, premature death, and science is supported by vital statistics. If sudden death does not follow a heart taxed beyond its power of innervation, the overgrown muscles must be exercised in proportion to their development, while the digestive organs must be overtaxed to feed them, the circulatory system to carry their nutrients, the respiratory to oxidize their blood and the excretory to eliminate their waste. To stop the excessive exercise of these over developed muscles is not less dangerous than to continue it. There will come a time when physical life reaches the down-hill grade, when it must cease, and the involution of over developed organs invite all manner of diseases, both from within and without. Man was not made to be developed into an ox or a behemoth. He may energize for a time overgrown organs but, as when a ten-horse power engine is forced to do the work of a fifty-horse power, there is constant danger of explosion, and at best it is soon destroyed by excessive wear and tear, or its fires are smothered by accumulations from the consumed fuel; its premature destruction is a foregone conclusion.

To briefly summarize the relations of exercise to physical and spiritual life and health:

1. Exercise is essential to vital metamorphosis.

2. The cell growth of muscles and groups of muscles is rapidly increased by properly regulated volitional exercise, with a corresponding increase of nerve force and organic activity, provided there is a proper supply of muscle-building and force-producing food.

3. When an excessive development of an organ is produced, it involves its excessive and continued use, its cessation being full of danger.

4. Overgrown, hypertrophied organs are unnecessary and injurious, while their normal development and innervation is essential to life and all its activities.

5. The cells of the gray matter of the brain are not developed by the stimulus that energizes mere animal life, being an evolution for the activities of a superadded spiritual life.

6. Their relation to the merely animal organism is only one of supply and depuration and of their power of energizing through the action of the will.

7. While a harmoniously developed and healthful physical organization is essential to spiritual activity, spiritual life is handicapped by an overgrown animalism.

8. The development of the various organs of the body is in line with their activities.

9. By proper exercise the organs of animal life, receiving proper nourishment and development, healthfully perform all their functions, while the perceptions, correlated through the cells of the brain cortex, develop force in line with their correlation, and man reaches his ideal.

SUBVOLUTION—A NEW PTERYGIUM OPERATION.

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Many theories have been advanced to explain the origin and mode of growth of pterygium. Arlt ascribes it to an erosion of the cornea at the scleral margin, which in healing pulls the conjunctiva into the cicatrix. Poncet found micrococci in some of his pathologic preparations, and regarded them in the light of etiologic factors. Theobald concluded that the long-continued action of the recti muscles, usually the interni, was the responsible cause. Mannhardt regarded episcleritis as the promoting element.

None of the explanations, however, are entirely satisfactory. A thorough and critical examination of this subject has recently been made by Fuchs of Vienna, who after long-continued clinical and microscopic investigation concluded that a pterygium results from a pinguecula; that the hyaline degeneration which occurs in this pathologic product is continued on the adjoining corneal tissue over which the conjunctiva is pulled.

As many methods of operation have been introduced for the successful eradication of pterygium, as there have been theories advanced for the elucidation of its growth and pathology. These may be all grouped under the following heads:

Transplantation of the pterygium; excision; strangulation, and evulsion.

The simplest, and according to Arlt, the most efficient operation is that of excision as first practiced by Cocius. It consists in separating the pterygium from the underlying cornea, and excising it with a triangular piece of conjunctiva. The conjunctival wound is closed by a suture placed a few millimeters from the cornea-scleral margin.

In the following diagram, Fig. 1, *a*, represents the pterygium; *b*, the triangular piece of conjunctiva to be removed; and *c*, *c*, the sutures which are to unite the cut.

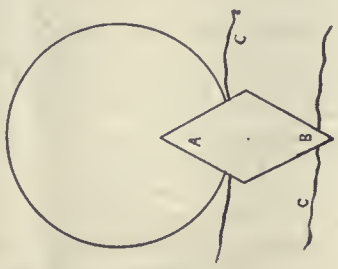


Fig. 1.

Wright of Columbus, and Prince of Springfield, report favorable results following evulsion. The former tears the pterygium with a forceps. The latter loosens it from the cornea with a strabismus hook, and then proceeds as in the operation of excision.

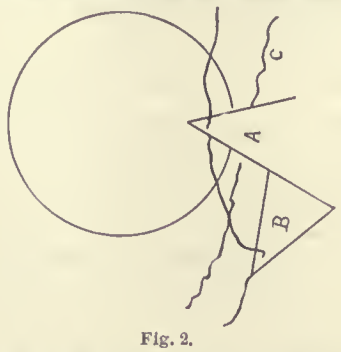


Fig. 2.

Demarres (Fig. 2,) practiced transplantation as early as 1855. After dissecting loose the flap on the cornea and on the sclerotic, he makes a conjunctival incision downward, commencing from the lower border of the base. Into the lower edge of the triangular gaping wound, the apex of the pterygium is sewed.

Knapp's modification consists in dividing the pterygium when large from apex to base, into two flaps. The ends are cut off and each flap is transplanted into its corresponding upper and lower conjunctival wound. The exposed surface of the sclerotic is covered by first dissecting up and then drawing together the conjunctiva.

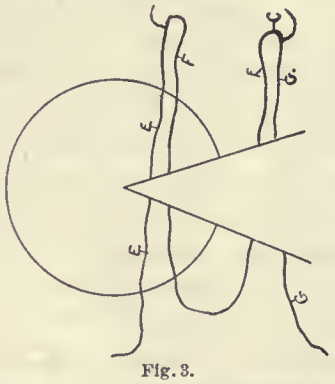


Fig. 3.

Strangulation is advocated by Szokalski and Galozowski. The first (Fig. 3,) passes a thread, armed with two needles, under the corneal and sclerotic portions of the pterygium. The thread is cut close to the needles leaving three threads. The ends of each are tied, a knotting of the middle one puckers the pterygium and all three of them cut off its circulation.

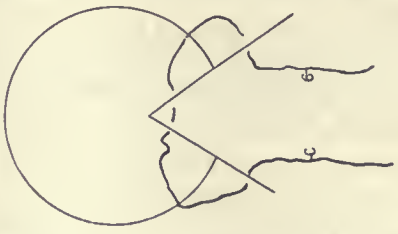


Fig. 4.—Thread in position; both ends are knotted, thus strangulating the pterygium.

Galozowski (Fig. 4,) separates the pterygium from the cornea, passes both needles at either end of the thread through the apex from above downward, leaving a loop on the upper surface. The needles are again entered at either border of the base through its under surface. It will be observed that the flap

is turned downward upon itself, its upper surface being brought in contact with the sclerotic. The two ends of the suture are tied together, thus strangulating the pterygium at the base.

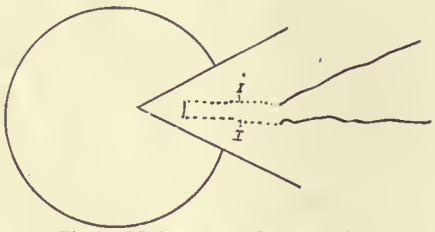


Fig. 5.—I I, Sutures under pterygium.

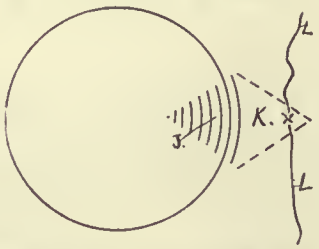


Fig. 6.—J, Denuded surface of cornea; K, pterygium turned under its base, dotted lines its edges; L L, suture knotted.

Hotz recently read a paper before the American Medical Association, recommending transplantation of a Thiersch's graft taken from the arm to replace the defect produced by retraction of the dissected pterygium.

Most of these procedures are frequently followed by a renewal of the growth. There are two fundamental principles involved in all these operations. One is destruction of tissue; the other is its preservation and growth in a new direction. None of the authors, however, take into consideration the salient feature involved in all plastic operations of the conjunctiva, namely, the prevention of contact between two raw surfaces. In excision, strangulation, and transplantation, the cut edges of the conjunctiva must necessarily be apposed to the denuded surface of the cornea. To me, this accounts for the relapses which so frequently occur.

Fuchs has shown that with the growth of the pterygium there is associated a fibrillar degeneration of the cornea, which involves Bowman's membrane and even the superficial layers of the cornea proper. In dissecting off the wing-shaped formation, a raw uneven surface is exposed. If now the cut surface of the conjunctiva comes in contact with this, or the proliferation at the cornea-scleral margin, it will unite with it and is liable to be again drawn over the cornea.

During the last six years I have followed my own method which satisfactorily overcomes the objection just stated. Its underlying principle is to prevent re-adhesion by placing a mucous surface in contact with a raw one. To do this, I turn the triangular flap underneath, which action can be best described by the term, subvolution, (turning under). In order to carry out this rule I have made the operation in the following manner:

The pterygium is gathered up by the two branches of a fine forceps serrated at the ends. A knife is passed underneath it close to the cornea, and the triangular membrane is dissected off toward the apex. A suture with a needle at each end is passed through the apex. Both needles are inserted from above downward, thus leaving a loop of thread on its outer surface. The needles are now passed through the base from below outward. The points of puncture being the ends of parallel lines drawn from the punctures in the apex, and just far enough back, so that when the flap is turned upon itself underneath the base, the roll will correspond with the cornea-scleral margin.

The two ends of the suture are now firmly tied. We have induced a condition similar to gumming the flap of an envelope to its body. The under surface of the pterygium is brought in contact almost throughout its entire extent and adheres. A re-adhesion to the cornea is prevented by the roll of mucous membrane at the cornea-scleral margin.

This operation to a casual observer is similar to Galozowski's, of whose method I only recently learned while looking through ophthalmic literature. But the principle involved is entirely different. He aims at destruction of tissue. I, at its preservation and the prevention of the renewal of the growth, by apposing a smooth surface to a raw one.

The only seeming drawback to this procedure is the temporary unsightly thickening produced by the folding. This, however, disappears in a few days, and after a week or two flattens and settles down to the *niveau* of the adjacent parts of the eyeball. It adheres to the sclerotic. The raw surface of the cornea is covered with scar tissue and regenerated epithelium.

No matter how much the base of the pterygium contracts after dissection from the cornea, sufficient allowance can always be made by stitching the apex more or less forward.

The apex may be cut off, or not, depending entirely upon the degree of thickness. It is hardly necessary to state that the eye is bandaged and cleaned daily with a boric solution, and that the thread is removed after two or three days.

My operation is especially in large pterygia. Even in smaller ones, where the growth contracts considerably after having been separated from the cornea, it is followed often by good results. In these cases, adhesions will form, which will draw the turned flaps over the sclerotic up to the cornea-scleral margin.

My friend, Dr. Beard, informed me only two days ago that he had seen Dr. Landolt of Paris, turn the pterygium under as I do, and then sew the dissected conjunctiva from above and below over the denuded sclerotic. This latter act, however, I regard as an objectionable feature, since it defeats the very object of my operation by placing the cut edge of the conjunctiva in contact with the raw corneal surface.

34 Washington Street.

The Board of Health of Philadelphia has adopted the report of its sanitary committee in regard to the compulsory registration of cases of pulmonary phthisis among the contagious diseases, and has decided in accordance with the recommendation of the College of Physicians, not to make such registration compulsory. At the same time, the infectious character of the sputa of consumptives being considered as fully established, physicians are requested to report localities needing disinfection, especially where a death has occurred, and they are urged to use proper precautions with regard to preventing the spread of the disease by destroying sputa and fomites. Circulars of information have been prepared for distribution to householders with instructions as to the sanitary measures thought advisable.

APPENDICITIS; WITH ORIGINAL REPORT AND ANALYSIS OF ONE HUNDRED AND FORTY-ONE HISTORIES AND LAPAROTOMIES FOR THAT DISEASE UNDER PERSONAL OBSERVATION.

BY J. B. MURPHY, M.D.
CHICAGO.

Read before the Pan-American Medical Congress.

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(*Concluded from page 389*).

Case 110.—Date of operation Aug. 17, 1893. Operator, Dr. Murphy. Case occurred in practice of Dr. Pigall. R. S. B., aged 33 years; male. Post-Graduate Hospital. Patient was kicked on July 31 in the right side by a man. The same night, at 2 A.M., he was attacked with sudden pain in right iliac region, followed by fever, tenderness and tympanites. These symptoms continued up to the time of operation. Examination: Large tumor in right iliac region, extending almost to umbilicus; no fluctuation could be detected; no edema or redness of the wall; dull on percussion, both superficial and deep. A differential diagnosis was made between rupture of kidney, rupture of cecum and appendicitis in favor of the latter. Operation: Lateral incision; abscess wall adherent to anterior wall of abdomen; general peritoneal cavity not opened. Abscess circumscribed; drained; appendix not removed; recovery.

Case 111.—Date of operation Aug. 22, 1893. Operator, Dr. F. S. Hartmann. A. K., aged 18 years; female. Primary attack. Sickness began August 17 with colicky pains in region of stomach, followed by nausea and vomiting. Later, pains extended to lower part of abdomen. The following day fever appeared and the pain increased. Two days later patient felt practically well, and went about as usual. During the afternoon of this day a second severe attack developed with pain, nausea and vomiting, etc. The following day she felt perfectly well again, but a third similar attack occurred later in the day. She was first seen on this day. Temperature 104 degrees, pulse 114. Large induration in right iliac region. Operation on fifth day. Drainage of intraperitoneal abscess containing about three ounces of pus; three fecal stones removed; appendix not located; gauze drain; fecal fistula; recovery.

Case 112.—Date of operation Aug. 25, 1893. Operator, Dr. Murphy. F. H. C., Buffalo, aged 28 years; male. Case occurred in the practice of Dr. J. C. Cook of Hyde Park. Appendicitis began on morning of 24th at 7 A.M., with sudden attack of pain in right iliac region, followed by nausea and vomiting. Tenderness all over abdomen; very sensitive on deep pressure in right iliac region. Abdomen tympanitic; induration.

9 A.M.	August 25,	Pulse,	96,	temperature,	98.3	degrees.
8 P.M.	"	"	100	"	102	"
11 P.M.	"	"	120	"	103	"

Operation 11:30 P.M. Lateral incision; peritoneal cavity opened. No adhesions to anterior wall. Appendix situated in front of cecum, surrounded by omentum. Appendix gangrenous; showed no perforation. Two drachms of pus outside of the appendix, which was amputated. Enterolith in appendix. Drainage; recovery. Remarks: Instructive in showing purulent infection of peritoneum (two drachms of pus) without perforation.

Case 113.—Date of operation Aug. 28, 1893. Operator, Dr. Murphy. Alexian Brothers' Hospital. P. McG. P., aged 27 years; male. Patient was taken with typical attack three days before operation. In spite of the very severe pain he worked the whole of the first day. The pain at first was general, but gradually became localized in right iliac region. There was marked muscular resistance, but no perceptible induration over appendix. Temperature at time of operation 100.3 degrees. Operation: Lateral incision, appendix situated two and one-half inches below the umbilicus and near the median line. Small circumscribed abscess; no adhesions to anterior wall; adhesions to omentum. Appendix perforated; fecal concretion; appendix excised; simple ligature of base; drained; recovery. Temperature at no time after operation exceeded 100.4 degrees.

Case 114.—Date of operation Aug. 28, 1893. Operator, Dr. Murphy. Mrs. C., aged 52 years. Occurred in practice of Dr. T. J. Conley. Attack began six days before operation with typical symptoms. A general suppurative peritonitis existed before operation. The operation showed that a circumscribed abscess existed and had ruptured. Operation: Temperature at time of operation 104 degrees, pulse 120. An incision was made and the abdominal cavity drained. Appendix removed; gall-bladder elongated and adherent to abscess wall. Patient died three days after operation, of sapremia. No autopsy.

Case 115.—Date of operation Aug. 31, 1893. Operator, Dr. Murphy. Male, R. H., aged 16 years. Case occurred in practice of Dr. J. C. Cook. Patient was suddenly taken sick at Waukegan (August 29) with nausea and vomiting; severe pain in right iliac region; had been eating grapes the day before. Temperature August 31, 101 degrees. Operation thirty-nine hours after onset of symptoms. Lateral incision. Appendix completely surrounded by omentum at least one and one-half inches thick, except at tip, where only the thin gangrenous peritoneal wall of appendix separated the pus in the appendix from the peritoneal cavity. This whole mass was ligated and amputated; a drain of iodoform gauze inserted. Patient made a rapid recovery. Silkworm gut was used to ligate the appendix; this had to be removed as it did not slough off or was not absorbed.

Case 116.—Date of operation Sept. 19, 1893. Chas. B., aged 11 years; male. Post-Graduate Hospital. Operation by Dr. Hartmann. Patient was taken sick on the morning of Sept. 16, 1893, with dizziness and headache. Went to bed at noon, slept, and on awaking at 3 P.M. dizziness and headache had increased and he had developed a fever and backache. Diarrhea and griping present. The following day (September 17) 6 P.M., pulse was 150, temperature 105 degrees; typhoid condition; abdomen somewhat tympanitic; general tenderness. September 18, A.M., pulse 135, temperature 105 degrees; general condition same; abdominal tenderness more marked in right iliac region; no induration, but slight nodules could be felt in this region, which at time of operation proved to be swollen mesenteric glands. Operation: Appendicisectomy; small iodoform gauze drain; sutured; appendix was non-adherent; external appearance normal except the end, which was somewhat swollen, was of rather unusual length, and upon being opened was found to contain a grape seed, and was ulcerated. Recovery. Ventral hernia; latter resulted from wound opening during a severe attack of typhoid fever which immediately followed the operation.

Case 117.—Date of operation Sept. 24, 1893. Operator, Dr. Murphy. K. S., aged 50 years; male. Case occurred in practice of Dr. Venn. Patient has had a number of previous attacks. Present attack began about seven days ago with severe local pain at umbilicus, nausea, vomiting, fever, tympanites. *Status præsens:* Large induration in right iliac region, dull on superficial percussion, resonant on deep percussion. No edema of wall. Temperature 101 degrees, pulse 90, at time of operation. Operation: Lateral incision; abscess opened without opening the unaffected portion of peritoneum; abscess circumscribed; appendix not removed. Drainage; recovery.

Case 118.—Date of operation September 24, 1893. Operator, Dr. Murphy. H. C., aged 22 years; male. Case occurred in practice of Dr. O'Malley. Date of attack September 13, beginning with pain in umbilical region, followed a few hours afterwards by vomiting. On September 15 temperature 103 degrees. On September 16 temperature normal, and remained so up to day of operation. Sept. 24, 1893, 8 A.M., pulse 104, temperature 99 degrees. The induration extended to the median line as high as umbilicus and within three inches of ninth costal cartilage. Resonant on deep percussion and flat on light percussion over that area. Operation: Lateral incision; abscess circumscribed, i.e., the abscess was opened directly through the abdomen without disturbing the uninfected portion of the peritoneum. Appendix not removed; drainage; recovery.

Case 119.—Date of operation Sept. 27, 1893. Operator, Dr. Murphy. Alexian Brothers' Hospital. W. McK., aged 15 years; male. Six months previous, patient had been operated upon for general suppurative peritonitis following appendicitis. The abdomen had been drained; appendix not located. The wound healed nicely, but has opened and discharged pus three times since the operation. The present operation was performed for the purpose of removing the sinus and determining the cause of the same. Operation: Incision two inches to the inner side of the opening. Peritoneal cavity opened. Cecum found adherent in the iliac fossa and to the lateral parietal peritoneum. Appendix imbedded in adhesions adherent to wall of cecum and parietal

wall; the end was considerably distended. The cavity of the appendix was shut off from the cavity of the cecum by a large cicatrix. There were three openings in the appendix. The cicatricial occlusion of the base of the appendix accounts for the recurrence of the attacks. Appendix removed. The opening in the side of the appendix was connected with the opening in the abdominal wall. Drainage; recovery.

Case 120.—Date of operation Sept. 28, 1893. Operator, Dr. Murphy. F. B., aged 35 years; male. Case occurred in practice of Drs. McKee and Pigall. During the night of Sept. 21, patient was attacked with severe abdominal pain. This was shortly followed by nausea and vomiting. The following morning patient's temperature was 102 degrees. Vomiting and pain continued during the following seven days. The patient became very tympanitic and rapidly lost strength. Examination Sept. 28. Patient's facial expression bad; skin cold; gulping every few minutes; abdomen extremely distended. Dull on light percussion over lower half. Temperature 101 degrees; pulse 135. Operation: Lateral incision; abdomen full of sero-purulent fluid. Endothelium of intestines eroded. The appendix was easily located and removed; adherent, gangrenous and perforated. Drained. Death thirty-six hours after operation.

Case 121.—Date of operation Oct. 2, 1893. Operator, Dr. F. S. Hartmann. E. S. W., aged 32 years; male. Evening of Sept. 30 patient experienced abdominal pain which was relieved by an anodyne. The following morning pain returned, but patient went around as usual. In the evening pain became very severe, and during the night was so intense that hypodermic injections were given. October 2, A.M., pulse 95, and strong; at noon pain became somewhat localized in the right iliac region. At 4:30, had a very severe chill. Examination 6:30 P.M.: Tympanites, general abdominal tenderness, more marked in lower portion of abdomen and right iliac region; induration in the latter location. Operation: Appendicisectomy; drainage of septic peritonitis; appendix gangrenous, perforated, containing enterolith; adhesions of bowel to parietal peritoneum, limited septic process above and to the inner side of incision; toward the pelvis no adhesions were to be felt. Patient died on October 4.

Postmortem revealed presence of general septic peritonitis; folds of intestine were agglutinated and presented many pockets of suppuration.

Case 122.—Date of operation Oct. 12, 1893. Operator, Dr. Murphy. Alexian Brothers' Hospital. Ed. B., aged 21 years; male. Onset Oct. 7, 1893, with intense abdominal pain, more severe in right iliac region. Treated "expectantly" for one week. Was up and about after the first few days. Vomiting continued at intervals from beginning of the attack. Patient collapsed two days prior to admission to Hospital, and when admitted in very bad condition; respirations irregular, almost entirely thoracic, pulse feeble and rapid, temperature 102 degrees; general pain and tympanites all over abdomen. Induration not palpable, most sensitive in right iliac region. Diagnosis: Appendicitis, perforation, general suppurative peritonitis. Operation: Lateral incision; about a pint of pus escaped. Appendix perforated; firmly adherent; not removed. No limiting adhesions; pus distributed throughout entire peritoneal cavity. Strands of gauze placed in all directions. No irrigation. Hypodermic injections of strych. sulph. gr. one-sixteenth every hour. Patient rallied completely in forty-eight hours. Temperature dropped to 99 and remained so; he improved rapidly until October 22, when he was attacked with a double pneumonia, and died Oct. 24, 1893. All of his abdominal symptoms had subsided before the attack of pneumonia began; the drainage, however, had not been removed. I have placed this case in the list of recoveries, as I believe the cause of death was independent of his peritonitis. This is one of the very few cases that rallied from the collapse of general suppurative peritonitis.

Case 123.—Date of operation Oct. 14, 1893. Mary S., aged 11 years. Operation by Dr. Hartmann. On October 8, immediately after dinner, patient vomited very freely; the rest of the day felt as well as usual. During the night she again vomited. Felt quite well on waking the following morning, October 9. During the afternoon developed pain in the region of the navel, which was relieved by hot applications. October 11, on awaking, felt quite sick; intense pain in abdomen almost constant; remained in bed that day; during night developed a fever, which continued until the time of operation. Operation: Appendicisectomy; small iodoform gauze drain; suture; appendix swollen and mucous membrane gangrenous; recovery.

Case 124.—Date of operation Oct. 23, 1893. Operator, Dr. Hartmann. Post-Graduate Hospital. Mrs. M. O'B., aged 27 years. Since May, 1892, had ten attacks; always suffered with intense colicky pains in epigastrium, accompanied by vomiting of bile. The attacks occurred mostly during the night, came and disappeared suddenly. October 21, 6 P.M., patient experienced continuous pain in epigastrium, accompanied by persistent vomiting lasting until 4 o'clock the following day, when, after having ceased for a couple of hours, returned again. First complained of pain in the right iliac region during afternoon of 22d; chills in afternoon of same day. Examination: No tympanites, slight induration, tenderness confined to the right iliac region. Operation: Drainage of local septic peritonitis; appendicisectomy; appendix gangrenous, perforated, adherent; recovery.

Case 125.—Date of operation, Oct. 23, 1893. Alexian Brothers' Hospital. N. E., aged 24 years; male. Operator, Dr. Murphy. History: Patient admitted to medical ward of Hospital October 11, with a history of having been sick for ten weeks. Bloody stools for five days previous to operation. Severe pain and tenderness over abdomen general; diarrhea during entire ten weeks. Passage once every hour since entrance to Hospital; some pain during micturition; temperature 101 degrees, pulse 104, respiration 25. October 13, twenty-five stools in twenty-four hours; October 16, lumbar myositis, most painful in right side. October 20, great tenderness with tumefaction and tympanites. October 23, Dr. Murphy saw patient, and decided to make an exploratory laparotomy. Usual incision; about half a pint of very offensive fecal smelling pus, as well as fragments of necrotic tissue (three inches long) escaped. The cavity had the appearance of a large diphtheritic abscess. Iodoform gauze used as drainage. Condition gradually became worse, and patient died at 2 P.M.

Postmortem: Total destruction of mucous membrane of colon, in parts resembling microscopically the appearance of honeycombed tissue. Mucous membrane loosened from submucous tissue, and gangrenous, having lost all resemblance of a mucous membrane. The incision was directly into the cecum. Appendix not affected in any way.

Case 126.—Date of operation Nov. 1, 1893. Operator, Dr. Murphy. Mrs. J. C., aged 44 years. Case occurred in the practice of Dr. Wm. E. Quine. Patient suffered from five attacks in the eight months preceding the operation; the last one, three weeks before the operation, was more severe than the former attacks. Began with severe pain in right iliac region and gradually extended all over abdomen. It was shortly followed by nausea and vomiting. Temperature reached 103 degrees. There was increased sensitiveness as well as induration in right iliac region; general tympanites shortly followed. After five days the symptoms began to subside and disappeared entirely. The operation was performed after all the inflammatory symptoms had subsided. Operation: Lateral incision; appendix found firmly adherent to side of cecum; distal end distended and somewhat edematous. Proximal end close to cecum very much contracted. Ligature applied at seat of contraction; packed with iodoform gauze; time of operation, six minutes; gauze removed in forty-eight hours, and sutures tied. Convalescence uneventful. Examination of appendix showed complete occlusion at the neck. Cicatrices at the side showing where it had ruptured into the cecum. Repeated accumulation in the appendix without an outlet was evidently the cause of the recurrences.

Case 127.—Date of operation Nov. 2, 1893. Operator, Dr. Murphy. Alexian Brothers' Hospital. A. B. L., male, age 26 years. Case occurred in practice of Dr. Hoelscher. Patient felt slightly indisposed Tuesday, October 30. November 1, severe pain in abdomen, exaggerated in right iliac region. Patient seen on that evening by Dr. Hoelscher, and transferred to Alexian Brothers' Hospital at once. Temperature 101 degrees.

November 2, 9 A.M. Patient had considerable pain during the night; is very sensitive over the appendix; no induration; temperature 100 degrees. Operation: Lateral incision; appendix reached without difficulty, very much distended, gangrenous on one side, had not ruptured, no infection of the peritoneum. Appendix drawn out of the wound, packed about with iodoform gauze, ligated, amputated, top-sewed, sutures inserted, iodoform gauze drain. Removed drain in twenty-four hours; sutures tied; time of operation, ten minutes. Patient made a rapid recovery. Highest temperature after operation 100.4 degrees.

Case 128.—Date of operation Nov. 4, 1893. Operator, Dr. Murphy. T. D., aged 44 years; male. Attack began evening

of October 26 with intense pain in the abdomen which continued for several hours; it was accompanied by nausea and vomiting. October 27, pain less severe, tympanitic, sensitive all over abdomen, most marked in right iliac region; very slight induration; pulse 90, temperature 103 degrees. Patient had a severe purulent bronchitis accompanying the attack. The symptoms continued until November 3, when he had a chill, followed by a temperature of 104 degrees. Following morning, laparotomy. Lateral incision; circumscribed abscess, retro-cecal. Packed around with iodoform gauze before opening. Appendix not removed. Following morning pulmonary symptoms more severe; bowels moved, temperature subsided to 101 degrees. Pulmonary symptoms continued to increase, and patient died on the fifth day. Postmortem not allowed.

Case 129.—Date of operation Nov. 5, 1893. Operator, Dr. Murphy. Miss N., aged 17 years. Case occurred in practice of Dr. Rose. October 22, 6 A.M., patient's illness commenced with a gnawing pain in the stomach; dressed herself with difficulty on account of soreness; not localized as far as she noticed. October 23 and 24 pain was accompanied with nausea and vomiting. Enema of hot water was given which relieved the symptoms. Induration felt. Patient did not manifest any serious symptoms for the following two weeks. Very slight elevation of temperature with slight digestive disturbances. Induration remained. Gives history of diarrhea with slight hemorrhage. November 5. Case seen by Dr. Murphy. Operation: Lateral incision; general peritoneal cavity not opened; appendix not removed; circumscribed abscess, a large quantity of pus; drainage; recovery.

Case 130.—Date of operation Nov. 10, 1893. Operator, Dr. Murphy. W. M., aged 12 years; male. Case occurred in practice of Dr. Hayes. On November 3 patient was suddenly attacked with pain in the right side. On November 4 nausea, vomiting, increase of pain which patient described as cramps. As the symptoms had not subsided, on the next day the attending physician was called in. Examination on November 5 temperature 105.5 degrees; pulse 120. Tympanites; abdominal tenderness general, but most marked in the right iliac region. An opiate was administered, which relieved pain. November 6, discontinuation of opiates resulted in return of pain. An operation was now advised, but was not consented to. The symptoms continued up to November 10, when an operation was agreed upon. Temperature at time of operation 99 degrees, pulse 90. Operation: Lateral incision; general peritoneal cavity opened; a general suppurative peritonitis present; the bowels were covered with flakes of pus; appendix not removed; drainage; recovery.

Case 131.—Date of operation Nov. 23, 1893. Operator, Dr. Wittwer. L. P., aged 16 years; male. Case occurred in practice of Dr. Bergeron. Family history good. Ten days before operation patient complained of pains around umbilicus, later localized in right iliac region; no vomiting; tympanites appeared after a few days; pain was more severe two days before operation; limbs constantly flexed. Last three days frequent urination; complete loss of appetite. *Status præsens:* Pinched features; limbs flexed; a very tympanitic abdomen, very sensitive to pressure; induration in right iliac region not well defined on account of tympanites; not much pain at time of operation unless abdomen was touched. Operation: Usual incision in right iliac region; upon entering the peritoneal cavity, the intestines were found agglutinated to the anterior abdominal wall. Upon severing the recent adhesions a large quantity of thin, purulent, very offensive pus escaped. Intestines found covered with large flakes of lymph. Finger was used in separating all the adhesions that could be reached, and finally a large abscess was opened which was in contact with the bladder. Glass drain was introduced into abscess cavity near bladder; four days later a smaller one took its place; gauze drain also used; appendix not removed. No enterolith found. Ten or twelve days after operation boy commenced to vomit and complained of pain in left iliac region. His bowels had not moved for four or five days, and all evidences of a second abscess to the left of the urinary bladder were present. With the intention of making a secondary operation, patient was again visited, but it was found that by pressure from the outside and insertion of another glass drain the second abscess could be drained without another incision. Boy had no further trouble. Jan. 24, 1894, boy is up and around and is feeling perfectly well.

Case 132.—Date of operation Nov. 25, 1893. Operator, Dr. Murphy. Charles B., aged 40 years; male. Case occurred in practice of Dr. Rohr. Patient gives a history which leads to suspicion that he had previous attacks of appendicitis. Present attack began forty-eight hours before operation, with sudden pain in abdomen, nausea, vomiting and moderate rise of temperature (about 101 degrees). On second day extreme tympanites developed, the pain had increased, no induration to be felt. Operation: Appendicisectomy; the general peritoneal cavity was opened, and a general suppurative peritonitis found to be present without adhesions. Pus covered the bowels to a great extent. The appendix was located, brought into the abdominal incision, ligated and amputated. The abdominal cavity drained with iodoform gauze. The temperature at no time was over 101 degrees, the pulse was very rapid, 140 at the time of operation. The appendix was gangrenous, not perforated, contained no foreign body. Patient had persistent vomiting for three days after operation, which then subsided and he made an uneventful recovery.

This is another illustration of extensive purulent infection of the peritoneal cavity forty-eight hours after the onset of symptoms, in which there was no perforation, but a gangrene of the wall. The bowel was eroded somewhat of its endothelium, but not sufficient to admit of the fatal sapremia.

Case 133.—Date of operation Nov. 28, 1893. Operator, Dr. Murphy. Alexian Brothers' Hospital. Thos. S., aged 32; Case occurred in the practice of Dr. Rohr. History: Patient states that he had two similar attacks. Present illness began November 26 with colicky pains after a dose of oleum ricini to move bowels. November 27, 10 P.M., pains had continued, accompanied by nausea and vomiting, and did not cease until November 28, 3 A.M. Pain localized in right iliac fossa. Examination: Tenderness and induration in right iliac fossa on pressure; temperature 104 before operation. Operation: November 28, 2 P.M. Usual incision; no circumscribed abscess; appendix almost entirely covered with omental adhesions. Had not perforated. However, pus oozed out through punctures made by forceps used for holding it up for ligation. Appendicisectomy; appendix found to contain about half a drachm of pus; its tissue was gangrenous. Appendix three inches long and thickness of little finger. Flakes of pus visible on opening peritoneal cavity. Time for entire operation, seven minutes. Temperature fell to normal after operation, and patient made an uneventful recovery.

Case 134.—Operation Dec. 19, 1893. Operator, Dr. Murphy. M. W., aged 28 years; female. Case occurred in practice of Dr. Berry. December 16 complained of being tired and feverish. December 17, slight soreness in right iliac region; December 18, tenderness over entire abdomen. Temperature 100 degrees, pulse 80. December 19, temperature 101 degrees, pulse 85, before operation. Operation: Lateral incision, intra-peritoneal, retro-cecal abscess around appendix; flakes of pus on bowels outside of abscess. Peritoneum protected with iodoform gauze. Abscess opened. Appendix adherent to posterior parietal wall, easily elevated and amputated. Drainage with iodoform gauze; recovery. Pathologic conditions: Circumscribed abscess; appendix perforated; flakes of pus on bowel outside of abscess.

Case 135.—Date of operation Dec. 20, 1893. Operator, Dr. Murphy. E., aged 26 years; female. History: December 7 typical attack. Pain at first general, later local; no tympanites; temperature 100 to 103 degrees in first forty-eight hours. First constipated, then had an attack of diarrhea. Marked induration over appendix. Operation: Lateral incision; protection of peritoneal cavity with iodoform gauze, and drainage of an intra-peritoneal abscess; glass drainage and iodoform gauze used. Glass drain removed in two days. Temperature remained at 101.5 degrees for ten days after operation; then ran up to 103 degrees, and remained so for forty-eight hours. Temperature again normal on twentieth day; recovery. Pathologic conditions: Intra-peritoneal abscess extending down into the pelvis; about six ounces of a very thick creamy pus containing the appendix escaped; latter was entirely gangrenous and perforated at its base.

Case 136.—Date of operation Dec. 22, 1893. Operator, Dr. Murphy. O. S., aged 20 years, male. Case occurred in the practice of Dr. Hoelscher. On November 22 patient was attacked with sudden, severe, colicky pains in abdomen causing indisposition for a couple of days, after which he was able to be about again. These attacks occurred occasionally for the following twenty-six days. At no time was he well, though able to be about. On December 18 the pain became extremely severe, was located in right iliac region, and was shortly followed by nausea and vomiting. It increased in intensity; the temperature rose to 101. This condition continued up to the time of operation, four days

later. Examination: Abdomen tympanitic, uniformly distended, no induration; excessively tender in right iliac region. Operation: Lateral incision; general peritoneal cavity opened; an abscess of considerable size was seen situated around the head of the colon and in the retro-cecal fossa. General peritoneal cavity protected with iodoform gauze packing; abscess opened; about eight ounces of pus escaped, and in it the gangrenous appendix. Glass drain; recovery. Pathologic conditions: Appendix completely gangrenous and separated from its attachment at the base; all of its coats were macerated except the peritoneal, which could be filled with water and resembled the rubber of a toy balloon. Two fecal stones.

Case 137.—Date of operation Dec. 29, 1893. Operator, Dr. Murphy. Mrs. G., aged 24 years. When performing laparotomy for tubal disease, the appendix was found very much elongated, congested, swollen and adherent to side of uterus and proximal end of right tube, causing traction upon cecum, and undoubtedly accounted for some of the symptoms from which she was complaining; recovery.

Case 138.—Date of operation Dec. 31, 1893. Operator, Dr. Murphy. Case occurred in practice of Dr. Weatherly. J. L., aged 21 years; male. Patient was seized with a chill December 29; severe pain when walking. This pain lasted through the night, and was accompanied by vomiting and fever. Dr. Weatherly saw the case December 30 at 8 P.M. Patient was sent to hospital December 31, P.M., temperature 101 degrees, pulse 83. Operation: Appendix found partially adherent to liver, two inches necrotic, but not perforated; not covered by omentum. No foreign body; when appendix was elevated, pus oozed through the pores in its wall, showing that perforation was about to take place. The mucous membrane had entirely disappeared and was commingled with the fluid débris. No pus outside of appendix; twenty-four hours' drainage; recovery.

Case 139.—Date of operation Jan. 4, 1894. Operator, Dr. Murphy. D. H. M., aged 25 years; male. Case occurred in practice of Dr. Geo. Barnett, Ishpeming, Mich. Recurrent appendicitis. First attack May 30, 1891, sick for six days; second attack Sept. 23, 1892, sick for ten days; third attack Dec. 24, 1893; began with sudden severe pain in the abdomen, followed by vomiting, great tenderness; temperature 103 degrees; after two days, temperature dropped to 99.5 degrees, and remained so until December 31, when it suddenly rose to 104.2 degrees, with pulse 120. Marked tumor was present in right iliac region at that time. Operation was urged by the Doctor and consented to. Examination: No tympanites, no general abdominal tenderness, a distinct tumor in right iliac region, which appeared to come close to the skin; temperature 100 degrees. Operation: Lateral incision into an abscess, which had already penetrated the walls of the abdomen and invaded the subcutaneous cellular tissue. This opening was enlarged by the finger, and the abscess cavity within the abdomen examined. No fecal stone. Appendix could not be located. Drainage; recovery.

Case 140.—Date of operation Jan. 6, 1894. Operator, Dr. Murphy. L. B. C., Detroit, Mich., 35 years of age; male. Case occurred in the practice of Dr. Riese. Patient was attacked with severe pain in the right side of abdomen, followed by nausea and severe vomiting. Temperature on morning of operation 101 degrees; no induration; no tympanites. A very sensitive point could be felt in right iliac region; the appendix could be outlined. Operation: Lateral incision: Appendicisectomy; gauze drainage; sutures inserted but not tied. The appendix was not adherent; appeared normal on its peritoneal surface, although very hard to the touch. Mucous membrane inflamed, swollen, gangrenous in spots, contained a number of seeds. Gauze drain removed in twenty-four hours; sutures tied; recovery.

Case 141.—Date of operation Jan. 15, 1894. Operator, Dr. Murphy. Alexian Brothers' Hospital. C. G., aged 30 years; male. Present illness began fifteen days before operation with pain in abdomen, accompanied by fever and sweats. The pain gradually centralized in the right iliac region; was able to be up and about and came to office day of operation. Examination: No tympanites; induration and tenderness in the ileo-cecal region, extending down to pubes. Nothing to be felt from the rectum. Operation: Lateral incision; general peritoneal cavity opened; tip of appendix firmly adherent over iliac vessels; liberated with difficulty; body free; removed. Sutures inserted, but not tied; iodoform gauze drain; the distal half inch of a very much elongated appendix (four inches) was swollen to three times the size of the remaining portion. Minute gangrenous spots on mucous surface. No perforation; gauze drain removed in twenty-four hours, and sutures tied. Recovery.

Case 142.—Date of operation Jan. 30, 1894. Operator, Dr. Wittwer. L., aged 30 years; male. Occurred in the practice of Dr. Bergeron. Three days previous to operation patient was suddenly attacked with pain in right iliac region; this was followed within an hour by vomiting; temperature 102 degrees. The following day the abdomen was tympanitic and very tender on right side. On morning of the third day, patient had a severe chill. Temperature at time of operation 100.5 degrees. Operation: Lateral incision over induration which was more marked under the anesthetic. General peritoneal cavity opened. Flakes of pus over cecum and omentum. Appendix adherent, necrotic; small circumscribed abscess at base, containing thin sero-purulent fluid. Adhesions liberated; appendix ligated; iodoform gauze drain; recovery. Pathologic conditions: Appendix perforated in one spot, also showing two other gangrenous places ready to perforate.

Case 143.—Date of operation Feb. 6, 1894. Operator, Dr. Murphy. J. M., aged 19 years; female. Case occurred in practice of Dr. Berry. Primary attack. Present illness commenced three and one-half days prior to operation, with intense pain in right iliac region, which rapidly spread over entire abdomen. Nausea and vomiting followed within an hour. All these symptoms and tympanites were present on second day. Vesical tenesmus severe. Examination: Time of operation, temperature 102 degrees, pulse 120. Very anxious expression; mental exhilaration, great thirst, gulping, extreme tympanites; a complete absence of peristalsis; not a sound could be heard in any portion of the abdomen, for fully ten minutes. No dulness either on light or deep percussion. Operation: Lateral incision; general peritoneal cavity opened; at once a small quantity of sero-purulent fluid escaped, which was very offensive. There were no limiting adhesions. Every separation of the coils of intestines was followed by an additional discharge. Douglas' pouch full of pus. Appendix adherent to fundus of bladder, liberated and removed without rupturing. Iodoform gauze and glass drainage. Intestines denuded of their endothelium, resembling a blistered surface. Symptoms of sapremia continued and patient died twenty-two hours after operation. General suppurative peritonitis. Pathologic conditions: Appendix enlarged to size of thumb; gangrenous, full of pus; enterolith size of grape seed; no perforation, still, general suppurative peritonitis.

Case 144.—Date of operation Feb. 9, 1894. W., aged 19 years; male. Operator, Dr. Murphy. Case occurred in the practice of Dr. J. M. Auld, who made a diagnosis and advised operation three hours after onset of attack for which he deserves the congratulations of the profession and the patient. Patient had a similar attack (first one) a year ago, and a second three and one-half months before the present one. He was operated upon at the time of the second attack; a circumscribed abscess was drained; the appendix was not removed. The present attack began day before operation with sudden pain, followed by nausea and vomiting. The patient was brought to the Cook County Hospital on the first day of sickness, and early the next morning he was operated upon, eighteen hours after onset. Temperature at the time of operation 99 degrees, pulse 100. Slight tympanites; no induration to be felt. Operation: Lateral incision an inch towards the median line from the old scar. General peritoneal cavity opened. Sero-purulent fluid around the head of the colon. Peritoneum congested, but not abraded. The appendix was situated across the iliac vessels, adherent behind, half of it hung over brim of pelvis. Appendix and cecum were elevated out of the wound. About three drachms of sero-purulent fluid was sponged out. There were no limiting adhesions around the pus. The seat of penetration of infection could be easily recognized on the peritoneal surface of the appendix. Appendix ligated, amputated; gauze drain; recovery. Pathologic conditions: The proximal two-thirds of the mucous membrane of appendix greatly swollen. A small ulcer existed where the infection penetrated the wall, but there was no perforation. What could have been the result in this case under expectant treatment?

Case 145.—Date of operation Feb. 12, 1894. Operators, Drs. Murphy and Verity. Mrs. E. P., aged 42 years. Patient had first attack in July, 1893. Had a second attack Jan. 14, 1894, which commenced with severe pain just below the margin of the last rib. This was accompanied by nausea, but no vomiting. For the first few days there was fever; temperature not taken. This subsided, but the pain and tenderness continued until the time of operation. Patient

had never been jaundiced. Examination: With anesthetic; an induration extending from the margin of the ninth costal cartilage downward three inches could be felt distinctly. It was stationary during the respiratory act. It could not be separated from the abdominal wall, nor could it be displaced to the left. It could not be separated from the kidney, nor could the kidney be outlined. Operation: Temperature at the time of operation normal. Incision over induration. Peritoneal cavity opened. Colon was found adherent to lateral wall of the abdomen, just below the margin of the ribs. The adhesions were separated and the remains of an abscess detected; no pus; the cecum was adherent to and folded upon the posterior surface of the ascending colon. The appendix was found perforated at its tip communicating with the abscess cavity. It could be seen where the abscess had emptied into the posterior wall of the colon at its hepatic flexure. Appendix ligated, amputated. Recovery.

Remarks: This is the first time I have found the cecum folded on to the posterior surface of the colon. The abscess was situated just below the edge of the liver.

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

The Third Annual Meeting Held in Chicago, Sept. 12, 13 and 14, 1893.

AUGUSTIN H. GOELET, M.D., President.

(*Continued from page 391*).

DISCUSSION.

DR. MORTON thought all must feel gratified at having papers presented to the ASSOCIATION from such eminent foreign writers.

THE PRESIDENT exhibited an apparatus which the Kidder Manufacturing Company had constructed for him. It was a commutator attached to a motor so that an alternating current could be sent through the primary of his induction coil. The secondary current was used in the usual manner. If the alternations be made too frequently, sufficient time is not allowed for complete magnetization and de-magnetization of the core and the effect is nil. When revolving 2,400 times per minute, the apparatus give 800 alternations per second. At this speed with five Leclanché cells in the primary, the current was almost imperceptible to the hand with the bipolar electrode, but produced a very appreciable effect in the vagina. The reed vibrator on his faradic apparatus was said to give 300 to 350 vibrations per second, but on comparing it with the interruptions obtained from other forms of apparatus, it seemed to him that the frequency was not so great.

The speaker said he thought the alternating current through its action upon the vaso-motor supply relieved pelvic congestion and pain consequent upon it. He had been able repeatedly to cure active endometritis by bipolar faradization. This might seem a remarkable statement, but in many instances endometritis is secondary to pelvic congestion, and by relieving this congestion the endometritis is cured. In many instances where the canal is not patulous, occasional applications with the negative pole were given to facilitate drainage, but these same applications had not proven, in themselves, competent to bring about a cure. It is in this way that he claimed to cure certain diseased conditions of the appendages. Having first assured himself of free drainage from the uterus he was satisfied that in many instances the tubes could be emptied into the uterus. He believed with Bland Sutton that in the great majority of cases the tube is only obstructed by tumefaction of the mucous membrane, and if this be removed, a result quite possible by a proper application of electricity, drainage can be secured through the uterine cavity. It is thus, in direct obedience to one of the important laws of surgery—the maintenance of drainage—that he cured these cases, using electricity to accomplish this end.

DR. KELLOGG said he had been much interested in the apparatus just described, and in the remarks. He had been doing work in this line. About a year and a half ago he began experimenting with the arc light current of 12,000 alternations per minute. As would be seen from the graphic curve which he exhibited, it was in reality a sinusoidal current. He first uses a rheostat, reducing the current by a transformer to fifty volts, and then passing it through an induction coil. The curve shown was from a secondary current from the alternating arc light current. It produces a very strong humming sound, and this sound is present with an instrument made without a rheotome. This point is very interesting. Tests made with the esthesiometer showed that in some cases the effect of this current was to reduce sensation one-half. The apparatus described by Dr. Goëlet really gave an interrupted current.

(The discussion was here interrupted to allow of Drs. Morton and Kellogg demonstrating to the members individually the character of the sinusoidal currents produced by their machines).

DR. MARTIN asked why the muscular contractions were so much more distinct in one arm than in the other.

DR. MASSEY thought it questionable whether the amperage of the current from Dr. Morton's machine would be sufficient for practical purposes, and he asked whether it could be made as good as Dr. Kellogg's.

MR. SMILES replied that it was a simple matter of supply of current to the field.

The power of the machine was as great as could be used upon any patient, and quite sufficient for all purposes.

DR. A. LAPTHORN SMITH said it had been claimed that the sinusoidal current increases nutrition, but without wishing to dampen the enthusiasm of some of our investigators, he would remind all that the same increase in nutrition—increased interchange of oxygen and excretion of urea—is accomplished by walking upstairs. The speaker asked why the interruptions of the fine wire coil produced anesthesia. The point raised that it is not the length of the fine wire, but the number of turns of wire which gives the peculiar effect is valuable, and is certainly not generally known. He had found by personal experiment that a piece of ferrotype metal would give very fine buzzing vibrations, the tone produced being like that made by a mosquito.

After a careful reading of Apostoli's monograph, he found that every effect claimed for the sinusoidal current is obtained by fine wire faradism. After the enthusiasm over the sinusoidal current has subsided, we shall probably come back to the fact that fine rapid vibrations are like the rapid strokes of a hammer, which may be used to drive in a nail with very little force, if the blows be very frequently repeated.

It is the alternate relaxation and contraction of the muscles which increases their nutrition. A muscle is weakened by prolonged contraction, but every time it relaxes and contracts, owing to the valves in the veins, the blood is hurried on towards the heart. Physiology teaches that one of the principal aids in circulation is muscular contraction, and therefore the current which causes spasm of a muscle is defeating our purpose. From this it follows that the current must be decidedly interrupted.

DR. KELLOGG then showed his method of obtaining a graphic record of the sinusoidal current.

DR. HERDMAN criticised the demonstration by saying that the patient should be interpolated.

DR. KELLOGG replied that this would not make the slightest difference in the curve.

DR. HERDMAN said he had had very little personal experience in dealing with these high frequency currents. He had been using for the past three years the Thomson-Houston dynamo current, giving alternations of about 10,000 per minute. This is the current used for incandescent lighting, only reduced to fifty-two volts in his office. It is an agreeable and bearable current, but has a peculiar effect on the vaso-motor system. Dr. Goelet had referred to the effect on the vascular tissue. In one of his patients this result was exceedingly remarkable. The patient was suffering from a peculiar nervous prostration, associated with purpura and frequent suffusions about the face, ears and eyes. To tone up his vaso-motor constrictors, every form of electricity at hand was tried, but nothing exerted such a satisfactory effect as this dynamo current; it seemed to tone him up and relieve his mental depression more rapidly than anything else. Its nutritional effect is no doubt due to an immediate action on the vaso-motor system, and perhaps directly upon the muscular structures. He could not account for the increased consumption of oxygen and excretion of urea except in some such way; certainly it is not in the action upon the striped muscular tissue.

Within the range of harmonics, a certain range of vibration can be determined accurately by musical tones. Some of the statements in Dr. Hutchinson's paper he considered rather speculative, but we must admit that the vibrations producing musical tones do have some special physiologic effects, but the range is limited, for we obtain remarkable effects in interruptions beyond those corresponding to musical tones.

Dr. Engelman thought the faradic current had been handled in a pitiable way, and new systems brought forward. He had seen the work of these foreign investigators, and had examined their patients, yet he had seen no results which he could not obtain from the faradic current; in fact, they claim very little.

The faradic apparatus has been spoken of as it was formerly. For instance, Dr. Kellogg objected to it, and very justly, because the vibrator gives an irregular current. We know that every variation of the vibrator changes the current, and it is for these reasons that he had introduced the instrument with the separate current to actuate the vibrator, and a separate coil current. For a rapid rate of vibration, a strong current is required to actuate the vibrator, and hence a mild current can not be used on the patient. If they are separated, one can obtain any rate of interruption and yet not affect the coil current. Determining the rate of vibration by the musical note is good in theory, but it is bad in practice on account of the differences in ears, and the time consumed in testing by this method. Faradism, as it will probably be used in the future, will do away with these objections and faradic apparatus thus regulated will enable one to do a vast deal more than at present. Our committee on coils has told us nothing about coils; we have simply heard objections to these instruments. We must have coils of definite construction for definite purposes.

The speaker said he had had no experience with the sinusoidal current, but from what he had seen of it from those who introduced it, he had not been tempted to experiment with it.

Dr. Morton, in closing the discussion, said it had brought out many new lines of thought which amply justified the expenditure of so much time upon it. In regard to the theory of interfering vibrations referred to in Dr. Hutchinson's paper, if he understood the author correctly, we are given 540 vibrations per second, and are asked to assume that this rate and that of nerve impulses—11 to 19 per second—interfere. This he could not comprehend. He must now, as last year, deprecate the fact that electro-anesthesia was not demonstrated to the Association, for many, including himself, do not believe that electricity can produce a true anesthesia, although admitting moderate analgesic effects.

He thought Dr. Engelman's position was well taken, for the criticisms concerning induction coil currents were based on the assumption that those currents were excited by the ordinary vibrator, which we all admit is very unreliable and unsatisfactory.

The following paper on

PRESENT POSITION OF THE ELECTRICAL TREATMENT IN ECTOPIC GESTATION,

by Dr. A. Brothers of New York City, was then read by title:

This treatment was first employed by Bachetti in Italy in 1853, and later in England in 1866, by Braxton Hicks. In this country the first case treated by this method occurred in the practice of Allen of Philadelphia, in 1869, and since then it has remained an almost purely American plan of treatment. In a paper which I wrote five years ago, (*American Journal of Obstetrics*, May, 1888) I collected statistics of forty-three cases in which this treatment was resorted to with only one death. In a later paper on the "Subsequent Behavior of Cases Treated by Electricity," (*American Journal of Obstetrics*, 1890, Vol. xxiii, p. 113) I find that twenty-five patients whom I had been able to trace were doing well after a lapse of one to eight years, and that not one of this number had been compelled to undergo secondary operations. Many of these patients, it is only fair to add, carried traces of the old trouble but they gave rise to no inconvenience.

Within the last few years the epidemic of laparotomy fever which originated in Europe has invaded our shores and spread over our continent to such an extent as to temporarily displace the electrical treatment from its deserved position. As a result, the literature of the past few years shows a smaller number of published cases than we should have expected, judging from the past history of this treatment. There still exists, however, a certain proportion of very able physicians who continue to adhere to their convictions and employ the electrical method under judicious restrictions wherever it is properly indicated.

To bring the subject partially down to the present, I have looked over the literature at my command and have been able to prepare the accompanying table, which represents nearly all the cases which have been published up to the time of writing:

This table represents eighty-five cases of extra-uterine pregnany in which electricity was employed to destroy the fetus. The list is not complete, for a certain number of cases must have been overlooked, and other cases have not as yet been published.

In two cases (60 and 61) the treatment apparently failed in the hands of very able men—Coe and Wenning—but subsequent laparotomy showed the diagnosis to have been at fault, the pregnancy being normal in both cases. Coe saved his patient after she aborted, but Wenning, who had resorted also to aspiration, was unfortunate in losing his case. In the case of Lewis (81) electricity was discarded and laparotomy done. This patient recovered. In one of Blackwood's cases (62) the extra-uterine mass had shrunk two years later one-half in size and he advised the use of galvanism to assist in its absorption but the patient fell into the hands of a specialist who performed laparotomy from which she died. In none of these cases did the electrical treatment do any harm.

Collapse during the employment of this agent has occurred in the cases of Mundé (23), Janvrin (34), and Coe (54), but only one of these—that of Janvrin—proved fatal. In two of Blackwood's cases (63 and 64) symptoms of internal hemorrhage (such as shock, faintness, debility, etc.), supervened but both patients nevertheless made good recoveries under the electrical treatment.

Aspiration was associated with electricity in the three cases of Hicks (2), Lusk (30), and Wenning (61). Hicks and Wenning lost their patients—the latter supplementing the aspiration by a laparotomy—but Lusk saved his case after the fetus was discharged through a vaginal rent.

In five cases—those of McBurney (6), Garrigues (29), Grandin and Cole (83), Blackwood (67), and Carriker (84)—the fetus was displaced from the tube into the uterine cavity. These cases were all of the interstitial variety.

The case of Landis (5 and 11) is unique in that the accident of extra-uterine pregnancy occurred twice in the same patient and was twice successfully treated by electricity.

In Westcott's case (17) the extra-uterine pregnancy was associated with normal pregnancy which was not disturbed by the electrical treatment and the patient of Bierwirth (52) was simultaneously suffering from typhoid fever.

After the death of the fetus by electricity it was discharged through vaginal or rectal rents in four cases—those of Lusk (30), Chadwick (39), and Blackwood (65 and 66)—with ultimate recovery of all the cases.

Only one death—that of Janvrin (34)—can be attributed to the use of electricity *in seventy-eight cases where this agent has been used without puncture;* and in this case there were symptoms of hemorrhage previous to the resort to electricity.

The nature of the current employed has not been the same in the reported cases. Faradism was employed in twenty-seven cases, galvanism in twenty-five cases, either current (not stated) in nine cases, both currents successively in sixteen cases, electro-puncture in seven cases, statical electricity in one case. Of the seven cases treated by electro-puncture there were five recoveries and two deaths. This proves the method to be exceedingly dangerous—the bad results being due rather to the accompanying puncture than to the electricity. Similar bad results have followed the use of simple puncture with aspiration or with the injection of drugs, even where no electricity was used. In my first paper I referred to fourteen cases of failure or death after the use of simple tapping or the injection of drugs.

Although the electrical treatment is chiefly American, my table shows the interesting facts that it has been employed five times in Russia, five times in England, and once in Italy, Canada, Germany, France and Australia.

The treatment of extra-uterine pregnancy by electricity has in late years been so violently assailed that it may be well just here to quote the most recent opinions of some of the most eminent practitioners and writers who continue to approve of the method. Playfair, in his last edition, ("A Treatise on the Science and Practice of Midwifery," London, 1889) says: "This practice is perfectly safe, and there can be no rational objection to its being tried." Lusk, in the last edition of his work on "The Science and Art of Midwifery," (New York, 1892) says: "All men are not experts in pelvic surgery. The danger which threatens the life of the patient is often imminent and assistance from afar is not always easy to obtain. Under these conditions the indication for treatment is plainly the adoption of measures to destroy the life of the fetus, and thus, by arresting the growth of the ovum, to diminish the chances of rupture and

Table of Cases of Ectopic Gestation Treated by Electricity (1853–1892).

No.	Case of	Nation'l'ty	Reported in	Current used.	Result.	Remarks.
1	Bachetti	Italy	Trans. Am. Gyn. Soc., 1882	Electro-puncture	Recovery	
2	Hicks	England	" "	Faradism	Death	Puncture resorted to after electricity was abandoned.
3	Allen	U. S.	" "	"	Recovery	
4	Allen	"	Jour. of Obst., 1872, Vol. 5	"	"	
5	Landis	"	Ohio Med. & Surg. Jour., Oct., 1877	"	"	
6	McBurney	"	N.Y. Med. Jour., March, 1878	Galvanism	"	Fetus discharged through vagina.
7	Reeve	"	Trans. Am. Gyn. Soc., 1879	Faradism	"	
8	Harrison	"	" " 1882	"	"	
9	Lusk	"	Jour. of Obst., April, 1881	"	"	
10	Wilson	"	Trans. Am. Gyn. Soc., 1882	"	"	
11	Landis	"	Med. News, Aug. 8, 1882	"	"	Same as No. 5 seen four years later.
12	Billington	"	Trans. Am. Gyn. Soc., 1882	Galvanism	"	
13	B. McE. Emmet	"	Jour. of Obst., Feb., 1882	"	"	
14	Garrigues	"	" Sept., 1882	Faradism	"	
15	Herrick	"	Trans. Am. Gyn. Soc., 1882	Galvanism	"	
16	Hochmann	Germany	Allgem. Med. Centztg., April 21, 1883	Statical electricity	"	
17	Westcott	U. S.	Med. and Surg. Electricity, by Beard & Rockwell	Galvanism	"	Associated normal pregnancy not disturbed.
18	Rockwell	"	" "	"	"	
19	Sims	"	" "	"	"	
20	Cushner	"	Trans. Am. Gyn. Soc., 1881	Faradism	"	
21	Cocks	"	" "	" later Galvanism	"	
22	Lambert	"	" "	Galvanism	"	
23	Mundé	"	Jour. of Obst., Oct., 1884	" later Faradism	"	Collapse after first application.
24	Berlin	"	Bos. Med. & Sur. J., Sept., 1884	Galvanism	"	
25	Sibbald	"	Polyclinic, 1884, No. 15	"	"	
26	Briggs	"	Med. News, July 11, 1885	Faradism	"	
27	Stoddard	"	" "	"	"	
28	Lusk	"	Jour. of Obst., Aug., 1885	"	"	
29	Garrigues	"	Med. News, Dec. 12, 1885	"	"	Fetus expelled into uterine cavity, continued to grow, and born alive at eight months.
30	Lusk	"	Med. Rec., Jan. 23, 1886	"	"	Previous puncture; discharge of fetus and removal of placenta through vaginal rent.
31	Goelet	"	" June 26, 1886	Galvanism	"	
32	Aveling	England	Brit. Med. Jour., Dec. 4, 1886	Faradism	"	
33	Gardiner	Canada	" "	"	"	
34	Janvrin	U. S.	Trans. Am. Gyn. Soc., 1886	Galvanism	Death	Previous collapse. After third application death from internal hemorrhage.
35	Petch	England	Brit. Med. Jour., Dec. 4, 1886	Galvano-puncture	Recovery	
36	Trush	U. S.	Jour. of Obst., Dec., 1886	Faradism	"	
37	Van de Warker	"	Trans. Am. Gyn. Soc., 1887	"	"	
38	Sims	"	Annals of Gyn., Jan., 1888	Galvanism	"	
39	Chadwick	"	Trans. Am. Gyn. Soc., 1887	"	"	Fetus later extracted through vaginal rent.
40	Mann	"	Med. News, July 11, 1885	Faradism	"	
41	Page	"	Jour. of Obst., April, 1887	Galvanism	"	
42	Harrison	"	" "	"	"	
43	A. Brothers	"	" May, 1888	Faradism	"	
44	Taylor	"	Med. Rec., June 29, 1889	Galvanism	"	
45	Walker	"	" Nov. 16, 1889	Faradism	"	
46	Galabin	France	Arch. de Tocologie, xvi, 1889	Galvano-puncture	"	
47	Kletzsch	U. S.	Jour. of Obst., 1888, Vol. xxi.	Faradism	"	
48	Buckmaster	"	Med. News, 1888, Vol. liii	Galvanism	"	
49	Duncan & Stevenson	England	Barthol Hosp. Repts., 1883	Faradism, later Galv.-punct.	Death	
50	Boulton & Stevenson	"	Brit. Gyn. Jour., 1888, Vol. iv.	Electro-puncture	"	
51	Benton	U. S.	Gaillard's Med. Jour., 1888, p. 548	Faradism	Recovery	
52	Bierwirth	"	" " p. 552	"	"	Complicating typhoid fever.
53	Edebohls	"	Med. Rec., Dec. 7, 1889	"	"	
54	Coe	"	Jour. of Obst., 1890, p. 394	"	"	Rupture of sac; recovery without laparotomy.
55	Hanks	"	" " p. 397	Galvanism	"	
56	Hanks	"	" "	"	"	
57	Hanks	"	" "	"	"	
58	Malcolm McLean	"	" " p. 397	"	"	
59	Malcolm McLean	"	" "	"	"	
60	Coe	"	" " p. 95	"	"	Failing with electricity, performed laparotomy and found normal pregnancy; abortion; recovery.
61	Wenning	"	" " p. 155	Faradism, later Galvanism	Death	Later aspiration; then laparotomy when dextro-torsion of the uterus was found.
62	Blackwood	"	Times & Reg., 1890, Vol. vii, also private correspondence	" "	Recovery	Died two years later during laparotomy done to remove the remaining mass.
63	Blackwood	"	" "	" "	"	Internal hemorrhage from previous rupture.
64	Blackwood	"	" "	" "	"	" " "
65	Blackwood	"	" "	" "	"	Fetal debris discharged through rectum.
66	Blackwood	"	" "	" "	"	Fetal debris discharged through vagina.
67	Blackwood	"	" "	" "	"	Fetus expelled into uterine cavity.
68 to 74	Blackwood	"	" "	" "	"	
75	Smouse	"	Trans. Iowa Med. Soc., 1890 Index Medicus, 1890	Faradism	"	
76	Martin	Australia	Aus. Med. Gaz., Vol. ix, p. 163	Faradism	"	
77	Nedswetsky	Russia	Ande. Gyn. et Obst., 1890, p. 44	Galvanism	"	
78	Nedswetsky	"	" "	"	"	
79	Warnek	"	" "	Electro-puncture	"	
80	Kalabine	"	" "	Galv., later Electro-puncture	"	
81	Lewis	U. S.	Trans. Col. Phys., 1891	Faradism	"	Abdominal section after discarding electricity.
82	St. John	"	Jour. Am. Med. Assn., 1892	Galvanism	"	
83	Grandin & Cole	"	N. Y. Gyn. & Obst., 1892, p. 31	"	"	Fetus expelled into uterus, where it continued to grow.
84	Carriker	"	Eclectic Med. Jour., 1892	"	"	Fetus expelled through uterus.
85	Nedoroloff	Russia	Med. Obozt. Mosk., 1892 Index Medicus, 1892	"	"	

hemorrhage." In a personal interview with Prof. Lusk he stated that he was as much interested in the electrical treatment as ever, but of late had only met cases in which previous rupture allowed of none but operative interference. He was perfectly convinced of the efficacy of electrical treatment in suitable cases and was perfectly sure that in the cases in which he had successfully resorted to it there was no possibility of a mistake in diagnosis.

Prof. T. G. Thomas, early in the summer, also told me that he continued to be a firm believer in the efficacy of electricity in the treatment of ectopic gestation. In the last edition of his work on "Diseases of Women," (Philadelphia, 1891), revised by P. F. Mundé, he says: "At one extreme, stand able and conservative practitioners who appear to favor the position, that as a very general rule, we should stand calmly by with folded arms and accept without effort or resistance the terrible chances of death which attend these cases. At the other, we see enthusiastic ones with strong surgical proclivities, who would apparently resort to laparotomy in every case in which diagnosis is possible. On a middle ground, one lying between these extremes, the truly conservative surgeon will find his appropriate position."

Although Pozzi in his "Treatise on Gynecology" (American Edition, New York, 1892) condemns the use of electricity, the able translator of this work (Wells) says: "If we have a case of extra-uterine pregnancy in the early months it is safe to destroy the fetus by electricity and keep the patient in bed until absorption has noticeably commenced."

Parvin in his work on "The Science and Art of Obstetrics" (Philadelphia, 1890) says: "Throwing aside all doubtful cases, there remains a strong argument from actual experience in favor of the treatment of ectopic gestation, prior to the rupture of the fetal cyst, by electricity."

The works on electricity in its relation to gynecology —such as those of Goelet ("The Electro-Therapeutics of Gynecology," Detroit, 1892) and Grandin and Gunning ("Practical Treatise on Electricity in Gynecology," New York, 1891)—are likewise strongly in favor of the employment of electricity in the treatment of early cases of ectopic gestation. To save entering into further detail, I will simply add that authorities like Byford, Mann, Skene and Wilson have also within the past few years expressed themselves in favor of this plan of treatment.

The Boston Medical Society at its meeting held on Nov. 12, 1892, received the report of the chairman of a committee appointed to investigate the present condition of medical opinion with regard to the subject of extra-uterine pregnancy (E. Reynolds, *Boston Medical and Surgical Journal*, January, 1893, Vol. cxxviii, p. 107). The report reads as follows: "Immediate celiotomy, so soon as the diagnosis is established, is then, in the judgment of your committee, the only treatment which should be considered before rupture of the tube." If this committee can spare the time to study the facts gathered in this paper, I think it may in its charity modify its former conclusion and allow the electrical method a small place in the treatment of some cases of extra-uterine pregnancy. The fact is that most of those loudest in denouncing and ridiculing the electrical treatment have never tried it. The present paper attempts to deal with facts and not opinions—and facts will ever remain indisputable.

The eminent English laparotomist, Lawson Tait, has recently put forth the claim that feticide in these cases is unjustifiable and criminal. We can only answer to this highly moral objection that the majority of physicians, like the majority of the laity, will always continue in the future, as they have in the past, to consider the interests of the mother as paramount to those of the fetus.

There can be no question that a case of extra-uterine pregnancy in the early months ought to be terminated as early as discovered. If this can be done with safety to the mother we are justified in sacrificing the interests of the fetus. If this can be done without a mutilation of the mother we ought to prefer such a method to an operative procedure. And if such a method has been proved to be fairly free from risk, we certainly ought to resort to it. And herein lies the chief fact to be gleaned from this article, viz.: *Beyond one death in seventy-eight cases, no injury has ever been done the mother after the use of electricity.*

Moreover, where the electrical method has been abandoned for subsequent laparotomy—as in the cases of Coe (60) and Lewis (81)—the patients have done well and no harm has come from the previous treatment. Hence, although in the eyes of some it has appeared "ridiculous" and "cowardly" and the product of "ignorant obstinacy," the treatment continues to assert itself as a simple, innocent and harmless procedure which has its own proper sphere of usefulness.

What is this sphere? A case of extra-uterine pregnancy of less than ten or twelve weeks' standing—even if the diagnosis is somewhat doubtful—in which the symptoms of rupture are absent or very slight, is the proper one in which to employ this treatment. The method of Rockwell, in which the galvanic current is gradually increased to forty or fifty m. a. and then as gradually diminished, is probably the most rational. The same plan could be followed with the faradic current. Electro-puncture and aspiration should be unqualifiedly discountenanced. If it is possible to treat these cases having all the preparations ready for a laparotomy it will remove the last vestige of doubt. For the only fatal case which died of internal hemorrhage after the use of electricity required forty minutes from the beginning of the hemorrhage until the fatal issue. This was certainly a sufficient length of time—if preparations had been made—to open the abdomen and arrest the hemorrhage.

(*To be continued.*)

The Royal Society of New South Wales.—ORIGINAL RESEARCHES. The Royal Society of New South Wales offers its Medal and £25 for the best communication (provided it be of sufficient merit) containing the results of original research or observation upon each of the following subjects:

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All communications to be addressed to the Honorary Secretaries. T. W. E. DAVID, J. H. MAIDEN, } Hon. Secs.

The Society's House, Sydney, Dec. 13, 1893.

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SATURDAY, MARCH 24, 1894.

PROGRESS IN MEDICAL EDUCATION.

Judged by some recent jeremiads on the subject, progress in medical education in the United States must be something like the result obtained by that ingenious Irishman who reversed the connections of his gas meter and so brought the company in his debt at the end of the month. Like the Frenchman's crab the progress, apparently, walks backward.

As shown in a previous number of the JOURNAL the facts and figures set forth in the Report on Medical Education by the Illinois State Board of Health effectually disproves the assertions made as the occasion for these lamentations. Some of the statements are specifically dealt with in the Report. For example: In an address before the Harvard Alumni Association the speaker, after asserting that the chief difficulty in the way of a high standard of medical education in this country arises from the great number of medical schools—which is undoubtedly true—rather illogically and quite inaccurately said:

"Some years ago there were nearly three hundred [medical schools]. Now there are not far from one hundred and fifty and they are dying at about the rate of three a year.

One of the tables in the Report shows that the greatest number of regular medical schools in this country was 111 in 1890, and that for the past twelve years there has been an average annual increase of 2.2 regular medical schools, instead of deaths, "at about the rate of three a year."

In another recent contribution to the study of medical education in the United States, based on the Report of the U. S. Commissioner of Education, 1889–90, the following conclusions are drawn:

"1. The average course of study in the United States is still less than three years, i.e., eighteen months.

"2. The antiquated method of repetition [of lectures] still prevails in the majority of medical schools.

"3. The number of students of medicine is absolutely increasing, but (in relation to population) relatively diminishing. The homeopathic and eclectic schools are hardly holding their own.

"4. The education of the average medical student is superior to that of ten years ago; but the ratio of matriculates having degrees in science or arts is actually diminishing even in the richest, best located and only endowed medical schools."

If these conclusions were based on existing facts the outlook for medical education in this country would, certainly, be most discouraging. The facts and figures given in this most painstaking and exhaustive Report do not, however, warrant the conclusions—rather do they sustain a diametrically opposite set. Thus, instead of the general assertion that "the average course of study in the United States is still eighteen months," the Report shows that of the existing 136 medical schools in the United States in 1893, 115 (nearly 85 per cent.) require three or more years of study and of this number 70 (over 50 per cent.) require four or more full years of study.

Instead of repetitional lectures "in the majority of medical schools," only five out of the 136 existing schools follow this antiquated method, to-wit: Three regular schools and one eclectic in Georgia and one newly-organized homeopathic school in Illinois.

Whatever may have been the fact as to the number of students of medicine at some remote period, it has not been true for the last half dozen years or more that the number is "(in relation to population) relatively diminishing." At the sessions of 1885 the total attendance was 10,891—9,245 regular, 1,032 homeopathic, 614 eclectic. During the sessions of 1893, the attendance was 18,910—16,759 regular, 1,410 homeopathic, 741 eclectic. These figures show gains in eight years of 73.6 per cent. in the total attendance—81.2 per cent. for the regular students, 30.6 per cent. for the homeopathic, 20.6 per cent. for the eclectics—an average annual increase of 9.2 per cent. during the period. The average annual increase of population during the same period was less than 2.5 per cent. So that instead of there being a diminution of students of medicine in relation to population, there is a relative increase nearly four times greater than that of population. As a matter of practical interest to the profession it may be noted that there is an average increment of nearly 6,000 new home-made physicians every year, and that while the population increased 24.8 per cent. during the decade 1881—1890, the number of newly-graduated physicians increased over 50 per cent. during the same period; last year, 1893, the increase was a trifle over 8 per cent. As is quaintly observed in the Report: "There would still seem to be doctors enough to go 'round."

In the final conclusion, above cited, it is conceded that "the education of the average medical student is superior to that of ten years ago," even though he does not possess the outward and visible sign thereof in the form of a diploma of science or arts. But the value of this concession is lessened by the wail over the declining "ratio of matriculates having degrees

in science or arts even in the richest, best located and only endowed medical schools." The Dean of the Harvard Medical School, Dr. Bowditch, may best answer this. Commenting, in a recent report, upon this diminution in the proportion of college-bred men who have entered the Harvard since 1884, he says:

"Among the influences that have contributed to this result it is fair to assume that the increasing demands of our medical colleges upon the time of the undergraduates and a growing conviction of the importance of beginning professional studies at an earlier age than that at which most students obtain the degree of A. B., have played an important part. This view derives confirmation from the fact that there is a large and apparently increasing number of students in every entering class who have received a certain amount of collegiate education, but who have left their colleges without taking a degree."

It may be justly said that, on the whole, medical education in the United States was never before in such a satisfactory condition; never before were classes so large nor so well prepared, nor instruction so thorough, nor teaching equipments and "plants" so complete. There is, it is true, still great room for improvement; but the progress of the past decade is the sufficient promise that such improvement will be effected in the near future. For the present we may, to adapt the language of Professor Pepper in his address as President of the first Pan-American Medical Congress,[1] point with justifiable pride to the admirable and sweeping reforms which have already been instituted.

PROPOSED REDUCTION OF THE MEDICAL CORPS OF THE ARMY.

A standing committee of a legislative body is the guardian and defender of special interests against harmful or hasty action by the general body. Rarely does legislation adverse to those interests originate with such a committee; yet at the present time we have an illustration of its occurrence in the proposed cutting down of the Medical Department of the Army by the Military Committee of the House of Representatives in the Army appropriation bill as reported to the House: "and no appointments shall be made to the office of assistant surgeon until the number of assistant surgeons shall be reduced below ninety, and thereafter the number of officers in that grade in the Medical Department shall be fixed at ninety." The present number is 125.

Of course the object of this is economy. The assumption is made that there are more army doctors than are needful; yet the Army with its attaches requiring medical attendance is as large now as when Congress in its wisdom fixed the present limits of the Medical Corps. The argument for reduction is that of late years the troops have been aggregated at larger posts so that now with only 120 posts we have as strong a medical force as when there were 200 different stations, each requiring medical attendance. But this argument overlooks the fact that in those days over a hundred civilian physicians were employed under contract,—Acting Assistant Surgeons they were called—at the smaller posts. As these were discontinued the contracts with civilian physicians were annulled,and at the present time no such outside assistance is employed. Money saved by reducing the Corps below its present limits would have to be spent for contract services. Would there be economy in that? If the object were merely to provide medical attendance to sick soldiers it is probable that it could be effected *in toto* by contract with private physicians more economically than by an organized medical staff. But the care of the sick is only a part of the duty of an army medical officer. He must discipline, train and educate the constantly changing *personnel* of the Hospital Corps to have an efficient medical service in the event of war; and his own training for such an event is of the first importance. It may be said that there is little likelihood of any need for this training; but if this is accepted as an argument it operates as much against our whole military force as against its Medical Department.

If the appropriation bill were to pass in its present form, no new appointments could be made until the Corps became reduced to its new limits. Instead of gradually filling up its ranks with bright young men, graduates of the Army Medical School, the progress of which during the past year has been the object of so much interest to the profession, there would be no appointments, no school, no education in the methods of war until all those qualified to teach by their experience in actual war have passed away. This would be a grievous squandering of dearly bought knowledge. In our issue of March 10 last we had great pleasure in reporting the exercises at the closing of the *first* session of the Army Medical School, and in the same issue we presented a view of the corresponding exercises at the *sixty-seventh* session of the British School at Netley, England. Our army medical friends are struggling to place their Corps on such a footing of efficiency as is held by the Medical Departments of European armies; and it does seem discouraging that just as the prospects were brightening under the able administration of Surgeon-General Sternberg, and the cordial approval of the Secretary of War, there should appear a possible bar to all future progress. We are proud of our Army Medical Department as a body of able physicians, surgeons and sanitary officers, and have full confidence in the efficiency of its organization to care for the wounded that are so often uncared for in the first battles of an unexpected war. We feel confident that we give expression to the sense of the medical profession in urging Congress not only to sustain the Army Medical Department in its present status

[1] Journal Amer. Med. Ass'n, Sept. 9, 1893.

but to support the efforts of the SURGEON-GENERAL in raising the standard of medical education, inasmuch as these efforts conduce to the well being and efficiency of the Army, and have a reflected value through the medical profession on the whole of the American people.

WEAK HEART—CARDIAC INADEQUACY VERSUS CARDIAC ASTHENIA.

DR. J. M. DA COSTA, who has already contributed to the literature of cardiac disorder, two classical monographs on "Irritable Heart," and "On Strain and Over-action of the Heart," has further enriched the subject by a lecture upon "Weak Heart," given during the present month. The latter was delivered before the students of the Medical Department of the University of Pennsylvania, by solicitation of the Provost, DR. PEPPER, who, with others of the Faculty, were present in honor of the occasion.

The subject selected by the distinguished clinical teacher was the discussion of the symptom, "weak heart," especially considered from the standpoint of causation, diagnosis, prognosis, and treatment. The lecture reviewed the several forms of weak heart, the cases being grouped into three main divisions:

1. Those accompanied by organic change in the walls of the heart, the impairment of the heart's action being the consequence of such lesion; illustrations of this are to be found among elderly gouty subjects with rigid arteries and flabby tissues, who become breathless under slight effort, such as the exertion of going up a flight of stairs; such cases are to be ascribed to fatty degeneration of the cardiac muscle fibers. There is also the class of organic affections with weak heart accompanied by dropsy of which dilatation is the prominent type.

2. Those due to some toxic substance in the blood, either a toxin of unknown character as in influenza, typhoid fever or diphtheria, or some poison of recognized character, such as tobacco, alcohol and the gout poison.

3. Those in which the feeble action of the heart is to be ascribed to essential weakness of the cardiac muscle, and with this there may occur more or less myocarditis; and, finally, those which must be called "cardiac asthenia," which are of nervous origin. The last named group should receive special consideration since they do not obtain the recognition which they deserve, and they are not described in our usual works of reference. Two cases were cited of the latter character, in which depressing emotions suddenly and profoundly affected the heart's action; the patients collapsed suddenly, with failure of pulse, great weakness of the heart's action, vertigo or syncope upon lifting the head from a horizontal position, the extremities cold, the skin pale or bluish, and death apparently imminent from cardiac asthenia.

The differential diagnosis of these different groups of weak heart presents no special difficulties. In the fatty heart of gouty subjects the age, the presence of the usual signs of gout, the state of breathlessness brought on by slight exertion, sufficiently indicate the cause.

In the toxic group, the diagnosis is obtained from the clinical history rather than from the physical signs. The heart symptoms of dyspepsia probably are partly due to ptomaines in the blood from imperfect digestion of food in the stomach, and are partly reflex. They do not properly belong among cases of weak heart now under consideration being more of the type of irritable heart.

The main interest lies in the distinctions between the weak heart of essential muscular defect and the weak heart of nervous origin. With regard to the cause of the latter, the lecturer was inclined to locate the nerve lesion in the cardiac ganglia and connecting fibers rather than in the pneumogastric or in the medulla oblongata. In the diagnosis between the last named classes of weak heart, he had not found the sphygmograph of as great assistance as he had hoped; but he noted that in the nervous form, although the line of ascent was of considerable amplitude, yet it was more slanting than usual and might even show some irregularity or wave motion, and the line of descent also wavering, indicating low tension in the arteries. In the cases of muscle weakness, the line of ascent was more vertical, but did not attain the height that was observed in the first group; its descent was also wavering and irregular.

Dyspnea was a marked symptom of the muscle-weak hearts, and was not seen in the asthenic cases, in which vertigo and syncope were more common. The physical signs also were capable of affording some points of diagnosis. In the asthenic cases, the first sound of the heart was short and distinct and was followed by a valvular second sound, while in the other group the first sound was longer but lacking in volume, and was at times associated with a murmur, while the second sound was also indistinct. The pulse, in the former, may vary in force at different periods, but it does not as often intermit or become irregular as it does in the latter.

The prognosis varies in the different groups. In the fatty heart, or impaired heart associated with dropsy, the disease may be palliated, but in the end it is fatal. The toxic group, being dependent upon different causes which usually are removable generally recover; although deaths do occur, as happens not uncommonly in diphtheria. No one can explain why this fatal heart failure in diphtheria should occur; but there can be no question that asthenia is the immediate cause of death and not the heart clot which is only incidental to the weak action of the heart. An important question with regard to the

cases of essential muscular weakness and, as well of cardiac asthenia, is whether or not they may lead to organic disease. This may occasionally occur with the former. The weak heart sometimes becomes dilated, degeneration takes place in the muscular fibers, and valvular insufficiency also develops; a condition which the lecturer summed up in the very expressive term of "heart-wreck." In the asthenic cases, organic heart disease does not occur, but breast-pang, more or less severe, is one of its symptoms. Fatal results from "heart-failure" will happen occasionally, in spite of the disinclination of insurance companies and health boards to accept this diagnosis in a death certificate. These cases occur, it might be said, in both sexes, but more frequently in the male sex than among women. One complication of the asthenic cases to be especially noted is that after a few months, they may be attacked by diabetes mellitus, of purely nervous origin, and unfortunately fatal in character.

The treatment of these two forms of weak heart is in the main much the same. The best form of heart tonic, either from asthenia or weak muscle, by far, is strychnin, given in moderate cases one-fortieth grain. Arsenic is also of great service, especially in the cardiac asthenic cases, in combination with the preceding, and continued for weeks or months. Alcohol is often necessary, in decided doses, to overcome the tendency to fatal syncope and collapse. Along the same line is digitalis and also strophanthus, though with a large gap between. Adonidin and cactus grandiflora have not produced decidedly beneficial results. Rest in bed is a requisite of treatment in the nervous cases, since syncope and threatened collapse attend efforts to assume an upright posture. In cases of muscular weak heart, exercise is valuable. When the patient has begun to mend, a change of residence from the city to a sanitarium or watering place is generally advisable. With careful management, in the course of time to be measured by months or years, the patient may ultimately be restored to a perfectly normal condition and be as well as any one.

ORDEAL OF THE BIER.

Superstitions live long and die hard. A most singular reference to one is furnished in the case of State v. Wisdom, which was decided by the Supreme Court of Missouri, Jan. 31, 1894. This was an appeal from a conviction of murder. In the course of the examination of one of the witnesses, he was asked to tell what happened down at the morgue by the dead body, when another witness and the prisoner were there, prior to the inquest. This was objected to as immaterial, and the objection was overruled. The witness answered that they were told to put their hands on the murdered man; and that he and the other witness referred to did so, but the prisoner would not do it. An officer corroborated this statement. The prisoner objected to the latter's statement but assigned no reason. The action of the trial court in this regard was assigned as error. Who it was that told them to put their hands on the dead body did not appear.

The request to touch the body, the court says, was evidently prompted by the old superstition of the ordeal of the bier in Europe in the Middle Ages, which taught that the body of a murdered man would bleed freshly when touched by his murderer, and hence it was resorted to as a means of ascertaining the guilt or innocence of a person suspected of a murder.

This superstition has not been confined to one nation or people. It obtained among the Germans prior to the twelfth century, and is recorded in the "Nibelungenlied," a great epic poem of that century, in the incident in which the murdered Siegfried is laid on his bier, and Hagen is called on to prove his innocence by going to the corpse, but at his approach the dead chief's wounds bled afresh. That it dominated the English mind is attested by the passage of Matthew Paris that when Henry II. died at Chinon, in 1189, his son and successor came to view his body, and, as he drew near, immediately the blood flowed from the nostrils of the dead king, as if his spirit was so indignant at the approach of the one who caused his death that his blood thus protested to God. And Shakespeare voices the same superstition in Richard III., (Act 1. Scene 2) thus:

> "O, gentlemen, see, see! Dear Henry's wounds
> Open their congealed mouths and bleed afresh."

And so does Dr. Warren, in "Diary of a Late Physician," (volume III, p. 327). That it was a prevalent belief in Africa and Australia, in another form, see Encyclopædia Brittanica, pp. 818, 819. This superstitiou has come to this country with the emigration from other lands and, although a creature of the imagination, it does to a considerable degree affect the opinions of a large class of our people.

It is true, it was not shown that the prisoner believed that touching this body would cause any evidence of guilt to appear, or that he entertained any fear of possible consequences; but it was simply a test proposed by some bystander, and it was offered as showing the manner in which the three suspects conducted themselves when it was proposed. While the prisoner had a perfect right to decline, either because of his instinctive repugnance to the unpleasant task, or because no one had a right to subject him to the test, and his refusal might not prejudice him, in the minds of a rational jury, on the other hand, a consciousness of guilt might have influenced him to refuse to undergo the proposed test, however unreasonable it was, and the court holds that it was one of the circumstances of the case that the jury could weigh. The jury could consider that, while it was a

superstitious test, still the prisoner might have been more or less affected by it, as many intelligent people are by equally baseless notions, as shown by their conduct and movements. If often happens that a case must be established by a number of facts, any one of which, by itself, would be of little weight, but all of which, taken together, would prove the issue.

THE VALUE OF A WOMAN'S HEALTH.

The Supreme Court of Minnesota holds, in the case of Galloway v. Chicago, Milwaukee & St. Paul Railway Company, decided Jan. 30, 1894, that where the evidence tends to show that prior to sustaining a personal injury a woman was healthy and active, but by such injury is rendered a helpless invalid an award of $10,000 damages is not so large as to warrant a reviewing court in saying that they are excessive. The immediate injury in this case, for which that amount of damages was awarded, was a wound on the knee, seemingly, in and of itself, a comparatively small one. But it was claimed, and the evidence tended to prove, that this caused a nervous shock, which resulted in the development of heart disease, and in traumatic neurosis. It will further be seen to have been one of the class of cases where about the only available evidence tending to prove the connection of cause and effect, aside from chronological coincidence, is that of medical experts.

CORRESPONDENCE.

LETTER FROM EUROPE.

Major Girard, Surgeon U. S. Army, to Professor Senn.

No. IV.

BERNE—PROFESSOR KOCHER—DR. QUERVAIN.

BERNE, SWITZERLAND.

Dear Doctor Senn:—I have made here several visits to the "Inselspital," and from what I have seen so far, I expect to witness as high a perfection in surgery as may be seen anywhere. I have heretofore in my letters avoided invidious comparisons and personalities, and will here also remain true to my plan. The buildings of the Hospital are not ten years old yet, consist of a number of detached structures—the pavilion style—and are heated by a central steam plant and ventilated partly by aspiration, partly by propulsion. I may revert to the description later on.

The clinic (surgical) is under the charge of Prof. Th. Kocher, whom I have heard you mention as the foremost surgeon of Europe. The surgical material is divided among three pavilions, two of them under Drs. Girard and Niehaus, noted surgeons, are not available for clinical instruction by the nature of the bequests of the founders. The material controlled by Prof. Kocher, however, appears rich, since during the last year 600 major operations were performed in the clinic. Some two years ago Prof. Kocher, who is an extreme believer in aseptic surgery, had a glass room constructed for his operations, which contains nothing but a copper operating table. The dressings are held in cylinders, which are sterilized from an adjoining room and open with air tight doors into the operating room. The amphitheater, where the clinical lectures are given, is not used for operations, to which usually only six students are admitted. This arrangement, beside facilitating asepticism, is claimed to be more profitable for the students as they can closely watch the operations to which they are admitted. Kocher operates with only one assistant, beside the Sister of Charity, who presides with extreme skill and foresight over instruments and ligatures. Another assistant gives the anesthetic. In connection with this, I may mention an ingenious contrivance, suitable particularly for struma operations, which are frequent here. It is a bow attached to the head of the table, from which a rubber veil passes to the chin of the patient, protecting the operator from the anesthetic and the wound from possible pollutions by the patient.

Kocher is very particular in his hemostasis and seizes even minute blood vessels with his forceps, of which often twenty or thirty surround the place operated on. The superficial vessels after completion of the operation are treated by torsion except in struma, the deeper and larger vessels ligated. In this manner his operations are nearly bloodless. He proceeds with great deliberation, but divides each layer of tissues with one stroke of the knife with great accuracy.

The first operation I saw him perform was for catarrhal appendicitis in a young woman. His manner of effecting removal of the appendix may be of interest. He first circumcises the peritoneum, strips it back and divides the appendix with the Paquelin knife between two ligatures and finally ligates the peritoneum over the stump. The mesentery of the appendix is meanwhile held with long-bladed forceps and then ligated and divided. The ends of the incision are then hooked up on sharp hooks, peritoneum, fascia and muscles are included in one continuous suture, and over this the skin.

The next operation was a cholecystectomy for gall stone. The gall bladder was found to contain a stone about three inches long, filling its whole lumen. It was attached by adhesions throughout, which were lifted up piece after piece with his director—one of the most useful instruments in surgery—and ligated prior to division. The gall bladder was excised *in toto*, in a manner similar to the appendix, blood vessels treated as usual, and same suture. The operation was practically bloodless and excited my greatest admiration.

The third operation was his modification of Alexander's operation for retroversion and prolapsus. The right round ligament was readily found, drawn out about five inches (which were cut off), and sewed with four silk stitches into the fascia of the m. obliq. externus and the canal closed with two or three more sutures. Blood vessels and skin sutures same as usual. On the left side it was found that the patient had sustained at some time before at another hospital an operation for radical cure of hernia and the ligament had been cut away, as it could not be found. Vaginal examination showed that the uterus was drawn upward and to the right.

The anesthesia in all these cases commenced with chloroform and after insensibility was produced, it was continued and kept up with ether. This method seems very satisfactory and no annoyance was caused by the anesthesia.

Prof. Kocher appears to be overwhelmed with private operations and consequently leaves considerable operating work to be done by his first assistant, Dr. F. de Quervain, who is favorably known to the profession by his monograph on "Cachexia Thyreopriva." He is an expert operator and is considered one of Kocher's ablest disciples. Yesterday he made three radical operations for hernia, which unfortunately I missed. This morning he opened a mastoid abscess with a thermo-cautery knife and subsequently operated on a compound double fracture of tibia and fibula.

After carefully disinfecting the surface and applying the Esmarch tourniquet, he exposed the fractured tibia, made resection of the fractured ends and by sawing out a step from each end brought them in apposition. The comminuted parts of the fibula were removed with the forceps. Wiring of the ends of the tibia made shortly after the accident,—caving in of a bank of earth—which had led to the fracture had failed, the wires cutting through the bone. The limb was placed in a plaster-of-paris dressing with the necessary fenestræ, strengthened with strips of veneering, a procedure novel to me.

A resection of the knee joint, which had been made by him and was healing by first intention was then placed in a plaster splint. I remarked that he deviated from the practice of the German surgeons—and I believe also yours—in making the resection so as to have the limb perfectly straight. I was informed that the results of partly flexed position had not been found satisfactory as the flexion gradually became more pronounced and the limb useless.

This afternoon Prof. Kocher made his modification of Alberti's operation of gastrostomy. He makes a vertical incision about four inches long in the usual place, to about two inches above and to the left of the umbilicus. With his usual care he proceeded with the hemostasis and division of the several layers and drew out part of the stomach. With artery needle he ligated the vessels on both sides where the sutures were to be inserted. He then closed the abdominal opening to about two inches in the manner described heretofore, and after having drawn the stomach out about four inches, stitched it to fascia and peritoneum with continued suture. He then prepared a channel for the part of the stomach drawn out, by separating bluntly the skin from the ribs and made an incision at about the sternal end of the sixth rib, into which he *forcibly* drew the pouch and with four interrupted sutures sewed it to the margin of the incision. This method is said to make a perfect valve, requiring no pad and not liable to eventual change, as in Alberti's operation.

The next operation was excision of a carcinomatous mamma. After carefully outlining the shape of the gland and marking the margins with a nick of the knife, he made a circular incision and dissected gland and fascia from the pectoralis muscle. The incision was carried into the axillary cavity and every vestige of lymphatic glands, (which appeared perfectly sound) dissected in the most painstaking manner from the axillary blood vessels. The skin was then united with continued suture and a small remaining defect covered with Thiersch graft.

Berne, February 27.

To-day's surgical clinic was about as exquisite to my taste as one of Thomas' concerts would be to a music lover. First two women were presented to the class, both with typhlitic abscess. The "consulting staff" were well quizzed by Prof. Kocher and acquitted themselves very creditably. The attendance in the clinic was the best I have seen so far anywhere, except at Rush. The first woman exhibited had a fluctuating tumor in the right hypogastric region. No local disturbance discoverable in the anamnesis, except some diarrhea. The tumor had gradually grown during four weeks and discoloration of the skin was pronounced. A careful analysis, positive and exclusive, of all possibilities was made and probable perforative appendicitis, possible perforation of cecum or colon diagnosed. With the aspirator syringe a small quantity of ill smelling pus was removed, which confirmed the diagnosis. The crucial test was established by microscopic examination, which revealed a great cavity of microörganisms, among them staphylococcus, streptococcus, diplococcus, bacillus coli and even the comma bacillus.

The other one was still more remarkable, for the tumor was on the *left* side of the umbilicus.

Both cases received hypodermic solution of cocain and the abscesses were incised with the thermo-cautery (to prevent infection) with escape of enormous quantities of fecal pus. The plan of treatment is irrigation several times daily with one per cent. salicylic acid and an antiseptic dressing until granulation is well advanced, then radical operation. In this manner, infection of the wound is prevented.

These operations were made in the amphitheater, since no danger of infection existed for these infected abscesses and they would have lamentably affected the aseptic condition of the operating room, to which Prof. Kocher and the chosen few adjourned, for the second, the operative part of the program, four capital operations.

1. *Excision of a Struma.* Horizontal incision, careful hemostasis, double ligature of the capsular tissues and division between the ligatures. The operation was almost bloodless and performed in an incredibly short time. I have heretofore omitted stating, that Prof. Kocher uses for buried sutures almost exclusively silk; this is due to occasional infections from the use of catgut, owing to careless preparation of the makers.

2. *Ovariotomy* of a single tumor without adhesions. After division of the tissues in the linea alba, evacuation of the tumor with Spencer Wells trocar (probably two gallons of fluid), upon which the tumor was turned out and the pedicle ligated with silk in two parts and returned to the abdominal cavity. Peritoneum and fascia were then united with a continuous suture and then the skin likewise. No drainage.

3. *Radical Operation of Inguinal Hernia.* Oblique incision. The sac was forcibly drawn out of the ring, (about five inches) then passed through an incision about one and one-half inches above in the transverse fascia, to which it was stitched before and behind with wire sutures. Then it was laid down in the inguinal canal and connected with three more wire sutures and the remaining end cut off. A superficial continued suture completed the operation.

4. *Excision of Carcinomatous Mamma* in a male, age 50. The nipple being in an ulcerated condition was as a preliminary step thoroughly cauterized with the Paquelin. The remainder of the operation was similar to the one heretofore described.

I am about at the end of my description of the Berne clinic, as the "semester" is nearly over. A struma of the size of a large orange was excised from a boy of 14. The reason leading to the operation was that from a tracheotomy performed in childhood, the cricoid cartilage had not recovered the normal strength and even this small goitre caused dyspnea by compression of the trachea. On excision of the tumor the breathing became free, but the slightest pressure on the cartilage led to suffocative attacks.

The next case of struma operated on was a cystic tumor, apparently without adhesions and only cocain hypodermically was used as an anesthetic. Since, however, additional cysts had formed, penetrating deeply into the intermuscular spaces, the operation was considerably prolonged and a severe tax on the fortitude of the patient.

The next operation was an "Alexander" for prolapsus with cysto- and rectocele. It was performed quickly and with apparent ease, at once correcting the faulty position of the uterus.

A tubercular osteitis of the tarsus led to amputation. First the cuboid bone being diseased was re-articulated, then the head of the astragalus, then a cuneiform bone, and finally pus exuding from the ankle joint; conservative treatment had to be abandoned, and the choice lay between a Pirogoff and amputation. The skin was too much infil-

trated for the former, however, and the latter, for which the consent of the patient had been obtained previous to etherization, was performed with a lateral flap.

This morning on my arrival at the clinic I met Prof. Kocher leaving. He informed me that he had to go to Lucerne to make a severe operation and that Dr. de Quervain would make the operations this morning. (I learned later that the operation spoken of by the Professor was a removal of the Gasserian ganglion—for neuralgia of the trifacial—by resection and turning back of the zygoma.) Dr. de Quervain made four operations, a double radical operation for hernia, two single ones and exsection of the skull for tubercular disease. In the double hernia the bowel had not passed much beyond the external ring, causing some trouble in finding the sac. Dr. Quervain remarked on the fearlessness of the people in submitting to operations, even for slight defects. The second case was a very large hernia of many years' standing, with a greatly thickened sac. It was operated on in the usual manner expeditiously. The third case was a return of hernia after operation two years before. It was found that the silk sutures, which had closed the canal had cut through the ligament of Poupart. All but one suture were intact.

The exsection of the skull was made with a semi-circular incision. After scraping back of the periosteum three perforations about two inches apart and two erasions presented themselves. With gouge and hammer one of the perforations was enlarged and a piece of bone about two by four inches removed with the rougeur, showing the dura mater covered with unhealthy fibrinous deposit. This was scraped off with the spoon, the brain covered with iodoform gauze, and the flap, after excision of the diseased parts, sutured over the opening. No bone grafts were used.

I have given the surgical clinic of Berne a rather large share of my letters for two reasons: One, because I prolonged my stay here, and the other because everything in the operating line was so exact and fascinating that I was greatly attracted.

I may yet send a letter from Zurich, but will probably suspend my epistolary activity until I reach Rome, when I propose sending you an account of the work of the Surgical Section, with which I intend connecting myself.

My letters must certainly have the stamp of impromptu writing, as most of them are written at night, by the light of a tallow candle, after fatiguing traveling and sight seeing, and I hope that shortcomings will be dealt with leniently. Sincerely yours, A. C. Girard.

Prevention of Yellow Fever.

Augusta, Ga., Feb. 16, 1894.

Dr. J. McFadden Gaston, Atlanta, Ga.:

Dear Doctor:—I have just read your "Open Letter upon the Prevention of Yellow Fever by Inoculation" in the January number of the *Southern Medical Record*, reprinted from the Journal of the American Medical Association, of January 6.

If by this writing I can "hold up Moses' hand" I shall feel repaid, however unnecessary that aid may appear to one, who, in the strength of his resources, proclaims his ability and purpose to present "before the medical profession at an early day, facts in his possession confirmatory of *all* that has been alleged in favor of the results of inoculation against yellow fever, as practiced by Domingos Friere in Brazil."

The subject is one of overwhelming importance as well as public interest. That your presentation of the data at hand will be acceptable, I need not assure you; the profession will await it with expectant interest, increased if not prompted, by the hope that whatever prejudice to the cause of the prophylaxis of yellow fever by this means, has resulted from the action of the Commission, may be speedily removed, and at least the hopeful attention of the scientific world be again accorded to the investigator.

I can plead an early interest in this subject, as the author of a petition signed by the Georgia Medical Society of Savannah, the Board of Health and the Academy of Medicine of this city, to the Congress of the United States in 1884, to offer a reward, "open to the world, for the discovery of the true cause or germ of yellow fever, or any certain means of effecting its prevention, destruction, or harmless modification." This was done with a view to "stimulate inquiry in this direction," which seemed in the then state of knowledge the only one of promise as to the control of this epidemic disease. Dr. Friere's appearance upon the stage of action about that time was to me, as it doubtless was to others, especially interesting and timely.

Dr. Friere will be fortunate if he encounters opposition in only *official* form. The path of independent research and discovery in such matters is a thorny one indeed, and he who pursues it needs alike the patience of Job and the "courage of his convictions." Witness Jenner the great exemplar, of whom it is said: "During six years no member of the profession ever received more anathemas or scurrilous abuse. He was attacked by the leading physicians and surgeons of Great Britain, and persecution and ridicule so followed him, that placards with caricatures of Jenner were posted throughout the streets of London and the principal towns of Great Britain; Jenner kept steadily at work and repeated his experiments, until he became fully convinced that by vaccination perfect protection could be obtained against smallpox."

Science has never yet discharged the debt of obligation it justly owes to tradition and *empirical popular* observation by the discovery of vaccination through that medium. "In 1771, a Holstein *schoolmaster* vaccinated three pupils, and in 1774, an English *farmer* vaccinated his wife because of his belief in the power of bovine virus as seen in his dairy maids." It was twenty-five years later (1796) that Jenner made his first vaccination on man. This obligation can never be discharged, as the occasion that created it led to the first experimental demonstration of the now more fully established theory of the "attenuation of viruses," the vista through which hope sees in the distant future the revelation of a power over contagious epidemic diseases unauthorized by all other human means.

You foreshadow objections to Dr. Sternberg's "mode of conducting the investigation" that led to his unfavorable report. Now without meaning to criticise this distinguished officer, it can be said that commissions of inquiry into matters of this kind, especially when prefaced by a certain degree of incredulity on the part of the individuals composing them as to the observer whose work is to be examined, or incredibility as to the subject under investigation, can not, or ought not to, be taken as final. As evidence of this, I need only refer to that admirable "Report on the Cholera in Europe and India," made in 1890 by Dr. E. O. Shakspeare, A.M., M.D., Ph.D. of Philadelphia, who was appointed by the U. S. Government, Special Commissioner for that purpose. That report, commendable alike for its impartiality, ability and fidelity to the trust imposed by the Government which he represented, is a model of its kind.

Among other matters of investigation incident to this mission was that of the anti-choleraic inoculations practiced by Dr. Ferran of Spain. Whether of value or not, they had attracted the attention of Europe and the scientific world. Commissions were sent by different countries to look into the merits of this so-called discovery. Among them, one from France, headed by Brouardel. Appointed by the

Minister of Commerce, his Commission also bore a letter to Dr. Ferran from the immortal Pasteur, before whom both science and commerce in their approaches may be fitly represented in a kneeling, if not worshiping, attitude, with upturned palms ready to receive the gifts of God transmitted through this medium.

Reading the report of this Commission, one is lamentably impressed with the shortcomings of human nature. Because Dr. Ferran saw proper to withhold "his mode of attenuation of the cholera virus," although offering every facility for the examination of the "vaccinal liquid" in his laboratory, the Commission made a report disparaging to his preparation and outfit for the work; intimated a want of "honesty of the man," and while admitting that the "inoculations upon man may appear harmless," yet represented him as the subject of an imprudent "infatuation" which committed him to its premature trial on man; in extenuation of their position pleading the example of Jenner who "hesitated nine years before daring to inoculate James Phipps, May 14, 1796." If this Commission had simply reported their inability to pursue the objects of their inquiry on account of the refusal of Dr. Ferran to disclose or subject to examination his mode of preparation of the virus, its duty would have been discharged; but in reflecting upon Dr. Ferran in the above manner, it sacrificed its own prestige and influence to bitter prejudice or disappointment.

The U. S. Commissioner says: "After having read so much in the current literature of the day about the ignorance of Dr. Ferran of the modern methods of research among bacteria, and of his inability to make decent microscopic preparations, and of his absolute ignorance of the method of staining, I confess that it was with some surprise that I witnessed the facility with which he performed all these operations—a facility which indicated the habitual practice of no mean skill in the performance of these somewhat delicate operations; and my astonishment when for the first time I examined with the Hartnack microscope one of the cover-glass preparations which I had seen him make. Honesty and regard for fair dealing require me to say that if there are more beautifully stained microscopic preparations of bacteria, especially of the comma-bacillus of Koch, and of the Finkler and Prior bacillus, in Europe, I have never seen them." "I found him to be a quiet, reserved, courteous, intelligent and generally well-informed physician. The impression which I formed of his theoretical knowledge of bacteria and of the modern methods of research in the field of natural history, have compared very favorably with those of most of the leading bacteriologists with whom I have come in contact." (Page 714.)

Moreover, as you propose to furnish data confirmatory of the discredited results of Dr. Friere's yellow fever inoculations, it may interest you if I quote in this connection Dr. Shakspeare's statement of the results of the anti-choleraic inoculations in Spain.

After citing statistics he adds: "It appears, therefore, that among the population of villages wherein anti-choleraic inoculations had been more or less extensively performed, the liability of the inoculated to attacks of cholera was 6.06 times less than that of the non-inoculated; whilst the liability of the inoculated to death by cholera was 9.87 times less than that of the non-inoculated. (Page 715.)

Between Drs. Ferran and Friere there exists a close analogy in their respective spheres of observation. Hitherto unknown members of the profession, and alike bold in the practical application of the results of their researches, they first fell heir to incredulity, if not prejudice in the minds of the profession, and invited a burden of proof positive as to the value of their observations which, to say the least, it is extremely difficult to furnish under present circumstances. Their tasks embraced not merely the finding of a missing link in the development of the bacillus anthracis, or the isolation of the germ of cholera or tuberculosis, like Koch, but much more, the immediate practical application and use of a virus for the prevention and modification of the two remaining unmitigated scourges of mankind—yellow fever and cholera. The discovery of the bacillus-tuberculosis and the comma-bacillus has done little or nothing for the treatment of the diseases of which they are the respective causes; while inoculations against cholera and yellow fever become from their very nature and objects the full equivalent of the highest therapeutic results. A stronger proof, more difficult to furnish than the demonstration of a microörganism, is necessary with the latter, and even if brought to naught in the end, may not be without useful lessons to future investigators. It will doubtless prove an acceptable duty to you to show the full value and usefulness of Dr. Friere's labors and researches.

Yours truly, W. H. Doughty.

The Advertising Question.

Pittsburg, March 10, 1894.

To the Editor:—I observe, sir, that but one side of the advertising case has been presented by the Hebrew children of Philadelphia and Pittsburg. I always bear in mind, sir, the old advice to beware of the Greeks bearing gifts, "*Timeo Danaos et dona ferentis.*" The spasms of virtue which are bringing Solomon of Philadelphia, and Isaac of Pittsburg, to the fore, may be in the nature of friendliness to some of the rival works. This is perhaps creditable, but it ought to be considered with their remarks. It is somewhat singular that you do not see these people attacking "Europhen," "Trional," "Losophan," "Piperazin," "Antipyrin," "Antifebrin," or "Sulfonal." The difference between these and American secretly prepared pharmacy products is that one is from abroad and probably of Hebrew manufacture, while the others are indigenous. I must say, Mr. Editor, that I occasionally use "Phenacetin," and also "Listerine," and I intend to continue their use until the Pharmacopœia supplies me with something better to use in their place. I have never prescribed any of the others of the category, but when convinced of their utility I may do so. There is a great deal of humbug and tomfoolery in the row that has been raised. These American pharmacists are not publishing to the people a quack remedy. They offer their products to the medical profession alone, and ask to be tried by professional standards. There is a very wide difference between the "patent" medicine man who issues an almanac to everybody, and reputable pharmacists who put "Europhen" and "Listerin" on the market. Not only that, but the ingredients are not secret; they are known. The process of manufacture, like that of handicraft, is individual. Everybody not a veritable chump knows that the Code of Ethics, written years ago, when individual pharmacal processes were unknown, had reference only to patent medicines—the variety that supplies the family almanac and recommends the same secret compound for a variety of diseases as a specific. This patent medicine specific was the object aimed at by the paragraph in the Code, as the modern "Sennine" and compounds of its class were unknown when the Code was framed.

The resolution claimed as governing was introduced without notice and passed without comment or debate; not a half-dozen members paid any attention to it.

Even the shriekers profess to desire that our Journal shall be a creditable one in its reading pages, and that it shall show in its news columns and general make-up no inferiority. It costs money to make a Journal like ours.

How can it be maintained on an equal footing with other journals if one-third of its income be suddenly cut off? Why should our JOURNAL be handicapped with any such restrictions as Dr. Cohen proposes? The *British Medical Journal*, the highest type of the most ethical medical body in the world, contains the advertisement of "Cactina Pillets," and others of its class. There is not one of the American medical weeklies that does not carry the advertisements in question. Our members demand of the Trustees a JOURNAL equal to any. It simply can not be made equal if the line on *American* pharmacal products is drawn where the shriekers want it. These views, Mr. Editor, may not conform to the views of rabid fanatical sentiment, but they are those of common sense. There is no sense in placing the American pharmacal compounds of the class named by the Hebraics, among the quack nostrums. It is so manifestly unfair, that the fact only needs to be stated, to be appreciated. However, we may well ask, who will draw the line, and where will he draw it? Will it be drawn only against home products, or will those of foreign countries fall equally under the ban, whether from the New Jerusalem or the Old?

MEDICUS.

[This discussion, in the opinion of the editor, is profitless. Let the matter be brought to an issue on the floor of the ASSOCIATION, and there end.—EDITOR.]

Why "Moonshine Pills" Flourish?

TECUMSEH, MICH., March 17, 1894.

To the Editor:—In your last week's issue of the JOURNAL, ten or more pages are given in exposing the vagaries of homeopathy, in which the author of the paper explains how near he got in the slum.

It is my impression that if the medical schools of our country will raise the standard of medical education equal to that of European countries, we will be cursed with less quacks, homeopaths, and other sects.

They will not flourish any more than they do in Austria and Germany. Very truly yours,

J. F. JENKINS, M.D.

ASSOCIATION NEWS.

The Association Train will leave Chicago Monday, May 28, via Santa Fe R. R., Rio Grande Western, and Southern Pacific, for San Francisco via Denver, Colorado Springs, Leadville, Manitou, Glenwood Springs, Salt Lake, Ogden, Truckee and Sacramento. Returning, after the meeting, the train will pass through Sacramento and Northern California to Portland, thence east by way of the Northern Pacific R. R. to St. Paul. C. M. & St.P. R. St. Paul to Chicago. A stop over at Yellowstone National Park for those who desire it has been arranged, and it has been understood that at several places on the journey there will be short stops. President Hibberd's party in a special car join the train at Chicago, and the St. Louis party are expected to join at Kansas City. From all points east and south, concentrating on this train should be effected at Chicago and St. Louis. For all information relating to this train, fares, etc., address G. M. Connell, 212 Clark st., Chicago, or any agent of Santa Fe line in other cities. Rates promised are the lowest excursion rates at time of departure.

This is the only route on which arrangements have been perfected by the Trustees.

Points of Interest.—While San Francisco is a comparatively new city it is not lacking in places of interest to the visitor. About a half mile to the northward of the city limits, nestling in a little valley and surrounded by evergreen trees is the Presidio, the U. S. Army station. A short distance beyond is old Fort Point upon the waters' very edge—the waters of the bay dashing upon its cement abutments are broken into spray and lost upon its walls.

McDowell Avenue leads from near the Fort around the top of the cliffs overlooking the Golden Gate, and the broad expanse of the Pacific Ocean.

Vessels of all nations and descriptions can be seen in the offing or quietly gliding through the waters of the Gate.

The Cliff House—a famous resort—is situated upon a promontory directly overlooking the ocean. In the distance on a clear day the Farallone Islands—twenty-five miles away—are seen rising abruptly from the water, while less than one hundred yards from where one stands, the "Seal Rocks" jut up from the waves and the loud barking of the seals and sea lions upon them tell why they are so named.

Sutro Heights are just above the Cliff House. Here nature and art have so blended their works that the visitor is truly astonished and delighted with what he sees. The Committee of Arrangements are planning an entertainment at this place for the wives and daughters of visiting members to the ASSOCIATION. All San Francisco is justly proud of Golden Gate Park. What was once dreary sand dunes, has been transformed into a very garden. Flowers bloom throughout the year, and the grasses are always green.

Broad avenues wind in and out past the conservatory, the deer paddock, around the base of Strawberry Hill and on to the ocean beach.

The California Mid-winter Fair is being held in the Park at the base of Strawberry Hill and occupies a space many acres in extent.

This Fair has an individuality peculiarly its own, and offers much of interest to every visitor.

San Francisco, March 14, 1894.

Section of Neurology and Medical Jurisprudence.—PARTIAL PRELIMINARY PROGRAM.—The following papers have been promised for presentation in this Section:

1. Chairman's Address—"Medical Expert Testimony and the Common Law," James G. Kiernan, Chicago, Ill.
2. "Medico-Legal Aspects of the Cronin Case." Judge R. M. Wing, (Counsel for the Defense) Chicago, Ill.
3. "Medico-Legal Superstitions Concerning Criminal Inebriates," T. D. Crothers, Hartford, Conn.
4. "A Case which Illustrates the Medico-Legal Relations of Bacteriology," A. Walter Suiter, Herkimer, N. Y.
5. "Degeneracy from an Oral and Dental Standpoint in Regicides and in Aristocracy," Eugene S. Talbot, Chicago, Ill.
6. Paper—Title to be announced later, H. N. Moyer, Chicago, Ill.
7. "Recent Discoveries in the Minute Anatomy of the Nervous System and their Bearings on Practical Neurology," Chas. K. Mills, Philadelphia, Pa.
8. "Auto-infection in the Production of Diseases of the Nervous System and some Suggestions as to Treatment," D. R. Brower, Chicago, Ill.
9. "Is Locomotor Ataxia a Nervous Disease?" L. Harrison Mettler, Chicago, Ill.
10. "Some Observations and Remarks on Insanity of Adolescence," Frank P. Norbury, Jacksonville, Ill.
11. "Sexual Animus; Its Relation to Health and Disease," Charles Everett Warren, Boston, Mass.
12. "Laryngismus Stridulous," Rosa Engelmann, Chicago, Ill.

More papers will be announced later.

FRANK P. NORBURY, Secretary,
Jacksonville, Ill.

Section on Materia Medica and Pharmacy.—Members of the ASSOCIATION and delegates are invited to prepare papers on appropriate topics to be discussed before this Section. It is especially requested that the titles of papers should be sent to the Chairman or Secretary at as early a date as possible in order that the program may be arranged. A number of pharmaceutical papers have already been promised, and the titles of others should be sent in at once either to the Chairman Dr. Frank Woodbury, Philadelphia, or to Dr. George F. Hanson, 761 Valencia Street, San Francisco, who has kindly consented to serve as Secretary *pro tem* in place of Dr. Stewart who will be unable to attend the meeting.

SOCIETY NEWS.

The Ohio State Medical Society will hold its forty-ninth annual session at Zanesville, May 16, 17 and 18. President, N. P. Dandridge, Cincinnati; Vice-Presidents, F. C. Larimore, Mt. Vernon; Wm. Caldwell, Fremont; W. T. Corlett, Cleveland; L. L. McCurdy, Dennison; Secretary, Thomas Hubbard, Toledo; Assistant Secretary, Chas. Graefe, Sandusky; Treasurer, James A. Duncan, Toledo.

Medical Association of Georgia.—The forty-fifth annual session of the Medical Association of Georgia will meet in Atlanta, Ga., on April 18, 19, 20. The officers are: President, W. H. Elliott, M.D. of Savannah, Ga.; Vice-Presidents, G. T. Miller, M.D. of Americus, H. McHatton, M.D. of Macon; Treasurer, E. C. Goodrich, M.D. of Augusta; Secretary, Dan H. Howell, M.D. of Atlanta, Ga.

Dan H. Howell, M.D., Sec'y.

The Association of Military Surgeons of the United States.—The fourth annual meeting of the Association of Military Surgeons of the United States, will be held in this city May 1, 2 and 3, 1894. A brilliant and able literary program will be presented. The evenings will be given up to social entertainments. Transportation will be satisfactorily reduced on all railroads to and from this meeting, and all the hotels in the city will give greatly reduced rates. The Ebbitt House will be the social headquarters. A large attendance is anticipated, and a cordial invitation is extended to all to be present.

George Henderson,
Chairman Committee of Arrangements.

Washington, D. C., March 1, 1894.

Cincinnati, Ohio, Academy of Medicine.—The annual election for officers for the Academy of Medicine was held March 5. Dr. Southgate, a graduate of the Woman's Medical College, was elected Corresponding Secretary.

The other officers elected were: E. G. Zinke, President; Joseph Eichberg, First Vice-President: David De Beck, Recording Secretary; Dr. George E. Jones, Treasurer; Miss Glaezer, Librarian; Dr. John A. Murphy, W. P. Dandridge and James T. Whittaker, Trustees.

The Academy is in a prosperous condition. The report of the officers, the valedictory and inaugural addresses were given on the 12th, and the banquet was held on the 15th at the Gibson House.

The St. Louis Medical Society held a meeting March 3. Dr. Outten presided.

Dr. Alleyne was reëlected Treasurer in place of Dr. Hunt, resigned. Drs. P. C. Witherspoon, Philip Hoffmann, J. L. S. Jennings, Louis Crusius, Lloyd Simpson, Howard Carter and Alex P. Jordan were elected members of the Society.

The report of the committee appointed to examine the accounts of Dr. Hunt, the retiring Treasurer, was read and adopted. It shows the Society to be in good financial condition, there being a balance on hand of $597.25.

Denver Medical Alumni.—The regular monthly banquet of the Denver Medical Alumni Association was held March 3. After the regular program the usual monthly banquet was held. Dr. J. N. Vroom acted as toastmaster. Toasts were responded to as follows:

"Our Oldest Graduate," Dr. P. V. Carlin; "Bacteria and Beards," Dr. I. B. Perkins; "Physicians without Beards," Dr. C. H. Manly; "Hospital Work," Dr. G. H. Stover; "City Suicides," Dr. Carl Johnson; "Bald-headed Doctors," Dr. M. A. Walker; "Denver Alumni Association," Dr. J. T. Davison; "Populist Party," Dr. Coleman; "Antisepsis," Dr. E. A. Sheets; "Our West Side Practitioners," Dr. David Thompson; "The Church and Medicine," Dr. E. H. Allison.

Shelby County (Ind.) Medical Society will hold its annual meeting at Blessing's Opera House, April 9, 1894. Preliminary program: Diphtheria, Dr. E. S. Elder, Indianapolis. Discussion: Dr. I. N. Love, St. Louis.

Exhibition of Pus Tubes, recently removed, Dr. W. H. Wathens, Louisville, Ky. Discussion: Dr. T. A. Reamy, Cincinnati.

The Diagnosis and Treatment of Floating Kidney, Dr. R. Harvey Reed, Columbus, Ohio. Discussion: W. N. Wishard, Indianapolis.

Nasal Reflexes, Dr. J. A. Thompson, Cincinnati. Discussion: Dr. H. W. Loeb, St. Louis; Dr. L. C. Cline, Indianapolis.

The County Medical Society, Dr. J. C. Culbertson, Cincinnati. Discussion.

The Treatment of Gun-shot Wounds of Chest, Dr. A. G. Bernays, St. Louis. Discussion: Dr. P. S. Conner, Cincinnati.

Is the Usual Treatment of Postpartum Hemorrhage Correct? Dr. W. G. McFadden, Shelbyville, Ind.

Papers have also been promised by Dr. R. B. Hall, Cincinnati, Dr. Max Thorner, Cincinnati; Dr. Jos. Ransohoff, Cincinnati; Dr. E. F. Wells, Chicago; Dr. J. O. Stillson, Indianapolis, the titles of which have not yet been received.

A banquet will be tendered the visitors at Blessing's Opera House in the evening.

The following have accepted invitations to respond to toasts: Dr. I. N. Love, St. Louis; Dr. J. McLean Moulder, Kokomo, Ind.; Dr. C. A. L. Reed, Cincinnati; Dr. T. A. Reamy, Cincinnati; Dr. E. S. Elder, Indianapolis; Dr. J. M. Mathews, Louisville, Ky.; Dr. R. Harvey Reed, Columbus, Ohio; Dr. L. S. McMurtry, Louisville, Ky.; Hon. W. S. Ray, Shelbyville; Hon. L. J. Hackney, Shelbyville; Dr. D. S. Reynolds, Louisville, Ky.; Dr. E. F. Walker, Evansville, Ind.

American Surgical Association.—Session of 1894. Special subjects for discussion are as follows:

"The Surgical Treatment of Empyema," by John Ashhurst, Jr., M.D.

The discussion of the paper will be opened by Drs. N. P. Dandridge, C. B. Nancrede, T. F. Prewitt, and D. F. Willard.

"Methods of Teaching Surgery," by J. S. Billings, M.D.

The discussion of the paper will be opened by Drs. J. C. Warren, N. Senn, W. W. Keen, E. M. Moore, W. T. Briggs, and Hunter McGuire. It is desired that the discussion of this paper should be participated in by the Fellows generally.

"The Surgery of the Kidney," by L. M. Tiffany, M.D.

The discussion of the paper will be opened by Drs. M. H. Richardson, H. H. Mudd, C. H. Mastin, and Ford Thompson.

"Methods of Controlling Hemorrhage in Amputation at the Shoulder," as illustrated by three cases of amputation at the shoulder-joint and of the entire upper extremity, by W. W. Keen, M.D.

The discussion of the paper will be opened by Drs. Roswell Park, C. B. Porter, and J. Willlam White.

Paper by Hunter McGuire, M.D.; Paper by Joseph Ransohoff, M.D.

Fellows who desire to present volunteer papers are requested to send the titles of the papers to the address of the Business Committee, 1429 Walnut Street, Philadelphia, not later than April 18, 1894.

The Sessions of the Association will be held in the Lecture Room of the Medical Department of the Columbia College, 1325 H Street, N. W., Washington, D. C., on May 29, 30, 31, and June 1, from 10 A.M. to 1 P.M.

The sessions of the Congress will be held in Metzerrott's Hall, corner of Twelfth and F. Streets, N. W., in the afternoon from 2 to 5 o'clock.

The office of registration of the Congress will be at the Arlington Hotel. Registration of individual members of the constituent associations of the Congress is necessary to make them members of the Congress.

Dinner to the guests of the Congress at the Arlington Hotel, Wednesday, May 30, 7 P.M.

Reception by the President of the Congress, Thursday evening, May 31.

J. R. Weist, M.D., Secretary.

Illinois State Medical Society.—The forty-fourth annual meeting of the Illinois State Medical Society will be held at Decatur May 15, 16 and 17, 1894. The meeting will be called to order Tuesday morning, at 10 o'clock.

OFFICERS.

President, Otho B. Will, Peoria; First Vice-President

Daniel R. Brower, Chicago; Second Vice-President, Abby Fox Rooney, Quincy; Permanent Secretary, John B. Hamilton, Chicago; Assistant Secretary, E. J. Brown, Decatur; Treasurer, George N. Kreider, Springfield.

JUDICIAL COUNCIL.

Charles C. Hunt, Dixon; Richard Dewey, Chicago; Isaac N. Danforth, Chicago; John P. Matthews, Carlinville; Francis P. Haller, Vandalia; Edgar P. Cook, Mendota; E. Ingals, Chicago; C. B. Johnson, Champaign; W. J. Chenoweth, Decatur.

SECTIONS.

Practice of Medicine, Medical Specialties, Materia Medica, Therapeutics.—Chairman, T. J. Pitner, Jacksonville; Secretary, H. McKennan, Paris; Address, Prof. Victor C. Vaughan, University of Michigan.

Surgery, Surgical Specialties and Obstetrics.—Chairman, D. W. Graham, Chicago; Secretary, Ellen H. Heise, Canton; Address, Edmund Andrews, Chicago.

Etiology, State Medicine and Medical Jurisprudence.—Chairman, Geo. W. Webster, Chicago; Secretary, G. A. Zeller, Peoria; Address, W. E. Quine, M.D.

COMMITTEES.

Executive Committee (ex-officio).—Otho B. Will, Peoria; T. J. Pitner, Jacksonville; John B. Hamilton, Chicago; D. W. Graham, Chicago; C. Chenoweth, Decatur; Geo. W. Webster, Chicago.

Committee of Arrangements.—C. Chenoweth, H. C. Jones, Wm. Barnes, E. J. Brown, Wm. M. Catto.

Committee on Publication (ex-officio).—John B. Hamilton, Chicago; Otho B. Will, Peoria; Geo. N. Kreider, Springfield.

Committee on Medical Legislation.—A. B. Strong, Chicago; Walter Watson, Mt. Vernon; B. M. Griffith, Springfield; The President (ex-officio).

Committee on Necrology and Biography.—John H. Hollister, Chicago; Robert Boal, Peoria; John H. Rauch, Chicago.

Committee on Medical Societies.—William O. Ensign, Rutland; James L. Reat, Tuscola; Chas. W. Hall, Kewanee.

Committee on Registration (ex-officio).—Geo. N. Kreider, E. J. Brown.

SPECIAL NOTICES.

1. The usual reduction in railroad fare is promised by the Committee of Arrangements, on the certificate plan. The certificate *must be secured when ticket is bought* at local railroad office.

Failure to obtain the certificate will prevent the delegate from securing the reduction on the return trip.

2. Membership is acquired according to the following:

ART. III.—MEMBERSHIP.

SECTION 1.—All regular resident members of County and District Medical Societies organized in harmony with the spirit and objects of this Society are eligible to membership.

SEC. 2.—They may become members at any time by furnishing the Treasurer or Permanent Secretary a certificate of membership and good standing in such local society, the certificate to be signed by the President and Secretary thereof, and accompanied by one year's dues, $3.00.

Those who desire to attend the meeting who are not already members should bring the prescribed certificate.

3. Members desiring to read papers should notify the officers of the appropriate Sections at once.

4. A detailed program will be issued and mailed to members before the meeting.

5. Delegates to the AMERICAN MEDICAL ASSOCIATION, which meets in San Francisco June 5, will be appointed at this meeting.

The question of change in the Code of Ethics and Constitution of the AMERICAN MEDICAL ASSOCIATION is also to be submitted for instruction of delegates.

A general invitation is extended to all members of the regular profession in the State to attend the meeting and join the Society.

JOHN B. HAMILTON, *Permanent Secretary.*

PUBLIC HEALTH.

The Philadelphia Board of Health Declares Consumption Infectious and Prepares a Circular Showing How to Combat It.

The Sanitary Committee at the meeting of the Board of Health on March 6, made a report to the Board, which recommends the postponement, for the present, of the compulsory registration of cases of tuberculosis, but expresses the opinion that the disease is infectious, and recommends, among other things, that the premises occupied by a tuberculous patient be thoroughly disinfected after death.

The report upon which the committee bases the recommendation is very strong, the recommendation very good, and the action taken conservative and judicious, at the same time showing a careful study of the subject. The report says, in part:

"There are certain incontestible facts which should have great weight in forming a decision. There is also a latitude for doubt as to the practicability and advisability of adopting, at the present time, some of the radical measures proposed for inauguration under official direction.

"Consumption is an infective disease caused by the bacillus tuberculosis. All cases take origin, directly or indirectly, from other cases. A most common mode of infection is by inhaling dry and pulverized tuberculous expectoration. It is a distinctly preventable disease. If all this be true, and it is based upon the most reliable scientific data, it becomes imperative that all known precautions should be employed to prevent the spread of the disease, and, particularly, because it is one of the most widespread of maladies.

"It would seem wise at this stage of the agitation of the subject to act most discreetly and cautiously, in view of the danger of antagonism of public sentiment (not yet sufficiently educated and aroused to the necessity of official interference), and its intolerance of publicity and official espionage, which would strike terror into the hearts of these unfortunate sufferers.

"There is a middle course that may be pursued at this time with safety and propriety, without its workings becoming offensive, at the same time that they are beneficent, and this course is proposed for adoption. Encourage registration as a preliminary to a future requirement; circulate information with regard to the means of prophylaxis, directly or indirectly; require disinfection when the attending physician so advises, and always after the removal or death of the patient."

Resolutions were submitted and adopted, to the effect that enforced registration should be postponed for the present; that circulars containing rules for the prevention of the spread of the disease be prepared, published and distributed; that physicians be earnestly requested to coöperate with the Board in the distribution of these circulars, and, further, notify it promptly, whenever disinfection is necessary; that a medical inspector visit houses where deaths have occurred and satisfy himself that they have been thoroughly disinfected, and that all cases that may be reported, be recorded in a book to be kept for that purpose.

THE CIRCULAR ON THE MATTER.

The circular on the subject of tuberculosis, which has been prepared and will be distributed, is as follows:

All cases of tuberculous disease of the lungs (consumption) take origin directly or indirectly from other cases. This is now an established fact. Infection, however, is easily provided against if certain simple precautions are taken.

The chief modes of infection are:

First and foremost—By inhaling dry and pulverized expectoration.

This is apt to occur when an ordinary pocket handkerchief is used by a tuberculous person for expectoration. When such a handkerchief is opened the dried expectoration is likely to be pulverized and diffused through the air. Thus it may be inhaled by others as well as by the patient himself, who is likely to suffer from drawing disease germs into portions of lung previously unaffected.

Another and the most common source of pulverized expectoration, is the habit of spitting carelessly and indiscriminately, as on the floor or ground. The expectoration becomes dried and mixed with dust, and then is easily carried into the air, and is breathed into the lungs or swallowed. The habit, therefore, is not merely offensive, but dangerous.

2. By using spoons, cups and other articles of the kind which have not been properly washed after having been used by tuberculous persons.

3. By kissing.

This source of infection is especially to be guarded against in the case of children.

Self-infection may occur, in addition to the ways mentioned, by swallowing the expectoration. The habit is likely to lead, sooner or later, to the infection of the intestines with tuberculous disease.

There are other modes of infection, as, for example, by

consuming the flesh and milk of animals having the disease. But this source is less common, and, as prolonged high temperature destroys the germ, if we cook our food (including milk) thoroughly, there will be no risk of becoming infected in this way.

PRECAUTIONS TO BE TAKEN.

Knowing the channels of infection, we can easily take effective precautions.

1. The sputum must be destroyed and must not be allowed to become dry. A spitting cup or flask containing just enough disinfectant solution to cover the bottom of the vessel should always be used for the expectoration. Out of doors a pocket-spitting flask should be employed.

In the house it would be well to use a pasteboard or paper cup, which should set in a china or metallic holder. This cup with its contents should be burned at least once a day; but if the expectoration is considerable, much oftener.

Pieces of linen or calico about ten inches square may also be carried. These should be used in cases of absolute necessity only, and should be burnt as soon as possible afterward. No piece should be used more than once.

2. Bedrooms that have been occupied by tuberculous patients should be thoroughly disinfected before they are occupied by other persons, and a declaration or assurance on the point should always be demanded.

If the previous occupant of the room never allowed furniture, hangings or carpets of the room to be contaminated with sputum there would be little need of this precaution. But as people ordinarily of cleanly personal habits sometimes show a surprising amount of ignorance or carelessness in this respect, the following points should be insisted on:

a. Carpets, curtains and bed coverings should have been exposed to superheated heated steam under high pressure.

b. The floor and walls of the room should have been properly disinfected. Rubbing with new bread, followed by the application of corrosive sublimate solution (a tablet of seven and three-tenths grains added to a pint of water) is probably the most effective practical method.

There is no danger of infection from the mere breath of a tuberculous patient. The risk is from the dried expectoration. Danger of social intercourse arises from the neglect of the precaution described.

Fresh air is of the highest importance for tuberculous persons. Hot and stuffy rooms have an evil influence over the disease. Except in special circumstances the bedroom window should be kept open by night as well as by day.

MISCELLANY.

Should be Elected.—Dr. Charles L. Thomas of Crawfordsville, Ind., is a candidate for mayor of that town.

Dr. H. C. Wilson of Goodsell Observatory, Minneapolis, Minn., has discovered a new asteroid.

Madison Board of Health.—Dr. Philip Fox has been appointed Health Officer of Madison, Wis., *vice* Dr. W. W. Gill, resigned.

The Doctor Won.—Dr. Cleaver of Council Bluffs, Iowa, was elected mayor of that city March 5.

Louisville Medical College.—There were 191 graduates at the Commencement of Louisville Medical College held March 6.

A Thirteen Class.—There were thirteen graduates at the Annual Commencement of the Northwestern Medical College at St. Joseph, Mo., March 2.

The Health Authorities of San Francisco have decided that the present morgue in that city should be condemned and will recommend that it be located in the basement of the new City Hall.

Kansas Board of Health.—Dr. B. E. Jones of Buffalo, Wilson County, has been appointed a member of the Kansas State Board of Health, to succeed Dr. H. D. Hill of Augusta, whose term expires April 1.

Investigation of American Viticulture.—Dr. Vicente Vera, who was one of the Spanish Commissioners to the World's Fair, is said to have been instructed to examine carefully into the wine-growing industries of the United States.

Cremated at Davenport.—The remains of Dr. Casper Vitzhum of Rock Island, were cremated at the Davenport (Iowa) Crematorium according to his wish expressed just before his death.

Coroner's Office Condemned.—Dr. Keeney, the Health Officer of San Francisco, March 3 reported the city morgue and the coroner's offices therein as unfit for human occupancy. The Board of Health concurred in the report of the Health Officer and declared the building a nuisance.

The Woes of the Montagnes.—The "Montague Treatment Company" was sued at Cedar Rapids, Iowa, and on March 7 a verdict was given against them for damages amounting to $1,000 for malpractice.

E Pluribus Quinque.—The State Board of Health of Connecticut recently appointed a committee to examine applicants for license to practice, under the new law. Of eight applicants five were found qualified.

Dean of the Dental Department.—Dr. Clarence V. Rosser has been elected Dean of the Dental Department of the Southern Medical College at Atlanta, Ga. Dr. Floyd McRae was elected President of the Faculty and Dr. L. D. Carpenter Secretary and Treasurer.

Smallpox.—In view of the possibility of the spread of smallpox, several towns have decided to erect pest houses. Negaunee and Menominee, Wis., and Dubuque, Iowa. At the latter place there is a brisk struggle going on as to the location of the institution. No property owner wants it very near him, consequently the erection of the building is yet "in the air" rather than on *terra firma*.

Army Medical Examinations.—The Board of Examiners for candidates for position in the Medical Department of the Army met at the War Department in Washington, D. C., on Monday 12th inst., to make arrangements for the examination of over fifty candidates whose applications had received the approval of the Secretary of War. As certain of the young men live at long distances from the place of meeting of the Board it was planned, in accordance with the views of the Surgeon-General, to have the examination in their physique and general education conducted at the military post nearest to their respective homes, so that no one manifestedly disqualified in either of these respects should be put to the expense of a profitless journey to Washington. The Board divided the candidates into five lots, one of which should be examined weekly, beginning on Monday, March 26. But in view of the proviso in the Army appropriation bill, since then reported to the House of Representatives by its Military Committee, reducing the number of Assistant Surgeons from 125 to 90, it is understood that these arrangements will fall and the order convening the Board be revoked. This will be a disappointment to the candidates. If the Corps be permitted to retain its present membership the Board will meet and examine candidates in September to have its work finished before the commencement of the Army Medical School on November 1; but if the proposed reduction be made, few of those now candidates will realize their hopes of entering the service, for by the time another Board will be required most of them will be inadmissible on account of being over age.

Hospital Notes.

Dr. William P. Northrup has been recently appointed Adjunct Professor of Diseases of Children at Bellevue Hospital Medical College, New York.

Hospital in San Francisco.—The Ancient Order of Foresters have decided to build a hospital in San Francisco, solely for the use of the members of their order.

Dallas, Texas, Hospital.—The Health Officer of Dallas, Texas, has reported that the new city hospital will be ready for occupancy within sixty days.

St. Mary's Hospital, Minneapolis, Minn., was incorporated March 1. The provincial superioress in the diocese of St. Paul and her assistants are members of the corporation, and are to choose ten other members from the Sisters of Charity.

Attempt to Burn a Hospital.—At Topeka, Kan., March 2, an incendiary attempt was made to burn the Capital City Hospital, but the flames were extinguished without material damage. This is the third attempt to burn this Hospital within a short time.

Sleep on the Floor.—An inspection of the Flatbush (L. I.) Hospital by an investigation committee February 21, showed that "the overcrowded condition of the Hospital is reprehensible, and that on the day of inspection 195 patients were found sleeping on the floor. There were no rooms for isolation, and the wards contained more insane patients than they could conveniently accommodate."

Winnipeg General Hospital.—At a meeting of the Board of Directors of the Winnipeg General Hospital, held at the Hospital, February 26, there were present: Wm. Hespeler, President; Judge Bain, Honorary Secretary and Treasurer; Geo. J. Maulson, Thos. Bennett, Dr. Lynch, J. S. Aikins, S. Nairn and Isaac Campbell, Q. C. The accounts for the month of January, amounting to $3,783.53, were submitted and approved for payment. The statements for the month of January were submitted and approved.

Memorial to John Hunter at St. George's.—Mr. Alfred Gilbert, R. A., has undertaken to prepare the memorial to be erected in St. George's Hospital, to perpetuate the memory of the connection of John Hunter with the institution. The subscribers to the fund who, at a numerously attended meeting were presided over by the Earl of Cork and Orrery, K. P., unanimously approved the action of the Executive Committee of the fund, may be congratulated on having enlisted the sympathy and coöperation of a sculptor so eminently fitted for the task. Mr. Gilbert proposes to execute a large bust, probably in bronze, with hands, placed on a suitable pedestal. Hitherto scant justice has been done to John Hunter in sculpture, and the rendering of an artist so original in his treatment as Mr. Gilbert can not fail to be of the highest interest. It is proposed that the bust shall be placed, tentatively, at least, in the central hall of the Hospital. We are informed that a sum of about £20 is still required, and with so admirable a prospect of a worthy monument to the great pathologist and surgeon, there ought to be no difficulty in raising the amount.—*British Medical Journal.*

San Francisco Notes.

At the regular monthly meeting of the San Francisco Medical Society Tuesday, March 14, it was voted to appropriate $1,500 to assist the State Medical Society in entertaining the American Medical Association in June.

The Committee of Arrangements for the meeting of the American Medical Association have sent copies of the following letter to all regular physicians in the State who are not at present connected with some society recognized by the State Medical Society:

San Francisco, Cal., Jan. 10, 1894.

Dear Doctor:—The American Medical Association will meet in San Francisco June 5, 6, 7 and 8, 1894. The Association consists of delegates and members. Each State and local society in affiliation with the American Medical Association is entitled to send one delegate for every ten members or fraction thereof. Any member of such societies, in good standing, is eligible to membership in the Association, without attending a meeting, on presentation of a certificate of membership in the affiliated society signed by its president and secretary, accompanied by $5.00 annual dues. This entitles him to receive the Journal of the Association.

It will advance the interest of the profession on the Pacific Coast, and will be a fitting evidence of our appreciation of the National Association, if we have a large representation at the meeting, and a larger accession to the membership. United effort will accomplish this, and will assure success. We therefore urge every physician who is not a member of a State or local society to become enrolled as such. If, on account of distance or other sufficient reason, it be impracticable to join an existing society, it is desirable that he unite with neighboring physicians to form a local or district society that will obtain recognition from the State society where one exists.

It will facilitate the work of this Committee if you will favor us with the name of your local or district society, its membership and the name of its president and secretary, together with the names of eligible non-members in your vicinity.

A blank application for membership in the American Medical Association is enclosed, which may be filled out and forwarded to R. J. Dunglison, M.D., Treasurer, lock box 1274, Philadelphia, or to this office with an additional ten cents to pay money order, when we will gladly attend to it. Membership is a pre-requisite to entitle one to the privilege of reading a paper in the meeting.

Our Midwinter Fair (January to July) is assuming such proportions as will present additional inducements to visit San Francisco, and our hotel and railroad managers are supplementing these by assurances of marked reductions to members of the American Medical Association.

We hope the profession on the Pacific Coast will turn out *en masse* and give the Association a royal welcome.

R. H. Plummer, Chairman.

The Official Register of Physicians and Surgeons of California just issued (January, 1894), shows that 260 licenses have been issued to regular graduates, 43 to "homeopaths," and 36 to "eclectics" in 1893, while the deaths in the three classes number respectively 52, 7 and 8.

Dr. E. C. Cooper attempted to start a subscription beneficiary scheme in conjunction with his "Waldeck" Hospital, a private institution in San Francisco. His plan was to secure subscribers who would pay an initiation fee of $5 and $1 each month, and thus secure for themselves all the medical attendance they required without further pay. The French and German benevolent societies in this city have similar schemes, but some of the regular practitioners insisted that in organizing a private enterprise on those lines Cooper had stepped entirely outside the bounds of those much-mooted ethics of the profession.

Cooper, however, announced that he had secured as consultants Dr. Henry Gibbons, Dr. W. F. McNutt, Dr. W. S. Thorn, Dr. D. W. Montgomery, Dr. Winslow Anderson, Dr. Pichel and Dr. J. D. Arnold.

Dr. Jules Simon, Chairman of the Committee on Ethics, reported that Dr. Cooper's "consultants" had supposed that they were merely connected with the Waldeck Hospital, and not with the beneficiary scheme. The report further said that when Dr. Cooper found that his scheme was objectionable he had abandoned it at once.

Philadelphia Notes.

The Pennsylvania College of Dental Surgery held its thirty-eighth annual commencement at noon on the 8th inst., graduating sixty-two students. Professor Henry Liffmann delivered the valedictory address, and President I. Minis Hays conferred the degrees.

The Philadelphia Dental College also held its thirty-first annual commencement, on the same day, at noon, at the Chestnut Street Opera House. Prof. L. B. Howell delivered the Faculty address and Dr. Samuel H. Miller, D.D.S. gave the valedictory to a class of seventy, of whom two were women. General James A Beaver, President of the College, conferred the degrees on this occasion.

The Pennsylvania State Veterinary Association has just closed a successful annual meeting in this city, the sessions being held in the hall of the College of Physicians and Surgeons. Dr. W. Horace Hoskins, President of the Association occupied the chair. This meeting was largely attended and a number of interesting papers were discussed. The next meeting will be held at Harrisburg in September.

The D. Hayes Agnew Memorial Ward of the Hospital of the University of Pennsylvania will probably be built during the coming summer. It is estimated to cost over a hundred thousand dollars, of which the greater part has been collected, although the opportunity of contributing to this memorial is still open to those desirous of joining in this good work. It is in the form which Dr. Agnew himself would have chosen, as it is known that he was averse to the

posthumous fame to be gained by marble busts, or memorial shafts, which he regarded as monuments to vanity.

THE TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA have recently received a large sum of money from Messrs. Alfred C., William W., and Chas. C. Harrison for the purpose of erecting a new chemical laboratory, which will be called the "John Harrison Laboratory of Chemistry." The donors are the grand-children of Mr. John Harrison now deceased, who was a pioneer in industrial chemistry in this country, and one of the Trustees of the University. Mr. Harrison, who was on intimate terms with Priestley, was influential in securing his election to the Chair of Chemistry in the University as the successor to Dr. Rush.

APPENDICITIS.—As a contribution to the discussion on appendicitis now going on in the journals, it may be mentioned that Dr. T. G. Morton successfully operated upon an adult patient who had had eight attacks. The operation was done in the interval when no local signs of inflammation were present. In another case that of a boy 12 years of age living out of the city, Dr. Morton operated successfully although he had with him only the instruments contained in a small pocket case; there being no time to send home for his instruments and antiseptic outfit. Dr. Morton has observed in a number of cases of acute appendicitis, that temporary glycosuria occurs, the cause of which has not been very clearly made out.

PROF. J. M. DA COSTA delivered his second and final lecture, before the medical students of the University of Pennsylvania, on the 6th inst. His subject was "Lithemia," which he declared to be a modified form of gout, but quite distinct in its manifestations from the latter disease. It is the form which gout particularly assumes in this country. It may be acquired by over-eating and deficient exercise, or it may be inherited from gouty ancestors. Vertigo is a prominent symptom; depression of spirits is another. In the treatment, he advised the use of very little meat and avoidance of sugar and alcohol, (except that elderly subjects might take with their meals, whisky and water, or a sound claret). Carbonate of lithia is a useful remedy which may be combined with nux vomica. Laxatives, especially salines are advisable.

THE COUNTY MEDICAL SOCIETY devoted its meeting of February 28, to the consideration of papers on "American Grip," the "Ancient Lore of Influenza," and "Influenzal Neuritis." Dr. Carl Seiler maintained his view that American grip was distinct from the Russian influenza. He proposed the name of "epidemic myxœdema" for the new disease, which is distinguished from influenza by the absence of catarrhal symptoms and of continued fever. The most prominent lesion of American grip is submucous infiltration of the mucous membranes, especially occurring in the throat often threatening suffocation, and patches of false membrane may be seen on the tonsils. The nervous symtoms are very marked, including neuralgiac and myalgic pains in the head and extremities. He had found so much benefit from the use of benzoate of sodium in these cases as to regard it as a specific. Quinin he pronounced useless, even positively injurious by increasing the cerebral symptoms.

Erratum.—In the editorial article on "Medical Education in the United States," printed in the JOURNAL of March 17, occurs the following paragraph:

"In 1880 the average duration of the lecture term was a fraction over 22 weeks; of the 56 colleges examined, 38 had terms of less than 24 weeks and 18 had terms of 24 weeks or more. Duriug the current sessions, 1893-94, the average duration of the lecture term is 28.19 weeks; only 10 schools have terms of six months or more."

The last sentence should read, as originally written:

During the current sessions, 1893-94, the average duration of the lecture term is 28.19 weeks; only 10 schools *have terms of less than 24 weeks, while 126 schools have terms of six months or more.*

Gentlemen preserving their JOURNALS, are requested to refer to this correction on the article itself.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from March 10, 1894, to March 16, 1894.

Capt. WALTER W. R. FISHER, Asst. Surgeon U. S. A., is granted leave of absence for six months, to take effect on or about May 1, 1894, with permission to go beyond the sea.

Major JOHN H. BARTHOLF, Surgeon U. S. A., retirement from active service, March 13, 1894, by operation of law, under the provisions of the Act of Congress approved June 30, 1882, is announced. By direction of the President.

First Lieut. PAUL F. STRAUB, Asst. Surgeon U. S. A., is relieved from duty at Ft. Riley, Kan., and ordered to report in person to the commanding officer, San Carlos, Ariz., for duty at that post, relieving First Lieut. HARLAN E. MCVAY, Asst. Surgeon U. S. A. Lieut. MCVAY, on being relieved by Lieut. STRAUB, will report in person to the commanding officer, Whipple Bks., A. T., for duty at that post.

A board of officers to consist of: Lieut.-Col. CHARLES R. GREENLEAF, Deputy Surgeon-General U. S. A; Lieut.-Col. ALBERT HARTSUFF, Deputy Surgeon-General U. S. A.; Major BENJAMIN F. POPE, Surgeon, is appointed to meet at the call of the President thereof, at San Francisco, Cal., for the examination of Capt. WILLIAM R. HALL, Asst. Surgeon, with a view of determining his fitness for promotion, as contemplated by the Acts of Congress approved Oct. 1, 1890, and July 27, 1892. Capt. HALL will report in person to the President of the board for examination at such time as he may designate.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending March 17, 1894.

Surgeon L. W. SPRATLING, ordered to the U. S. S. "Alert."

Surgeon E. J. DEAR, ordered to the U. S. S. "Raleigh."

Asst. Surgeon E. M. SHIPP, ordered to the U. S. S. "Raleigh."

P. A. Surgeon W. C. BRAISTED, ordered to hold himself in readiness for U. S. S. "Columbia."

Surgeon G. E. H. HARMON, from the U. S. S. "Yorktown," and three months' leave.

P. A. Surgeon G. P. LUMSDEN, ordered to the U. S. S. "Yorktown."

LETTERS RECEIVED.

(A) Armitage, T. L., Lilly, Pa.

(B) Brown. Philip King, San Francisco, Cal.; Barck, C., St. Louis, Mo.; Battle & Co., St. Louis, Mo.; Beck, Carl, Chicago, Ill.; Baxtor, W. F., Bangor, Me.; Bright, J. W., Rebersburg, Pa.; Bennett, T. J., Austin, Texas; Brother, Ferd, Beatrice, Neb.; Blakiston, P., Son & Co., Philadelphia, Pa.

(C) Cleary, W. P., New York, N. Y.; Cain, J. S., Sewanee, Tenn.; Comegys, C. G., Cincinnati, Ohio; Cochran, Jerome, Montgomery, Ala.; Columbia Chemical Co., Washington, D. C.

(D) Duhring, Louis A., Philadelphia, Pa.; Dunwody, J. A., Colorado Springs, Colo.; Dunn, Ira J., Erie, Pa.; Dunglison, R. J., Philadelphia, Pa.

(E) Elder, E. S., Indianapolis, Ind.; Ewing, F. C., St. Louis, Mo.

(F) Ferguson, F., New York, N. Y.; Fernandez, A. M., New York, N. Y.; Finley, Robt. P., Altoona, Pa.

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PAMPHLETS RECEIVED.

Pigmentation of the Whole Surface of the Body, occurring suddenly during the Treatment of a Case of Psoriasis. By A. E. Carrier, M.D.

Tenth Annual Report, Margaret Pillsbury General Hospital, Concord, N. H., 1893.

Treatment of Depressions in the Skull of the New-born. By David D. Jennings, M.D.

Achievements of Sanitation, Measured by Vital Statistics. By Geo. E. Willets.

Buffalo Lithia Water—Medical Opinions and Clinical Reports. By E. C. Laird, M.D.

The Cause and Cure of Malignancy. By Wm. Thornton.

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ORIGINAL ARTICLES.

THE PSYCHO-PHYSICAL RELATIONS OF MAN, CONSIDERED FROM THE STANDPOINT OF A PRACTITIONER OF MEDICINE.

Read before the Binghamton Academy of Medicine Oct. 19, 1893.

BY JOHN M. FARRINGTON, M.D.
BINGHAMTON, N.Y.

A recent number of the *Literary Digest* states that, "on both sides of the ocean, and in every language that has a periodical literature, psychic phenomena, the occult, the mysterious, are being discussed with an interest, a freedom and a voluminousness heretofore unknown. There is undoubted evidence that this interest is growing and spreading, and that with its widening circle have been developed new sources of information derived from personal experience heretofore untold. A spirit of earnest and impartial investigation seems to be taking the place of the credulity which unquestioningly accepts and the skepticism which arbitrarily condemns without trial. Evidence is being gathered, persónal experience generalized, and phenomena which have been called 'supernatural' are being examined with scientific care and accuracy."

The *Medico-Legal Journal* says:

"The marvelous growth of interest in psychological subjects from year to year promise a wide outlook for the future in the ready adaptability of facts, as fast as obtained, to the most absorbing questions of life. A complete revolution in educational methods is pending; the medical and legal aspects of criminals and of the insane are assuming new and strange complications, and great light seems ready to break upon many moral and religious problems. Not a month passes without report of better means of observation and experiment, and the colleges and universities are constantly adding to laboratory apparatus, and to the breadth and extent of their elective courses in experimental psychology. All indications point toward developments in the near future which will be of signal value in their bearing upon science and man."

Expressions of this character and the interest attaching to this subject has led me to re-write a paper prepared by me thirty-six years ago and in which I have found no reason to make any material change. I trust that its statements will not be without practical interest to you.

The veterinarian, in the study and practice of his science finds much of profound interest in his subject. The study of the structure and the functions of the animal framework is full of attraction; so likewise is the application of medicaments in the treatment of its derangements and surgical appliances, and operations when demanded, to restore, so far as possible, the integrity of its configuration and the normal action of its functions.

What distinguishes the practice of our profession in treating the diseases and repairing the injuries of the *genus homo* from that of the veterinarian? From one point of view, his is the most comprehensive science, for while our attention is directed solely to one family of animals, the veterinarian, in this country at least, attends to two species, belonging not only to different families, but to two distinct orders of animals. True, the being who constitutes the subject of our study and practice stands preëminent in the list or classification of animals, as made by zoölogists; and hence we find that he is more complete in structure, with an increase in the number and diversity of his functions, consequently requiring a greater amount of study to understand his anatomy and physiology than is requisite for that of lower animals. When we state that man stands at the head of all created beings we do not mean to affirm that he combines in himself every physical attribute in the perfection that is found in all animals below him. For sight he can not compete with the eagle, for scent with the hound, for swiftness with the deer, for strength or size with the elephant or the horse; yet in man is found the sum of all these qualities in a greater perfection than in any of the lower animals, and though many animals may excel him in the enjoyment of one of these senses, yet in the harmonious development of all the physical powers man stands unrivaled.

Yet I conceive that were we to consider man merely as an animal, our vocation would be but little more important or ennobling than that of the veterinarian. But there is an interest attached to the study of the human body that transcends all that can be presented by any or every other member of the animal creation, important and interesting though they be. What is this element characteristic of man which distinguishes him in so marked a manner from all other animals and gives to the study of *human* anatomy and physiology supreme importance; investigations in regard to the lower order of animals being most interesting and important when they can aid us in understanding man? We know that it is naught else but the mind. This superadded element constitutes the true worth of man and attaches to him immeasurable importance. Hence for centuries has he been the subject of protracted study and investigation, and thanks to the indefatigable labors and researches of our honored ancestors in the medical profession, there has come down to us for our inheritance and appropriation a rich fund of useful knowledge upon everything pertaining to man. May we so live as to show ourselves worthy of such an important trust and be able to say at the close of our earthly career, that we have not allowed the talents committed to us to rust but have like faithful stewards added interest thereto.

Our libraries groan with the weight of accumulated

volumes of classic medical literature; we have the sum total of the lifelong labors of hundreds of able and earnest investigators of the structure and the functions of the human body, and of the application of therapeutics and surgery to the treatment of its ailments and deformities; but does inquiry stop here? Have all the questions in reference to the matters of medical science been settled? By no means, and is it not exceedingly gratifying to know that never before were there such an array of intelligent and active minds at work in investigation and experimentation as at present? Every year, yea, every month teems with discoveries or improvements more or less important as bearing upon disputed points in our science. The field for discovery is yet broad, much, very much is still unknown, and much of time and labor must continue to be expended in these investigations ere our science may be termed a perfect one. For there are many phenomena in the animal economy that yet remain unsolved and such there probably will ever be to challenge the investigation of the student and the philosopher.

It is the *worth* of man, that has led to such laborious study and protracted investigation, both in ancient and modern times, to obtain a knowledge of his constitution and thus be prepared to apply means and employ measures to preserve or restore health to his body and prolong a life so dear to its possessor, and so important to the world. Herein, then, does the medical profession rise above the veterinary. The one has to care for rational beings, the other for animals destitute of reason. The life of the latter bears no comparison to that of the former, and hence the responsibility of treating the diseases of the cow or horse will differ very materially from that imposed upon him who assumes to practice upon man. This fact, then, is the one that elevates our profession, viz: That there is a union of the mind with the body, and he who ignores the mind of man in treating his diseases may well be classed with the veterinarian.

It is not our purpose to enter into a metaphysical discussion of mind and matter, but briefly to notice some of the relations existing between them and the bearing which these known relations have upon the practice of medicine.

Body is animated matter, while mind is incorporated spirit; both are of necessity intimately connected in the phenomenon of life, yet of the nature of this connection we know nothing. But, as an able investigator has said: "As the naturalist knows and applies electro-magnetism in its relations, without comprehending its essence, as the astronomer calculates the movements of the planets without knowing their nature, so can we duly appreciate spirit and matter in their relations to each other as body and mind without being able to explain their nature or their relations."

We have presented to us two distinct theories or doctrines upon this subject, each having their supporters though they are clearly antagonistic. The one denominated the materialist would have us believe that all the operations of the mind are but manifestations of changes that are being produced in the substance of the brain;[1] thus reducing man to a mere machine the movements of which depend upon its *material* construction. With this view of the subject we see that man's mental development is to be attained only by those things which tend to develop his physical system. He has no power of self-government or direction but must act in obedience to the material changes which his body is undergoing.

The other doctrine called the spiritualist, teaches that although the mind has a connection with the body it does not depend upon corporeal conditions for its *operations;* though its *manifestations* may be interfered with by the defects of the body, still its existence and its operations are always independent of any changes in the physical system. And, also, that it gives to man complete power of self-government and culture, and, contrary to the previous doctrine holds him responsible for all his acts. This doctrine carried still farther would teach us that all mental diseases are not perversions of the mind, which remains perfectly sound, but merely derangements of the bodily instrument. We recognize important truths presented by both of these theories and yet we can not but observe that both are opposed to facts of which we are daily cognizant in our own experience and observation. To notice first the materialist's doctrine, we know that there is an intimate relation existing between the mind and body, that physical changes do affect the psychical conditions; yet we can not go so far as to say, as the alienist, that the mind's manifestations are nothing but the evidence of molecular changes taking place in the brain; our own consciousness appears to disprove it. Neither can we fully adopt the spiritualist view, for while we steadfastly believe in the distinct existence of the mind and its power over the conduct of man we must deny the assertion that its manifestations are not influenced by physical changes, for we are made aware from our own individual experience as well as from the testimony of others, that the mental operations are influenced by differing states of the physical system. We every day witness phenomena to prove this assertion, e. g., a little alcohol or opium in the blood proceeding to the brain quickens the intellectual faculties and exalts the passions, then suspends the controlling power of the will and finally extinguishes for a time all mental activity; that the deficient elimination of the constituents of the bile from the circulatory fluids tends to weaken the intellectual powers,and to induce depression of spirits even exciting the desire of self-destruction; also the perverted reasoning of the delirious from fever and the melancholic pictures drawn by the hypochondriac. Nor can we doubt, if we examine the subject attentively, that the development of the mind and its subsequent improvement, depends somewhat upon the healthful activity of the corporeal organism. Finally, therefore, we are led to embrace a portion of each doctrine, while at the same time we must reject other parts of both. We believe that the mind possesses an independent existence, but that its operations are modified by corporeal conditions. That as it possesses an influence over the physical system and modifies its functions so in turn does the condition of the body affect the psychical states. In fact how many affections of the intellect, of the temper, or of the passions are clearly traceable to a perverted condition of some part of the bodily system. Our very familiarity with this class of phenomena has been an obstacle to our deeper scrutiny into its nature. Much has been written upon this subject

[1] Alienist definition of mind: "The mind is simply the functional activity of the physical elements of the brain—a product of brain energy —that has no tangible independent existence."

without elucidating any new truths, and consequently our knowledge upon the points in question remains very limited. We have an abundance of theories offered to explain the nature of the mind, and the relation that it sustains to the body, but these are satisfactory only to the few supporters which each particular doctrine has. The subject is of grave importance and involves the most solemn issues of human life and yet we probably will ever remain ignorant of the great facts connected with the spiritual essence of the mind and the true nature of its connection with the material essence of the body. In the language of the bard we must be content to say:

"Hence 'tis we *wait* the wondrous cause to find,
How body acts upon impassive mind;
How fumes of wine the thinking part can fire,
Past hopes revive, and present joys inspire.
Why our complexions oft our souls declare,
And how the passions in the features are;
How touch and harmony arise between
Corporeal figure and a form unseen.
How quick their faculties the limbs fulfill,
And act at every summons of the will;
With mighty truths mysterious to descry
Which in the womb of distant causes lie."

"There is one view of the connection of mind and matter," says Professor Dugald Stewart, "which is perfectly agreeable to the just rules of philosophy. The object of this is to ascertain the laws which regulate their union without attempting to explain in what manner they are united." This relation has probably been most satisfactorily explained by those who compare the mind's action upon the body with that of vital force. For example, in reference to emotional excitement it is a well observed fact that any violent disturbance of the feelings quickly subsides when these unrestrainedly expend themselves (so to speak) in their natural expression. There is an instinctive restlessness, or tendency to general bodily movements in some individuals when they are suffering under emotional excitement, the indulgence of which appears to be a sort of safety valve for the excess of nerve force, while the attempt at its repression is attended with an increase in the excitement. Most persons are conscious of the difficulty of sitting still when they are laboring under violent agitation, and of the relief that is afforded by active exercise, and this is particularly the case, when the movements are such as naturally express the passion that is excited.

As we are ignorant of the precise mode of union of the immaterial mind and the material body we can not properly speak of the former as occupying any space or organ of the latter. Nevertheless we have abundant evidence to induce us to believe that the cerebral hemispheres are the organs of the mind. Not that the mind resides within the encephalon, nor that the brain is essential to its action but that the cerebrum is in some mysterious manner the organ in and through which the mind manifests itself to other minds. As Professor Mayo has said: "The brain in the higher animals and in man is the essential organ, in which through a mysterious union, sensation and volition, instinct and reason temporarily reside; if its function be extinguished death is the result, whether we regard man whose death is the separation of the body and of an immortal spirit, or animals whose death is the suppression of a narrower consciousness."

Yet while attaching so much importance to the hemispheres of the brain, physiology teaches us that the other parts of the nervous system are the real organs of common sensation, and that still higher manifestation, the perception of the senses; though it is to the brain that all these sensations and impressions are conveyed; as the great center of animal life it becomes cognizant of and directs every voluntary manifestation of vital force. When we examine the location and the phenomena of the five senses, viz: Touch, taste, smell, sight and hearing, we are led to the conclusion that these form collectively the receptive medium of the organism by means of which the mind becomes acquainted with the external world, and that the nerves affording the sensations and impressions of external objects are but media of communication from the external world to the mind. The hand does not feel, the tongue does not taste, nor the eye see, but the mind through the medium of these organs and the brain feels, tastes and sees. There are therefore two systems of perceptive faculties in man; one called body, the other mind. The former is dependent upon external excitements, the whole of which we collectively call nature. The latter is dependent upon internal excitements the whole of which we collectively call spirit.

Were we to consider fully the psycho-physical relations of man we would need first to study them as belonging to man in general; next it would be essential to examine them as they differ in distinct classes of men and in individuals. Age, sex, climate, temperament, education, occupation, condition, habit and idiosyncrasies all and each exert an important influence upon the individual and modify his or her psycho-physical relations. The limits of our paper will not permit so comprehensive a treatment of the subject, and we shall needs consult brevity in presenting illustrations of these interesting relations.

We will first notice how changes in the physical system affect the psychical, and secondly, how mental states influence the physical organism. The blood sustains an important relation to the mental condition but it doubtless acts indirectly through its influence upon the nervous centers. Experiments upon animals prove that the blood influences their nature, although the psychical functions of animals do not admit of a well founded comparison with those of man. The wilder animals into which the blood of tamer ones had been transfused showed themselves to be of milder nature and the older animals into which the blood of younger ones had been introduced to be more lively and active. Thus experiments upon man have been made, and developed much of interest. One man who had lost his memory, was drowsy and indolent, after transfusion became much more lively; another who lay in a state of lethargy accompanied with convulsions, after the injection of some calf's blood became quite conscious; another was cured of insanity by transfusion and a fourth of paralysis and mental debility. The state of the blood vessels influences the psychical condition. A replete and active condition of them stimulates to activity the nervous filaments encompassing them, and thereby heightens the psychical affections. Yet a plethoric condition of the vascular system causes drowsiness, mental lassitude and indolence. Vacuity and a relaxed condition produces an opposite effect similar to the tone of mind which exists subsequent to venesection or profuse hemorrhages;

vertigo and syncope or at least mental inertion. If the loss of blood be very great, the syncope is very profound and the return to consciousness is manifested by delirium, convulsions and death.

A peculiar delirium is one of the most common effects of excessive vascular depletion. A corrupt state of the blood, whether it arises from a sporadic, miasmatic, contagious, or any other cause has the effect of depressing the spirits. This is a fact so well known, that all of our works on the practice of medicine mention this change in the psychical condition, when classifying the symptoms of certain diseases; thus a knowledge of this effect is in many cases an important aid in forming a diagnosis of the malady present and also which stage of the disease has been reached. The exciting or depressing effects of alimentary and medicinal substances as produced through the blood upon the mental state has been recognized by every one of us. M. Otto, in a long series of careful experimentation, demonstrated to his satisfaction that each drug beside its general and special action upon the organs of the body, exerts at the same time an effect upon the mental faculties. Stimulants increase to a greater or lesser degree the quantity of blood which flows to the brain in a given time; as a consequence the whole brain is excited, provided the stimulation does not exceed a certain limit; but the local excitement differs according to the stimulant employed. Thus ammonia, musk, castor and ether increase the power of imagination and perception; the empyreumatic oils cause peevishness, melancholy and visions. Phosphorus acts upon the generative functions; so, likewise, does iodin and at the same time induces sadness, cantharides excites, while camphor diminishes the sexual propensity. Arsenic causes melancholy, gold hope, mercury increases mental sensitiveness and carbonic acid gas, placidity. Among the narcotics opium stimulates the sexual desires, the intellectual powers and the imagination. Belladonna dulls the mental faculties; hyoscyamus causes moroseness, jealousy and violence, cicuta weakens the understanding; digitalis diminishes and saffron increases the sexual desires; cannabis causes calmness, and amanitia muscaria courage. Tobacco operates in the same manner as opium. A dose of nitre is said to convert a state of cheerfulness into low spirits. Professor Otto also affirms that if the psychologic action of medicines were better known medical men might be able to vary their exhibition according to the character and mental peculiarities of their patients. The treatment of the various kinds of monomaniacal derangements also might be improved; and it is not improbable, that even a favorable change might be wrought on certain vicious and perverse dispositions which unfortunately resist all attempts at reformation whether in the way of admonition or even of correction.

The respiration being intimately connected with the circulation can not fail to exert through the latter an influence upon the psychical condition. The unimpeded function of the lungs in the respiration of pure air has a tendency to induce a cheerful and happy frame of mind, while their impeded action induces a feeling of mental depression. The inspiration of certain gases acts as a stimulus to the intellectual faculties whilst other gases produce depressing effects when inhaled. A remarkable difference has been noticed in the psychical condition of those who live in different climates. The courageous and cheerful people of the mountainous region contrast strongly with the effeminate and morose inhabitants of lowlands and the crowded portions of great cities. This influence even affects dreaming, the images that float before the eye being frightful and unpleasant when the respiration is impeded, while they are pleasing and beautiful when it is free.

The skin is rightly considered as having psychical relations because of its intimate connection with the respiration and circulation. Its function of elimination, if impeded has a depressing effect upon the feelings, while if performing well its office a sprightly and cheerful condition of the mind is induced.

The function of digestion has an especial influence upon the mind. This is clearly evidenced in the change which takes place in the psychical feelings when a person languid from fasting has partaken of a full and wholesome meal. It is a common saying that if you wish to obtain a favor of, or strike a good bargain with a man, interview him *after* his dinner, when a full meal has put him in a more genial and generous frame of mind than you would have found him had you approached him only one hour sooner. Though moderation in eating has the effect of favorably inciting the mental faculties, the consequence of excessive indulgence is to paralyze them. Some persons attach so much importance to the pleasures of the table, which so much absorbs their time and attention that they are rendered unfit for intellectua. exertion—they live to eat until they truly become

> "Fixed like a tree to some peculiar spot,
> To draw nutrition, propagate and rot."

Vegetarians claim, and perhaps with some show of proof, that animal food has a tendency to stimulate the passions, and animalize the nature, while a vegetable diet has a more refining influence upon the intellect and morals.

An obstruction of the normal excretions is antagonistic to a benevolent and cheerful disposition. "Could we penetrate into the secret foundations of human events, we should frequently find the misfortunes of one man caused by a morbid condition of the intestines of another, whom the former endeavored to inspire with sympathy in his fate at a moment when the frame of mind of the latter was affected by impeded secretion. An hour later and his fortune would have been made." The peevish, morose and often melancholic mood of the dyspeptic is too frequently observed to require other proof of the importance of a healthy action of the digestive organs to a pleasing and cheerful state of the mind.

The sexual function is perhaps the most potent of the physical influences upon the mental condition. The physical metamorphosis which takes place with puberty itself is too great to escape the notice of the most careless observer. It is then, as the German author Feuchtersleben has said, that, "the mind of the young man is powerfully impelled in the direction of the will, that of the maiden in the direction of feeling; images of undefined delight float before their minds; the enchantress, Fancy, reigns in all her loveliness; soothing and rapturous emotions alternate in a constant tumult of ecstacy; and love as a passion, with flattering but despotic hand—fortunate those who are able calmly to guide it—seizes the scepter. When happily controlled, whether designedly through education, and self-reflection, or undesignedly by a harmonious proportion of the de-

sires in the natural disposition, love becomes the source of the most beautiful psychical developments and he who never loved, is, or will become egotistical, mean, narrow-minded, covetous, timid, and but too often an unnatural sensualist. If ill directed the terrible passion becomes a source of most deplorable sufferings."

The gratification of the sexual desire has a decidedly psychical effect. If rationally indulged it exerts a wholesome influence upon the mental powers, while if inordinately gratified produces exhaustion of nervous power, mental depression and if carried to the extreme a total loss of every mental quality. Frightfully large is the list of victims of excessive sexual indulgence. Physical health and strength have been prostrated by it, intellectual powers have been totally destroyed, the moral element of the nature has been entirely subverted and a pitiful wreck of being has been left to drag out a most miserable existence in melancholy or it may be in insanity or idiocy.

Menstruation is in many women productive of mental changes. Pregnancy is marked by its peculiar longings. The climateric changes in some females give occasion to an altered and often to a melancholic frame of mind.

We will now proceed to notice the influence exerted by the mind over the physical system. It is a phenomenon which we all experience personally, observe continually in others, reflect upon but little and act upon far less than we might. Few have formed any adequate estimate of the source of bodily ills which have their origin in the mind. Physicians continually concentrating their attention upon the physical are prone to neglect the mental causes of disease; and probably not infrequently subject a patient to heroic medication, the true origin of whose malady was a deep-rooted sorrow which a moral balm alone could reach. In considering the influence of the mind upon the body, we would still further define the mind as the superintending, the guiding power over corporeal manifestations; it directs all the movements of the body, over which it has complete control; it is to the body what the engineer is to the steam engine, the body being but a mere machine suited to develop the operations of the mind and preserved and kept in order by the organic functions.

We assert that the mind derives none of its faculties from the body; it only employs the senses and their relation to the brain to form ideas, and it inherently possesses the power of so doing. The mind is dependent upon the body and external things for its knowledge in regard to them, but after that knowledge has been once acquired it is retained and may be recalled at pleasure. In the language of the great Abercrombie we would say: "The mind remembers, conceives, combines and reasons; it loves and fears and hopes in the total absence of any impressions from without that can influence in the smallest degree these emotions; and we have the fullest conviction that it would continue to exercise the same functions in undiminished activity, though all material things were at once annihilated." This opinion does not conflict with what we have previously said of the mind being influenced by external objects or corporeal conditions. Our own individual experience is constantly giving us proof of the correctness of both of these opinions, viz.: Of the dependence of the mind upon the body for its powers of manifestation and its independence of material things in the exercise of the qualities above mentioned, yet it is bound to earth for a purpose known only to the Great Creator.

But, to resume more directly our subject—the influence of the mind on the body—we would first observe that *feeling* exercises a marked influence over the animal economy, and when of a disproportionate character may become a great excitant or depressant. Many instances are recorded where death has been produced by sudden joy, others again by sudden grief. Sophocles, at an advanced age, and in the full possession of his intellectual power, composed a tragedy, which was crowned with such success that he died through joy. Chilon of Lacedemonia, died from joy, whilst embracing his son, who had borne away the prize at the Olympic games. Juventius Thalma, to whom a triumph was decreed for subjugating Corsica, fell down at the foot of the altar, at which he was offering up his thanksgiving. Fouquet, upon receiving the intelligence of Louis XIV having restored him to liberty, fell down dead. The Roman matrons after the battle of Cannæ, on seeing their sons whom they supposed had been killed, dropped dead upon the spot. These I have quoted from ancient records but every day, almost, brings us reports of like instances happening all about us. Fewer cases of sudden death from grief have been recorded, a longer time having elapsed after the cause of the emotional excitement before death ensued. Continued grief is the cause of many organic diseases. Many persons have become insane in consequence of being suddenly reduced to poverty, while on the other hand from a sudden accession of wealth, many have shared a like fate and become inmates of a lunatic asylum. Excessive feelings of displeasure when protracted produce a deficiency of innervation and quite a list of pathologic conditions have been attributed to this cause, e.g., muscular debility, dyspnea, typhus, amenorrhea, chlorosis, dropsy, scurvy, tuberculosis, scirrhosis, medulla sarcoma, etc. Some might reasonably question the assertion that mental feelings are capable of producing such pathologic conditions, for it is a matter difficult to prove, and yet there are doubtless many, very many cases of disease induced by mental conditions when we are not aware of the true cause. Some silent grief is gnawing at the vitals, and inducing disease varied in kind and degree, and in many cases causing death where no one, save the sufferer, knows the cause of his malady.

We are too apt to overlook the mental condition of our patients and the mental causes of their diseases. Here is a field for exploration wide and interesting, the psychologic causes of disease. "If a patient dies," says M. Reveille-Parise, "we open his body, rummage among his viscera, and scrutinize most narrowly all the organs and tissues in the hope of discovering lesions of some one sort or another; there is not a small vessel, membrane, cavity or follicle which is not attentively examined; the color, the weight, the thickness, the volume, the alteration, nothing escapes the eye of the studious anatomist. He handles, touches, smells and looks at everything; then he draws his conclusions one way or the other. One thing only escapes his attention; this is, that he is looking at merely organic effects, forgetting all the while, that he must mount higher to discover their causes. These organic alterations are observed perhaps, in the body of a person who has suffered deeply

from mental disease and anxiety; these have been the energetic cause of his decay; but they can not be studied in the laboratory or the amphitheater. . . Many physicians of extensive experience are destitute of the ability of searching out and understanding the moral causes of disease; they can not read the book of the heart, and yet it is in this book that are inscribed, day by day and hour by hour all the griefs and all the miseries and all the vanities and all the fears and all the joys and all the hopes of man, and in which will be found the most active and incessant principle of that frightful series of organic changes which constitute pathology."

(*To be continued.*)

THE THERAPEUTIC VALUE OF WEAK LENSES.

Remarks made in opening the discussion at the meeting of the Chicago Ophthalmological Society, March 13, 1894.

BY F. C. HOTZ, M.D.

CHICAGO, ILL.

The editorial on "Superfluous Spectacles" which a few weeks ago appeared in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, very justly and ably criticised the tendency, manifested in the practice of many oculists of the present day, to prescribe spectacles in every case of asthenopia. While formerly "weak eyes" have too often been regarded as the result of gastric disorders or systemic weakness, oculists of the modern school are evidently going to the other extreme in assuming anomalies of the refraction or the ocular muscles to be the only sources of discomfort in the use of the eyes. While formerly patients with "weak eyes" have often received unnecessary medicines, they now often receive superfluous spectacles.

I fully agree with the writer of that editorial, that it is time to call a halt to this one-sighted practice. In my clinic it has always been my aim, at every suitable opportunity, to impress upon the minds of my hearers the fact that the complaints of "weak eyes" may be due to a great many other conditions (local and general) independent of the refraction.

But while I am in perfect accord with the intent and purpose of the editorial, I can not sustain the position the writer takes in regard to the lowest degree of ametropia which can be considered as the cause of eye strain; I can not agree with him in drawing the line of usefulness against the glasses of very low power; and I wish to present to you the clinical facts in support of my opinion on this very important and interesting question.

The statements in that editorial to which I wish to take exception are the following:

1. That the cases in which half a dioptry of astigmatism leads to discomfort or headaches are exceptional and occur, as a rule, only when the general health is below par.

2. That the 0.25 cylinders or spherical glasses less than + 0.75 D. are merely of mythical value.

A careful study of my own observations has led to different results; it has led me to regard the 0.50 hypermetropic astigmatism as one of the most frequent, if not *the* most frequent source of eye discomfort and headaches caused by refractive errors. But inasmuch as the editorial admits that this degree of astigmatism is occasionally a disturbing factor, and that its correction may benefit the patient; inasmuch as it therefore concedes the propriety of prescribing the ½ D. cylinders under certain circumstances, I shall not discuss this point any farther, but confine my remarks to the second statement, which absolutely denies the efficacy of the 0.25 cylinder and of spherical lenses less than + 0.75 D. If such weak lenses have really no therapeutic value they should justly be denounced as "superfluous glasses;" if they have any value it behooves those who have tested their efficacy to accept the challenge to furnish convincing proofs for the same.

The mere fact that in a large number of cases of eye discomfort these low degrees of refractive errors are found, proves nothing, since we know these slight departures from emmetropia are so very common in the human eye. To assume that the patients would have returned for further treatment if the glasses prescribed had not given relief, is not an argument worthy of notice. And even the mere statement that the patient was relieved is in itself not sufficient evidence for the curative power of these glasses. If such glasses are prescribed to a patient suffering from slight blepharitis, or chronic conjunctivitis, or conjunctival irritation due to lachrymal obstruction or nasal catarrh, and his asthenopic complaints disappear under the treatment of these affections, we should not feel inclined to attribute the relief of the eye discomfort to the use of the glasses prescribed, but should rather consider them superfluous under such circumstances. Or if a patient has been working almost constantly by artificial light, and changes his habit after he received the glasses, we certainly could not regard the relief in such cases as convincing proof for the efficacy of the glasses.

But if all local or distant conditions which we know to produce ocular distress independent of refractive errors, are absent, or have been removed without restoring comfort to the eye; if the eyes are used under precisely the same conditions after the glasses have been prescribed as they were used before; or if an irritability of the eyes has resisted all treatment but is speedily relieved by glasses; then, and then only, we are warranted in attributing the relief of the eyes to the correction of the existing slight refractive errors. These conditions have been strictly adhered to in every one of the cases I now wish to present as clinical evidence of the therapeutic value of weak lenses. And from the fact that among the many cases of asthenopia and headaches I have seen in the last two years, there are only fifty cases in which I have prescribed such weak glasses, this fact alone may assure you that I have not prescribed glasses whenever a small refractive error was found, but that I have carefully considered all the conditions of the case before I decided that the use of the glasses was indicated.

In order to confine myself strictly to the question at issue (the value of sphericals less than 0.75 D. and 0.25 cylinders) I have selected cases only in which 0.25c, 0.50 D., or combinations of 0.25 or 0.50 with 0.25c were prescribed.

In all patients under 40 years, the refraction was taken under the influence of cocain and homatropin, but the eyes were tested again after the effect of the mydriatic had disappeared, before the glasses were prescribed.

To every patient who had not afterward reported, a letter was sent, requesting him to inform me whether he had used the glasses and whether they

relieved his complaints. By these means I have secured the desired information in thirty cases.

I have divided the whole series of fifty cases into four groups according to the different kinds of discomfort of which the patients chiefly complained.

But I do not propose to give a full report of all the thirty cases; I think a selection of a few cases from each group will answer our purpose as well and will be less tiresome.

I.—INDISTINCT VISION. TWO CASES.

Usually people with a slight degree of astigmatism do not experience any trouble in distant vision; but in the case of a lady, 33, whose left eye was amblyopic, the slight disturbance of vision in the right eye was decidedly annoying; V = 20-30 which was improved to 20-20 by + .25c 110.

The other case of this group is a very instructive instance to show how sensitive some eyes are to the accurate correction of a slight refractive error.

Case 2.—A gentleman, 46, has been using — .75 D for distant vision since twenty-five years; but though he can see with the glasses pretty well, they do not give him that clear and easy sight to be perfectly satisfactory. He can read 20-20 with — 75, but the letters are not clean cut; with — 50 V decidedly more indistinct. The round apertures of my astigmometer appear horizontally oblong with — 75; and vertically oblong with — 50; but perfectly round with — 50 ⊂ 25c 180; and with these glasses the test types and distant objects are perfectly clear. He has used the new glasses now a whole year with the greatest comfort and perfect satisfaction.

2. *Great irritability of the eyes; constant scowling and winking; sensitiveness to light; in reading the eyes become red, smart and burn and weep.* 12 cases; reports received from nine; all satisfactory.

Case 25.—Boy 12, constant frowning; eyes red and lids swelling after reading a short time. Refraction + 50 = + 25c 180; ordered + 25c for constant use. Was relieved, and because his eyes had been doing so perfectly well he left off his glasses several months ago; but after a few days was compelled to wear them again because the old symptoms had returned.

Case 33.—Girl, 15; dull pain in eyes; constant winking; very sensitive to light; mild conjunctivitis. Refraction + 50. Treatment removed the conjunctivitis in six weeks; but had no effect upon the other complaints; thus + 25 was prescribed for constant use for trial. The glasses brought relief at once; and after one year she reports "they still continue to do me good service."

One of the most convincing cases, I think, is the following:

Case 40.—Bookkeeper, 20; since more than a year has not been free from eye discomfort. After a few hours' work they burn and smart, and often a dull pain compels him to stop work in the afternoon. Very sensitive to light, can not read at all at night. Marked conjunctival irritation and slight fullness of the retrotarsal folds of upper lids. Refraction —1 = — 25c 180. Conjunctiva was treated; and while patient was not working his eyes rapidly improved; but when he went back to his books the old discomfort returned. After four months' fruitless treatment, + 25c90 was given for near work, and the topical applications were discontinued. This was six months ago; and he has been working over his books every day without the slightest discomfort.

3. *Asthenopic symptoms: Distant vision is very good, but reading causes pain in the eyes, or headache, a strained feeling over the eyes; a feeling of weariness and fatigue; sight becomes indistinct and unsteady.* 31 Cases. Reports received from sixteen; all favorable.

Case 14.—Boy, 14, never can read longer than a half hour; eyes get red, full of tears and painful. Refraction + 25c180. These cylinders were ordered for school work; and he reported after two months that the glasses had relieved him at once and continued to be satisfactory.

Case 41.—Miss N., 22, severe headache after reading or sewing; after twenty minutes' work sight becomes very unsteady; has to close her eyes to rest them a few minutes to continue her work. Refraction + 50 = 25c 90. Ordered + 25c for work. Asthenopia was entirely relieved.

Case 49.—Mrs. G., 30; since two years frequent headaches and a strained feeling after reading. Last year she was advised to use + 75 for near work, but received little benefit from these glasses. Refraction + 25 = + 25c 90; has used these lenses for reading, and writes now (after eight months): "I do not have the headaches I used to have before, and the print is never blurred as it used to be, which is very satisfactory, for it annoyed me exceedingly."

4. *Headache and other nervous symptoms which the patients do not connect with the use of the eyes.* 5 Cases. Reports received from 4; one negative, three favorable.

Case 4.—Mrs. D., 29; since many years headaches for which her physician could find no relief; when recently she complained of pain in the eyes, he referred her to me for examination. Refraction, R. E. + 50 = + 25c 180; L. E. + 50 = + 25 c 90. The 25c were prescribed for constant use, but her husband wrote me, "the headaches were traced to other causes and the glasses therefore discontinued."

Case 15.—Mrs. B., 35. Since twenty-five years has been doctoring for dyspepsia, frequent attacks of vomiting, and a very distressing tight feeling round her head. Sight very good; her eyes have never troubled her in reading or other near work. Two years ago one oculist prescribed glasses (+ .75) which seem to have been of some benefit to her, inasmuch as the vomiting became less frequent. Refraction + 75 = + 25c 90. Ordered + 50 = + 25c 90 for constant use. After one week she called to tell me her head was entirely relieved of that tight band and her appetite much better; and two months later she reported she had had no attack of vomiting since she wore the glasses, and had improved very much in health.

Case 43.—Mr. B., 44; since seven or eight years almost every day frontal headache which usually begins at noon and lasts till he goes to bed; has tried all kinds of treatment advised by different physicians. Refraction + 25c 180; the cylinders were given for constant use (and in addition + 50 for reading) and he returned after six and a half months to tell me he has had no headache since.

Case 47.—Miss M., 31; since childhood subject to headache starting over the eyes. In the last year the headaches were so frequent that she became quite nervous; can see very well and does a great deal of needle work without ever feeling the slightest discomfort in her eyes. Refraction + 50. I should not have thought of prescribing these glasses, had not the lady remarked that her head felt so much relieved after she wore them five to ten minutes at her second visit when the eyes had recovered from the effect of the homatropin. So I decided to let her wear the + 50 for trial; and she has called repeatedly to report of the continued great relief she has experienced.

Résumé: Of the fifty cases treated with weak lenses, thirty patients have reported good results, one patient has reported a negative result, and nineteen patients have not been heard from. If we take the most unfavorable view possible, and count every one of the nineteen cases not heard from as a failure, we may still be well gratified by the results of the treatment; for it has been successful in thirty out of fifty cases, or in 60 per cent. In the sight of these clinical proofs, it must be conceded that these weak cylinders are not superfluous glasses; that their therapeutic value is not mythical, but real; and that the oculist will render his patients a great service by prescribing these weak glasses whenever in his judgment he has good reason to believe that the existing low degree of ametropia is the source of the patient's distress.

We must not forget that the eye is the most successful in correcting by accommodative efforts the optical disturbances produced by slight degrees of hypermetropia or astigmatism, while in the higher degrees of these refractive errors it does not succeed, and therefore abandons the efforts. The moderate degrees, therefore are the prevailing errors of refraction found in patients complaining of the symptoms of eyestrain.

The degree of ametropia does not constitute the principal condition in the production of distressing symptoms; and experience does not sustain the statement that hypermetropia or astigmatism less than 0.75 D. seldom cause discomfort or headaches. The state of health, the condition of the nervous system, the occupation are very important factors,

and frequently account for the fact that in many persons a slight hypermetropia or astigmatism causes great distress, while other persons never experience the slightest discomfort from the same ametropia in kind and degree.

Many eyes can endure a great amount of strain with impunity, while other eyes are so constituted that their powers of endurance are quickly exhausted. One person may need glasses for the correction of a small amount of ametropia, while in another person the correction of a much higher degree is unnecessary, and glasses would be superfluous. We can not draw the line at a certain amount of ametropia; but should correct it, no matter how slight in degree, whenever it leads to disturbances for which eyestrain constitutes the most frequent cause.

Venetian Building.

REMARKS ON VAGINAL HYSTERECTOMY.

BY L. H. DUNNING, M.D.
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Vaginal hysterectomy is an operation so frequently done with such a high degree of success by so many different surgeons that I would not attempt to remark upon it, had I not had an unusual experience in two recent cases.

Having had my attention called to Pratt's modification of the operation, I procured copies of the *Medical Century* containing several articles by the author of the method, and others who had observed his work. The essential characteristics of his operation, so far as they differ from other methods, are as follows:

The uterine cavity is tightly packed with antiseptic candle-wicking to distend the uterus and make distinct its outlines. The Simons' position is employed and the uterus brought into view in the usual manner and stout threads passed through the anterior and posterior lips of the cervix. The initial cut around the cervix is made nearer the os than usual. The separation of the vaginal and cellular tissue and bladder is carried very close to the uterus and as high as the margin of the lower border of the broad ligament. This separation is effected by a spud or by the author's sickle knife. It is carried farther up before and behind, until the peritoneal reflection is reached, always keeping close to the uterus. The peritoneum is incised in front and posteriorly and severed close to the uterus laterally in either direction, as far as the broad ligaments. The index finger is passed beneath the broad ligament upon one side, so as to put it upon the stretch and to serve as a guide in severing the broad ligament from its attachment to the uterus. This is effected by cutting it very close to the uterus with the sickle knife, when the one upon the other side is treated in a like manner. This procedure, the author states, is effected with the loss to the patient of very little blood. It is said that the success of the operation all depends upon keeping close to the uterus, and that the uterine artery or some of its branches will sometimes be severed and much hemorrhage result if the tissues are separated even one thirty-second of an inch away from the uterus. The author in one article says he has performed forty-nine vaginal hysterectomies by this method, with the death of but one patient. It is further asserted that the recovery of the patients is greatly facilitated because there are no ligatures left behind to cause suppuration, or crushed tissues to necrose and slough away; lastly, that no nerve tissue is crushed or compressed.

Being favorably impressed by the advantages of this method, if safe, I decided to employ it in the first suitable case that presented to me for operation.

January 31 Mrs. A., aged 63 years, came to my private hospital for operation for cancer of the body of the uterus. She had passed the menopause ten years previously. She began having hemorrhages three months ago. These were not profuse and were irregular. There were fetid watery discharges. Friable particles had been previously removed by curettement and the pathologist pronounced them carcinomatous in character. I prepared to employ the method proposed by Pratt, and carried the method forward to the point of severing the broad ligaments from the uterus. (Here my courage failed me, probably on account of having lost a patient four years ago of hemorrhage in a similar case from a defective forceps.) The clamps were applied to the broad ligaments. The clamp upon the left side was applied so close to the uterus that when the uterus was cut away no tissue was left projecting beyond the inner blades of the forceps, so that while applying the forceps to the opposite ligament the forceps upon the left side pulled off and fell out of the hand of the assistant, falling upon the floor. Inasmuch as no hemorrhage followed this pulling off of the forceps, no attempt to secure the liberated broad ligament was made. The tampon was placed and the patient put to bed. She made an uneventful recovery, there being no post-operative hemorrhage. The forceps upon the right side was removed in sixteen hours, instead of allowing it to remain twenty-four hours, as had been my former custom. There was during this operation the loss of not more than one-half ounce of blood and not an artery tied and only one forceps left. Upon examining the uterus after its removal we found but two small arteries upon each side entering the uterus; one midway between the external and internal os and one about one-half inch above the internal os.

In commenting upon this case at a meeting of the Marion County Medical Society, I stated that I could see no reason why this uterus could not have been safely removed without the use of a ligature or forceps, and that I thought I should try the procedure in the very next case I operated upon.

February 9 the opportunity presented itself. Mrs. B., aged 36, came into my ward at the City Hospital for the removal of the uterus for an aggravated case of procidentia with dislocated bladder. There was also complete prolapsus of the vagina, and the bladder when filled with urine formed a tumor anterior to the uterus and all hung without the vulva between the limbs. Certainly here was a fine opportunity to do a new operation in distinct view. The packing of the uterus was omitted. The cervix was seized with a volsellum forceps to steady it and control its movements. The dissection of the lower segment of the uterus was carried forward with blunt pointed scissors. The uterus was hugged closely in the dissection. By the time we had reached the lower margin of the broad ligaments, five small arteries had been severed and were spurting vigorously. They were caught with catch forceps. We had by this time concluded it would not be safe in this case, at least, to sever the broad ligaments without clamps or ligatures, nevertheless, I concluded to sever one broad ligament before tieing or clamping. So at the proper stage of procedure I began cutting from below upon one side, but I had not proceeded far when a quite large artery was cut across and bled freely. From this time forward we returned to the old method of ligatures. On examining the uterus removed, a very different condition of the circulation was found than was present in the former case. There were five or six small arteries entering the uterus upon each side, and each one was nearly or quite as large as those in the former

case. The increased vascularity of the latter case probably could be accounted for on the ground that the woman had not reached the menopause and the uterine and peri-uterine tissues, in consequence of their prolapsus, had been for a long time in a condition of congestion. In the former case, normal atrophy of the sexual system had taken place. Not an artery spurted in the whole operation, while in the latter case not only did the numerous arteries bleed, but free oozing took place from the incised vaginal tissue.

These experiences lead to the old and oft repeated conclusion that a procedure which would be safe in one case if followed in some other would result disastrously. The wise and skilful surgeon must himself determine the course to be pursued in each case.

In the February number of the *Indiana Medical Journal* appears a translation from an article by Landau of Berlin, (translated by Dr. Bell) which credits Sauter of Constance, Germany, with having done the first hysterectomy in 1822. In the technique of the operation, without the use of speculum or retractors, the broad ligament attachments are severed from the uterus with the knife, and no clamps or ligature employed upon these structures.

Thus, at that early day, was performed and described in a monograph a vaginal hysterectomy, which in its essential features is identical with the one so recently brought forward by Pratt.

Dr. Bell informs me that Sauter's first case was successful, in that the patient lived four months, at the end of which time she died of edema of the lungs.

The tendency is strongly toward simplifying vaginal hysterectomy, but every operator is, I think, impelled to employ sufficient painstaking care to protect the patient against the greatest danger of the operation, viz: hemorrhage.

A CASE OF CYST OF THE CEREBELLUM.

BY WM. F. WEGGE, M.D.

SUPERINTENDENT NORTHERN HOSPITAL FOR THE INSANE, WINNEBAGO, WIS.

For the history of this case previous to the patient's admission to this hospital, I am indebted to Dr. W. H. Gunther.

J. B., admitted Oct. 18, 1893, aged 40 years. Occupation, sewer-builder; education, fair; a native of Canada; was first taken ill in the spring of 1893.

The first symptoms were observed by his fellow-workmen who noticed that at times the patient would stop in the midst of his work and appear unconscious of his surroundings for periods of varying duration. At such times his left eye would wink frequently. His work was always well done and nothing irrational was noticed. He frequently complained of headache, and claimed to have had a similar attack ten years previously.

Dr. Gunther was first called on Sept. 8, 1893, when he found the patient in bed, rather stupid; complaining of severe general headache, vertigo and numbness of all extremities. His temperature was 97 degrees F.; the pulse was small, weak, intermittent, and beating at the rate of 108 per minute. He was very much constipated. There were present singultus and belching of gases, but no vomiting.

The left eye was closed spasmodically at intervals; the pupil was very much contracted and responded rather slowly to the action of light. The right pupil was dilated; light reflex almost absent.

The tongue was protruded slowly, and was slightly drawn toward the left. Speech was tremulous, and sentences were frequently left unfinished. Hearing was defective.

He assumed the erect posture only with difficulty and some assistance. He showed a marked tendency to falling toward the right. At times a general tremor of the body lasting several seconds was observed. Motor and sensory disturbances were noted.

There was a gradual improvement lasting about one week, after which he again grew worse; urine and feces were passed involuntarily and his mind became more affected.

Status præsens: The patient is a man of rather below medium height, with poorly developed muscles and subcutaneous fat tissue. His complexion is sallow; the face is dull, expressionless and rigid; his neck is apparently held rigidly in position and is thrown slightly backward. (There are no evidences of syphilis.) He lies on his back with the body inclined toward the left. He is aroused with considerable difficulty; answers simple questions correctly but apparently fails to comprehend more complicated ones. Respiration is normal; pulse 100.

On examination there is no evidence of paralysis of the muscles supplied by the facial nerve; the tongue is protruded straight; hearing is somewhat impaired but swallowing is not materially interfered with.

There is weakness of all the extremities but no paralysis. Patellar reflexes are exaggerated, but there is no ankle clonus. The pupils are dilated, pupillary reflexes are absent and there exists total blindness. There is no indication of paralysis of the extra-ocular muscles. Ophthalmoscopic examination discloses a double optic neuritis.

The patient is unable to stand or walk alone and shows a marked tendency to falling backward and toward the left. Bowels and bladder are emptied involuntarily and, it appears, unconsciously.

It is difficult to estimate the amount of urine passed, but it is not excessive as near as can be estimated. It is of a light straw color; of acid reaction; has a specific gravity of 1025, and contains no albumen but sugar is quite abundant.

The subsequent events were marked by little of special interest. His mind became more clouded and for some time previous to his death was almost a total blank. At no time were there epileptiform convulsions or vomiting. Death occurred somewhat suddenly on Jan. 19, 1894.

An autopsy was made thirty-six hours after death, the brain being the only organ examined.

The dura was rather thick in several places and adherent to the pia at these points. The blood vessels were distended with blood; the convolutions were flattened; the ventricles enormously distended and filled with a clear fluid.

The basilar artery lay in a deep groove on the surface of the pons. The right olivary body and the right olfactory bulb were absent.

The left lobe of the cerebellum was much larger than the right; the former bulging anteriorly. On incision about one and one-half to two ounces of a clear colorless fluid escaped. A tumor of about the size of a filbert was found imbedded in the cyst wall.

On looking over the literature on the subject, I find one case of cyst of the cerebellum reported by Maunsell in 1889,[1] who trephined for and evacuated it successfully.

Dr. Wm. C. Krause[2] has also reported a case in which an antemortem diagnosis was made.

Dr. W. W. Keen[3] says that, "with the latter (referring to tumors of the cerebellum) the knee-jerks are habitually diminished;" and in a footnote suggests that this may be a useful detail in distinguishing between tumors of the pons and those of the cerebellum.

In my case the knee-jerk was distinctly exaggerated and it was slightly exaggerated in the case of Dr. Krause. I merely wish to call attention to this, because it tends to show that it is not well to pay too much attention to the fact that the knee-jerk is excessive in making a diagnosis in tumors of this region.

1 Reference Hand-book, Vol. ix, p. 126.
2 Journal of the Amer. Med. Assn., Vol. xxi, p. 481.
3 Reference Hand-book, Vol. ix, p. 133.

Why the tendency to fall toward the right was marked during the early stages of the disease, and was later changed to a tendency to fall toward the left, I will not attempt to explain.

It may be of interest to note that in my case the glycosuria was permanent, while in that of Dr. Krause it was temporary.

THREE CASES OF EXTRA-UTERINE PREGNANCY.

ONE BEING COINCIDENT WITH NORMAL UTERINE PREGNANCY, AND ONE BEING A CASE OF ABDOMINAL PREGNANCY—OPERATION AND RECOVERY IN ALL.

Read before the Union Medical Association of Northeastern, Ohio, at Akron, Ohio, Aug. 8, 1893.

BY J. A. DICKSON, M.D.

YOUNGSTOWN, OHIO.

Case 1.—On Sept. 18, 1891, I was called by telegram to see Miss S., with the injunction to come by daylight in the morning, prepared to operate. I found my patient to be a young girl 18 years old and unmarried, with the history of suppressed menstruation for two periods. Two weeks before the time for the third period she was seized with abdominal pain and uterine colic, with a profuse discharge of clotted and shreddy blood, which was supposed to be a return of the long delayed menstrual flow. This peculiar flow continued for two weeks, but its long continuation was not a source of anxiety to patient or friends, on account of the long delayed menstruation. On the 18th, one week after the cessation of the flow, she rode fourteen miles, over a rough road in a huge Pennsylvania wagon. She was seized that night with terrific abdominal and uterine pain, with a resumption of the bloody discharge. On the morning of the 19th I found her exsanguined and apparently in collapse.

Upon examination I found a large mass on the left side, and the pelvis full of an undefinable substance. Womb pushed to the right. I elicited no information from either patient or friends except that of delayed menstruation, and a black clotted discharge lasting for two weeks, with its resumption now, after severe exercise, with pain, exsanguination and collapse. Suspect extra-uterine pregnancy and advise operation, with no idea that it will be accepted. To my surprise patient and friends readily accept. Operated at 11 A.M.; incision six inches in length in middle line. Upon reaching the peritoneum I find it black, and it readily ruptures upon being taken up in the bite of catch forceps, with a gush of dark clotted blood. I enlarge the incision to eight inches, and discharge a large quantity of blood clots and detritus. The fetus is washed out with the blood clots, apparently from eight to ten weeks old. Find the left tube to contain the ruptured fetal sac. Remove it entirely, tying close down upon the womb. Right ovary and tube perfectly healthy. Leave them, *in situ*, unmolested. Wash out abdomen with a Price irrigator, using common boiled water, as the operation was done in the country and such was the desperate condition of the patient that I could not send for distilled water. Closed incision with eight stitches. Dress with iodoform, and bichlorid gauze and put patient to bed with hot water bottles. So sure was I that the patient would die within the hour that I was glad, leaving her in good care, to get out of the house and take the train for home. Received a telegram the next morning that patient had reacted nicely, and was doing well. Saw her on the evening of that day. Temperature 101 4-5, pulse 98. The subsequent history of the case is that of uninterrupted recovery, without a bad symptom. The lady is now in Iowa, teaching school, having learned, it is hoped, a good lesson herself in the school of experience.

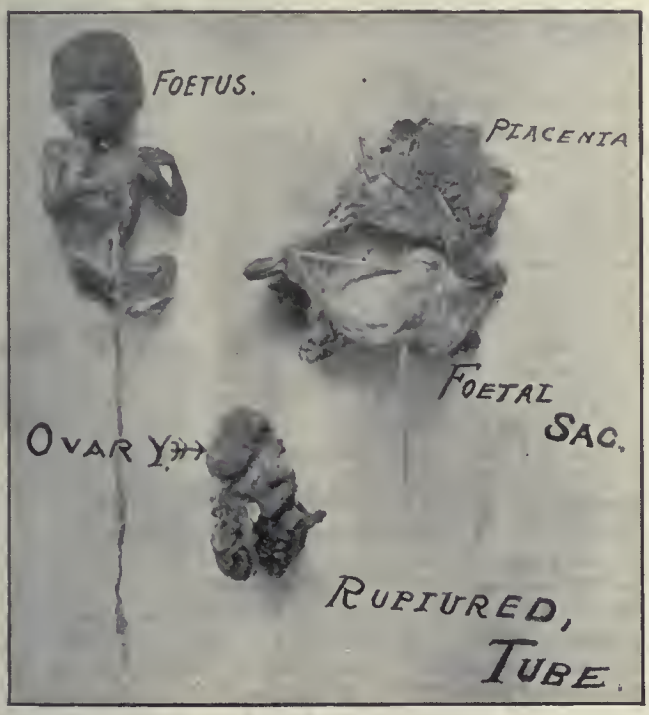
Case 2.—Mrs. F. aged 28 years. Married twelve years. Four children; two dead, two living; and two miscarriages. I was called to see her Oct. 17, 1891, when I found her miscarrying at about the fourth month. Fetus and membranes expelled *en masse* with no subsequent hemorrhage. After fourth week the menstrual period not appearing, she came to me for advice. Advised her to drift, and gave tonics. After eighth week saw her again. Upon examination find os soft and velvety, uterus enlarged, and mucous membrane of vagina dark, and purple in color. Probable pregnancy and advise her to wait and go through with normal pregnancy.

December 26 called to see her again, just ten weeks from former miscarriage. Flooding, fetus and membranes cast off *en masse* as before. Jan. 10, 1892, called to see her again. Flooding; discharge, clotted and shreddy; chills, severe abdominal pain, and bearing down sensations. She thinks that she "has piles" that "the trouble is in the bowel." Upon examination I find uterus above the pubes, but do not recognize it as such at the time, but think it the cervix of a retroverted womb. On account of normal pregnancy do not dream that it was complicated by extra-uterine. I find a large mass back of uterus in cul-de-sac, which I mistake for gravid retroverted womb, containing the remaining twin of a plural pregnancy. Try to replace uterus by gentle taxis, but find it to be impossible.

January 15, called early in the morning. Wasting, chilling, lips bloodless, pulse thready and weak, severe abdominal pain, tympany, collapse. Examined her under ether. Find everything as described before. Pass sound gently and find that it passes into small mass just above pubes which proves to be the womb. Mass back of uterus feels as large as small fetal head, soft and boggy like a cyst. Either a cyst or extra-uterine pregnancy. Probably extra-uterine on account of history and symptoms. Advise operation, which was as promptly refused. The history from this time until January 23, is that of recurrent bleeding, external and internal, peritonitis, tympany, excruciating abdominal pain and collapse. Jan. 23 seeks operation. Operated with assistance of Drs. A. C. Wilson, and M. S. Clark. Small median incision. Upon reaching peritoneum find it black with coloring matter of extruded blood. Find uterus, *in situ*, in normal position. Find mass back of uterus to be a mass of friable partly organized blood clot, in which is imbedded the ruptured left tube. Abdomen full of blood. Enlarge incision to pubes and through the umbilicus, as I find that I must introduce my hand in order to tease out the tube which is as thick as the wrist. Break through the nest of adhesions which seal over the mass, and scoop out with my hand a wash basin full of blood clots. Release tube from many firm adhesions and tie it off, close down upon the womb. Examine the other ovary and tube, and finding that they also are diseased remove them. Wash out the abdominal cavity with hot distilled water, with a Price irrigator, until the water comes away sweet and clear. Close up incision with seventeen stitches, introducing a drainage tube well down in Douglas cul-de-sac. Dress with iodoform and gauze and apply bandage, with rubber dam over the bandage for drainage tube. Time of operation fifty-five minutes. Dress tube every hour until serum comes away discolored. Remove tube on the second day. The history of this case is one of speedy recovery. Under small doses of antikamnia she has a minimum of pain, and secretions are left normal, which can not be said of morphia. Not a stitch abscess or a drop of pus about the incision. Remove stitches on the seventh day. Patient now perfectly well. Upon examination of the specimen find fetal membranes within the tube; the fetus having escaped into the abdominal cavity, is lost among the blood clots and detritus. For fear some of my confrerés may be disposed to criticise my long incision, I may say that through my initial short incision I was absolutely unable to reach the tube, such were the extent of the adhesions, and I would not have been able to deliver the tube, such was its size, through the short incision had I been able to reach it. Adhesions were simply frightful. I do not believe that the short incision is the *sine qua non* in abdominal surgery when there are such complications as were found in this case. Although the history of long incisions is not as good as that of short ones, I believe that with proper care, attention and cleanliness, a long incision is as safe as a short one.

My excuse for reporting this case at length is that with but one exception it is unique, and it may be of interest to the profession at large. The only other parallel case which I am able with references at my command to find, is one reported in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, March 29, 1890, by the Vienna correspondent of the *Medical News*, of which the following is a brief résumé: "A few days ago Dr. Rosthorn, assistant at Professor Chroback's gynecological clinic, operated upon a case of apparent ovarian cyst. Eight weeks before, the woman was delivered of an eight months child; labor normal.

The operation was made in the ordinary way and supposed cyst removed. At one portion a peculiar cord-like process was attached. Rosthorn examined the other ovary; it was normal, but while examining, a small hand slipped out from between the intestines. This was seized and a child was removed from the abdomen and to its umbilicus was attached a cord exactly similar to that found on cyst. They then looked for fetal membranes, and found them very deep and everywhere adherent to the intestines and peritoneum. The woman rallied and seven days after the operation was doing well. The careful examination of removed cyst showed that the tumor was merely the placenta, coiled up where it had been fastened to the left Fallopian tube." The following résumé of this case, quoted from same article, JOURNAL AMERICAN MEDICAL ASSOCIATION, March 29, 1890, might also be a verbatim résumé of my case: "There was an extra-uterine pregnancy and an intra-uterine pregnancy went on normally at the same time." It can not be established, though it is probable, that the



two children were really twins, and one developed within, the other outside of the uterus. The article quoted further says: "Thus it stands without a parallel in the history of obstetrics, etc." The history of this case makes mine all the more interesting to me, and I hope also to the profession.

Case 3.—On Wednesday, Aug. 12, 1892, I was called out of town to see a patient suffering from "inflammation of the bowels," as the message expressed it. I found my patient to be a young widow woman, 31 years old. Husband dead for thirteen months. History shows that at the time of death of her husband she had thought herself pregnant for about three months. At that time due, it was thought, to the sudden and accidental death of her husband, she had an attack of what was thought to be inflammation of the bowels but was evidently peritonitis. She was ill, and confined to her bed for several weeks, and the attack was very nearly fatal in its consequences.

After her recovery from this sickness she slowly regained her general health, with the exception that she complained of a dragging sensation in her left side, and thought that when she turned from one side to the other in bed she could feel something move in her abdomen. Bowels were constipated and there seemed to be more or less of an obstruction when they moved. Menses did not reappear until the third month after the death of her husband, when they came on with a scanty, not deeply colored flow at first, and gradually resumed their normal characteristics. From this fact she comes to the conclusion that she was mistaken regarding her pregnancy, and that up to the time of her husband's death it was simply delayed menstruation, and that its non-appearance after his death, was due to the shock resulting from his death, and the long severe attack of "inflammation of the bowels."

Her health continued to be fairly good until Aug. 11, 1892 when, while she was standing on a step ladder only two steps from the floor, her foot slips and she falls to the floor, striking her left side upon the ladder during her descent. From this time on she has the most severe abdominal pain, with symptoms of peritonitis, swelling, tympany, and most exquisite tenderness, so great indeed that she can not allow the bed clothing to touch her. Limbs drawn up, and can not allow herself to be moved and scarcely to be touched. In this condition I find her, on August 12 on my first visit. Pulse 140, very weak and thready. Temperature 104.4. Abdomen very much distended—so much so in fact that the surface is glazed and shining. Face pinched and anxious; nose, ears and finger tips cold, and all the other symptoms of collapse.

Upon making a bimanual examination I am unable absolutely to map out anything; such is the distension of the abdomen, the pain and anxiety of the patient, that she is unable to make the abdominal wall flaccid, and I am afraid in the present condition of patient to give her ether, as she seems to be dying. Although I recognize the gravity of the case, and the fact that it is certainly an operative one, yet on account of the seemingly near approach of dissolution, I decline to operate and come away, deeming it best if she must die not to interfere. Perhaps also I am influenced to this decision, by the fact that I am not prepared to operate, as the message says: "inflammation of the bowels," and I supposed the case to be one for medicinal rather than surgical treatment.

I fully expect in the morning to hear of her death, but during the night receive a message that she has rallied wonderfully, under treatment, and that she and her friends wish me to come immediately, prepared to operate, and that they will assume all responsibility. Go to her early in the morning. Pulse 100. Temperature 101. She seems much brighter and more hopeful. Decide at once to operate. With a probable operation in view, had the room cleaned and prepared the night before, rather hurriedly but still as carefully as possible, and operate at once.

Upon making the abdominal incision in the median line, so great is the distension or from the fact that there has been an old hernia, I immediately strike subperitoneal fat and peritoneum and enter the cavity. There is a rush of dark grumous but not offensive liquid, in which is floating a quantity of peculiar flocculent material. With the gush of water comes a a fetal hand and arm. I grasp this and with gentle traction deliver a fetus, to which is attached the cord. Upon making gentle traction upon the cord it separates, but with small catch forceps I grasp the distal end. With this as a guide I follow out to the site of the placenta to which is attached the fetal sac, and am able without the slightest difficulty to peel it off with my fingers. This is accomplished easily, probably on account of fatty degeneration at placental site.

Examine the left ovary and tube, find many adhesions at the site of old rupture and remove them. Right ovary and tube seem to be healthy and leave them.

The peritoneum and bowels appear to be in pretty good condition, although there are several places on the bowel where there are deposits of lymph, and one or two where surfaces are attached by adhesive inflammation. These I detach by gentle sponging with a fine sponge, being careful not to injure the bowel in the least, fearing that if I allow them to remain I will get knuckling of the bowel or at least loops into which other portions of the bowel may find their way. After removing all possible débris, and inspecting bowels carefully, I replace everything and wash out with hot water. I irrgate until the water comes away perfectly pure and clear; then close up with silkworm gut sutures.

Time of operation, from the time of incision until sutures were in place and incision closed, thirty-five minutes. Dress with a mixture of iodoform and boracic acid, gauze and cotton, apply bandage and put patient to bed. Patient rallied well and was soon out of danger. Remove stitches on seventh day, with a clean wound, without a drop

of pus. Pulse never went above 110, and temperature 102 after operation, and both were normal after tenth day. Bowels moved on the second day, spontaneously, and regularly afterwards every day. Gave no morphia whatever, to which fact I attribute the splendid condition of the bowels. Patient did nicely, during her whole convalescence, and sat up on the seventh day for the first time. She is now well and a very grateful woman. I did not explain to her her condition, until several weeks after the operation, when I explained it to her as I have given it below in my conclusions, and it seemed to satisfy her perfectly.

From a résumé of this case, I conclude:

1. That this was an honest woman, and the child her husband's.

2. She was pregnant, with fetus in left tube, at the time of her husband's death, and the shock of his accidental death produced a rupture of the tube which brought about severe peritonitis, the so-called attack of "inflammation of the bowels."

3. Rent in tube did not cause death by hemorrhage; she recovered from peritonitis; fetus, through the placenta, formed its attachment in new position, flourished here for a time, and finally died, becoming encapsulated.

4. Fall from stepladder ruptured fetal sac, and fetus escapes into the abdominal cavity, becoming a foreign body, and gets up a peritonitis which called for the operation.

THE FUTURE OF MEDICINE.

Opening Address delivered before the College of Physicians and Surgeons, Boston, Mass.

BY EPHRAIM CUTTER, M.D., LL.D.

NEW YORK.

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I felicitate you, students of medicine, on the plane of the profession being higher than that of forty years ago, when I was in your place. The profession then, was not registered; now there are listed over 100,000 persons practicing medicine in the United States; some state the number to be 162,500. Then, medical students were attending some schools in bodies of 500 or so at a time. Now, their catalogues show between 800 and 900 in attendance in a single institution, and about 17,000 in the United States in 100 or more medical schools. This is a large number to be increased by the veterinarian, the dental and pharmacal students, but it is to be observed that the labors of medical men are so severe that but 17 per cent. will hardly cover the annual death rate.

Then, the medical organizations were few. The Massachusetts Medical Society with some 1,200 members was the largest. Now, we have national, international, Pan-American, district, city, State and specialist societies in all the schools of medicine. The Tenth International Medical Congress, Berlin, 1890, was said to be the largest gathering of scientific persons ever held. It numbered about 7,000. There were some 700 papers on its published program, indicating an intense activity of medical thought perhaps before unequalled.

Then, the medical journals were comparatively few. Now, the astounding number of about 250, are said to be published in the United States. Beside, medical books are published in large numbers. I have been told that from one publishing house in the West, where religion and medicine are conjoined, systemic medical treatises have been sent off by the car load! No other profession approaches, I think, this number of ephemeral and permanent vehicles of information on technical knowledge. In the light of these facts, complaints as to medical illiteracy, although not without foundation, are not fully sustained, and I doubt if there is any such exhibition of professional self-denial and seeking for others good, as shown in medical journals which are really maintained by gratuitous contributions.

Within forty years, such men as Pasteur, (a medical Moody) Claud Bernard, and Brown-Sequard in France; Virchow and Koch in Germany; Lister, Richardson and Mackenzie in England; Sayre, Sims, Salisbury, Beard, Elsberg, Holmes, D. H. Storer and Marcy in America, and many other masters in medicine well worth naming, have shed a flood of light in which you to-day can rejoice. Another remarkable evidence of advance is the division of the curriculum into three and four year courses. The writer when a medical student, made such a division for himself, adding special courses in chemistry, surgery, physical exploration and microscopy. The Post Graduate schools were foreshadowed by these special courses. But we must not think there were only ignoramuses forty years ago. As President Dwight truly said: "Our fathers, if they did not know everything, knew something." They made mistakes; we do. "It is human to err." Daniel Webster said: "I would not give a cent for a man who never made a mistake." Another of our high dignitaries has said: "One who never made a mistake never made anything." The fathers were pressing onward and upward in a path of investigation which has made the advances of our profession possible. Please permit a concrete illustration of the position of the medical profession forty years ago:

A student of medicine had been through college, taught school a year, and was consulting with his father about entering a medical school, since he was in doubt as to his course. Among other things he said: "Father, I do not want to study medicine to practice it as you have, but I would like to study medicine to learn about the causes of disease." The father, a beloved physician of brain, tactful, and of good judgment, keen in diagnosis and prompt and bold to act, with a large practice, for some minutes reflected and replied: "I would like you to study medicine and the causes of diseases all you wish. I will help you all I can, but there are three things I want you to study: 1, what is the cause of consumption? 2, what is the cause of diseases of women? 3, what is the cause of diseases of the nervous system? We doctors do not know anything about it!" No more was said, but the son was almost overwhelmed by eight words, which self-dethroned his revered father from the high position he had occupied as his son's idol, (as knowing everything); but the father's words forcibly depict the state of knowledge then; thank God, not now; as all three questions have been answered to the son's satisfaction as well as to other medical minds. Through the vista of four decades, this father appears, most honorable for his frankness, decision, judgment and forecast in giving to the son a grand life task. *I was that son.*

PRESENT STATUS OF MEDICINE.

Those of you who attend the course of lectures given by the well-qualified professors and lecturers of this College, will have more than work enough for four years, to understand this part of my subject. This good Faculty will give a far better presentation

than I can here or elsewhere. Hence I beg your indulgence to listen briefly to what seems to me to be the

FUTURE OF MEDICINE,

as influenced by American ideas, which my distinguished associates may think belongs to the chair of clinical morphologies and applied medicine. I say American advisedly, for while we give credit to all discoveries, we can not slight our own and be just. What I say is said on my own responsibility, and comes from the depths of my heart, prompted by filial love and an earnest purpose to do well the life task set as above.

1. The medical science of the future will include a new physical sign of the pre-tubercular state. That is, it will detect consumption any time within a year before the lungs are broken down, and in ample season to anticipate the usual signs furnished by auscultation and percussion, and to make proper treatment and cure not a dream but a tangible possibility. It consists in peculiar phases of the blood taken in connection with the other evidence which I have termed, "the morphology of consumptive blood," for several years, and which medical men have used for more than a quarter of a century; and this physical sign is most valuable because any disease is most hopefully treated before it is fully developed.

As foreshadowing what will be attained in this direction, I beg leave to refer to an essay written in 1877, illustrated with micro-photographs, original as to subjects and highest power objectives, that have been examined by leading microscopists in Paris, London, Berlin and America, and pronounced to be skilful as delineations and valuable as sources of scientific investigation. The regard of the writer for this sign, is seen from his motto for 1879, and his expressed belief that should the experience of two physicians for the past twenty-five years be realized by the regular profession of the United States, at least 13,000 lives annually would be saved.

The regard of such men as Dr. J. Marion-Sims may be inferred from his saying that this means of diagnosis was one of the greatest discoveries of the nineteenth century. The lapse of fourteen years, only confirms this opinion.

2. Another idea potential, is that chronic diarrhea is consumption of the bowels. This has so little actual energy that a late colossal medical dictionary disposed of it in the following six words: "Consumption of the bowels. Phthisis intestinalis." And yet it is a common disease best understood from the morphology of the feces, and traced to results of alcoholic fermentation.

If it is the physician's business intelligently to treat disease, then here is a fine field for future development. The prime cause is in improper feeding and the cure is based on proper feeding. I speak from experience, as I almost died from it in youth, but was cured by proper food.

It is my opinion that the cause of consumption is the acetic acid fermentation. For more than forty years, botanists have known of the bacillus of Koch, as pointed out, but have disagreed as to its relation to alcoholic and vinegar yeast. The morphology of common yeast shows this bacillus, so that the cause comes in with our food. This has been proved by pathologic synthesis of consumption in animals, and by cures by diet, forty cases of which, cured, most of them of ten years standing, were reported at the Tenth International Congress by the writer.

3. Bad feeding is one great cause of the diseases of women. Society ethics as to eating, exalt the carbohydrates, and demand the impoverishment of flour as to mineral elements in order to have bread white. Sweets are at a premium because of ethical esthetic taste. Women grown on society diet can not have full development. Hence in my opinion, the decline in the birth rate, and so much gynic disease. To use a womanly illustration, as well expect a dressmaker, who is furnished all materials for a dress, to make a garment with a dress pattern, a pair of scissors and a needle, as to expect to make up a good human body on carbon, hydrogen and oxygen when, it is said, forty elements are required by nature. While it is right to use all the peripheral means of treating gynic diseases, the central or centrifugal one of a proper diet should not be neglected. There are many opinions as to what a proper diet for gynic disease is, but my experience leads me to the conclusion that in cases uncomplicated with grave chronic disease, a diet of two-thirds animal and one-third vegetable is the best.

In this connection, may I say that in 1877 I published cures of uterine fibroids by diet in confirmation of what others have done. After the lapse of sixteen years, I re-affirm this position, and report that cases which had evidence enough to be called uterine cancer, have recovered by diet. If I said this was not so it would be daily denied by my wife, who was a case in 1877, and was cured.

4. Diseases of the nervous system, as apoplexy, paralysis, paresis, softening of the brain, sclerosis, locomotor ataxia "heart failure," a term too commonly used. These masquerade as nerve diseases, but are really mainly due to fatty and fibroid degenerations. It is impossible to separate the nerves from the organs and tissues involved in disease. A tooth with a killed nerve is dead practically. The pulsations of the heart come from nerve force. I never knew nerves caused apoplexy. Take the case, as reported, of the richest man in New England, found dead on the steamer, *Pilgrim*. This probably depended on the fatty degeneration of the muscular coats of the basilar arteries. There was a rupture and extravasation of blood into the brain tissue, which pressed on the nerve centers of respiration and cardiation so that the man was struck down dead as with a blow, hence the name, *apo*, from, and *plessein*, to strike down. Now what made the fatty degeneration of the muscular fibers in question? Answer, the impeded and sluggish circulation (English idea). The carbo-hydrates and fat food in excess, and their prolonged fermentation in the alimentary canal. (American idea). The treatment of apoplexy should be that of fatty degeneration, to-wit, the withdrawal of carbo-hydrates and fats, and the substitution of food which digests easiest, furnishes the most life and will replace every normal tissue in the body, as proved by trial. Nature, like the good dressmaker, furnished with all materials will take up and replace this fatty degeneration wherever fonnd.

As a cause of sudden death, heart failure is often reported. It shows a poverty of diagnosis, but the morphology of the heart would show often fatty degeneration.

Angina pectoris is termed a sclerosis of the coronary arteries. But the gravelly atheroma made up of choles-

terin and other bodies goes along with fatty degeneration. I know of a bad case of angina pectoris cured by diet. Asthma may be termed a neurosis, a bronchismus or spasm of the bronchi, from the irritation of gravel in the air passages, as the morphology of the sputum shows, and sometimes from the additional presence of a beautiful alga parasite, called the spirilina asthma, an American discovery of more than twenty-five years ago. Asthma has been termed a "gravel of the lungs" on this evidence. Now diet is the foundation way to remove the gravel and spirilina, and thereby the asthma. I thus cured a case of asthma of twenty-six years standing. Hay fever is "gravel of the lungs" also, the exciting cause being the pollen of plants, ipecac, castor oil, bean, pumice, etc.

To properly treat disease you must remove the predisposing and exciting causes, and nature cures. When you fire a gun you remove the charge (predisposing cause) as also the cap, (exciting cause). If the gun is not loaded it will not go off.

I do not know but that rheumatism may be called a disease of the nerves. The intense suffering of rheumatism would be *nil* without nerves. When people do not suffer they do not usually call themselves sick. Now rheumatism is gravel of the blood, as shown by an American years ago. The morphology of the blood shows this in the latent and actual stages. Food is usually the cause of gravels found in the human body. An American idea, adopted in Paris, is to wash out the gravels by distilled water; to this should be added food that will not produce gravel. A hint of what kind is seen in the action of a physician 40 years old, who was president of a vegetarian society in Germany, and found his temporal arteries atheromatous. He said: "Rigid arteries at my age, mean death." So he resigned and went on to animal food.

Gout is a variety of rheumatism which has a gravel of urate of soda. Any of the crystalline bodies found normally in the urine and feces may, when in the blood whence they come, cause rheumatism. The blood morphology also shows increase of fibrin filaments, red corpuscles, ropy, adhesive and coagulating in winrows. No one is really cured of rheumatism unless the morphology of the blood is normal. The enlargement of the heart found in rheumatism is mostly due to the resistance of the blood circulation. The heart has ganglionic nerve centers enough to be autonomic. The Bible statement, "the heart is deceitful above all things," sustains the heart's autonomy. The heart has something like cerebration in the brain, which I call *cardiation*. The heart knows when it should beat harder and does so, growing big by the excessive work. If it did not grow big, its work would not be done and death would follow. One way to treat cardiac hypertrophy, is to make the blood normal and nature will bring it down to normal size, other things being equal. I have seen this happen so often, that I am convinced of its truth. I feel sure that the future of medicine will embrace it, for no one wants a diseased heart when a normal one can be had.

THE RELATION OF FIBROID DEGENERATION TO NERVE DISEASES.

Whenever by improper feeding the nutrition is disturbed so that fibrous tissues replace that of normal spinal cord, sclerosis or hardening results, so that the fibrous sheaths of the spinal or cranial nerves are thickened and pinch the axis nerve cylinder. These are decidedly enough to cause nerve diseases which are recognized and are common. So far as I know, these lesions are incurable save by American plans of diet. I have seen cures. Some of the cases are mistaken for rheumatism but the morphology of the blood corrects this mistake, when taken along with the other evidence. The principle of the treatment is that nature cures fibroid lesions if the causes are stopped and food is used which is easiest digested, best assimilated and most nutritious, combined with other rational aids to treatment. How I have longed that our nerve specialists would take to this idea!

EAR AND EYE AFFECTIONS AS NERVE DISEASES.

It is an American idea that these are food complaints mainly. Certainly, when the ear communicates air vibrations up to 42,000 per second, and when the eye communicates vibrations of ether three thousand billions per second, it is because of the exquisitely marvelous development of the terminal nerves of the ear and eye! No nerves, aural or ocular, mean blindness and deafness. This subject is of great importance. It is stated that from 20 to 30 per cent. of the children in primary schools have defective hearing. Steps have been taken to relieve this class of unfortunates. The writer was called on to suggest some means of relief for this class and read a paper on the subject before a teachers' convention lately.

The pedagogic ground was taken that if the children with defective hearing could have a two-thirds animal and one-third vegetable diet, other things being equal, they would improve. The technical ground was that most of the defective hearing came from a fibroid thickening of the Eustachian tubes, and that the way to treat these cases was the same as when fibroid tumors had been removed by the diet.

Again, the cause of deaf mutism is largely from scarlet fever. But I say that had these cases been fed rightly, they probably would not have had scarlet fever so severely as to cause the lesions of deaf mutism. On this diet, a case of severe scarlet fever in my own family was fed, where there were abscesses in both ears and neck swelled even to the chin; the recovery was perfect, there being no deafness though it was feared. I am happy to say that Prof. Currier, Principal of the New York Asylum for deaf mutes, agrees with me as to the relation of food to deafness. If this is not a field for a splendid future of medicine now uncultivated, where is there one?

FOOD AND EYES.

When a distinguished oculist says that most eye diseases depend on difficult digestion; when cataract, arcus senilis, glaucoma and retinal apoplexy are forms of fatty degeneration; when the want of proper mineral matter in the food produces weak corneas and thus affects the sight, we need search no farther for a trophologic cause of defective vision, or imperfect ocular nerve action. Probably the common use of flour and sugar has a great deal to do with diseased eyes. As foods they are deficient in elements for ocular tissues. In the future of medicine this subject will be better understood and less grievous. The diet will contain the proper proportion of organic and mineral elements, the best to make normal ocular tissues.

BALDNESS.

Since twenty kine were wintered with water, hay, grain and salt, and came out with fine sleek skins, and another twenty kine were kept all winter in the same barn and on the same diet, minus salt, and came out with the loss of a large part of their hair, it would seem that food had something to do with baldness in these cases. Salt and air are food. Anything taken from without the body to sustain life and become a normal part of that body is a food.

The winter spent by the medical student above, in a chemical laboratory, taught that salt was an element in every tissue of the human body. The future of medicine will not overlook baldness, and rational treatment must look to food as a strong point, but not the only one.

The prevalence of defective teeth is so great, that we have a distinct department of medicine therefor. I am happy to state that the dentists generally admit the relation of feeding to the teeth and, so far as they can, insist on proper feeding. One of the most significant instances was given by Dr. Harriman of Boston, when in a three months' time a firm fibrous texture was restored to chalky and friable teeth by an outdoor life, and a diet of animal food. If such dense stony structures are so soon affected by diet, what must be said of the soft tissues?

The general profession should be proud of the advance made in its dental division. To it we owe surgical anesthesia. The admission of dentists to the AMERICAN MEDICAL ASSOCIATION is a great step for a more harmonious and effective medical future, and I fervently hope the time will come when food in motherhood shall be such that children will not be born with such defective teeth as now.

EVIDENCE.

I beg to show some evidence that the three queries put forty years ago have been answered, which would be satisfactory to the propounder were he alive to see it.

1. A report was made to the Berlin Tenth International Medical Congress, of 100 cases of consumption, 40 per cent. cures.

A young woman in consumption was consigned by her physician to a funeral. She took the plans hinted at here. Diagnosis confirmed and treatment guided by the morphology of consumptive blood. Christmas evening, 1889, she was married, and now has a family. Her case shows a romance in medicine, which I hope will be more common. My son, Dr. J. A. Cutter, married a like case. In the light of the 100 cases it can not be said that love cured these two cases without doubt.

2. In 1888 a feeble, married, childless, menopaused woman, came under my care for cancer of the left breast, which was of a hard, dry, flattened character, involving the pectoral boundary of the axilla. Over the right breast and in the middle of the right popliteal space, each, was a cauliflower cancer, with a stalk of one inch nearly. The nerves were shattered. Great pain was complained of in the right hypochondrium, where the abdominal wall was thickened and hard like a board. There was complete anteversion, vaginal and uterine hyperesthesia, which was removed by iodoform vectores and capsules. The cauliflower excrescences were removed by galvano-caustic and have not returned. The patient was put on the diet approved for cancer. In June, 1889, contrary to my expectations, I introduced one of my stem pessaries, just as I left for the British Medical Association meeting at Leeds. Dr. J. A. Cutter attended her in my absence. She wore her pessary till I returned, five months. It did not kill her, as one medical gentleman said it would, but was worn with relief, a space of four years! Sept. 11, 1893, a correspondent writes of her: "With other friends who have been here, I am surprised to find her so well and cheerful, assisting Addie, (her girl) in light duties, riding and enjoying herself generally. She still wears her instrument and has no trouble with it. Her husband had an ill turn for a week and she cared for him most of the time. *Diet was the great underlying principle of her treatment.* I would not be ashamed anywhere to present this answer to Query 2. A case of chronic rheumatism with ankylosed right knee joint, anteversion and hyperesthesia of the uterus, was entirely cured by diet treatment and my stem pessary. The uterus remained in situ at last accounts, after the pessary was removed.

DISEASES OF THE NERVOUS SYSTEM.

A few years ago, a boy 11 years old, was paralyzed below his waist so that he could not walk, and was deemed incurable. He ate largely of oatmeal, which of itself is a paralyzing food. His oatmeal was stopped. His diet followed the principles here advocated. In a few months the paralysis was gone and he is expected here to-day for you to judge of the reality of his cure.

Another case was a man of 28 who was unable to walk without help on level ground, or to get up stairs without climbing by the banisters. When he recovered so far as to walk alone, his head fell to the right, and had to be supported by his left hand. His right arm hung below the right knee. His nude body showed a genuine torso. The pains in the head and neck and right side were excruciating. The morphology of his blood showed absence of rheumatism. It was deemed a case of locomotor ataxia, from sclerosis of the spine. To confirm this an autopsy is needed, but if doctors must kill their patients in order to make a diagnosis, the future of medicine will be darker than it was forty years ago from the difficulties of medical jurisprudence. Unlike the veterinarians who kill for diagnosis, we must treat cases of sclerosis, and if we do not have verifying autopsies, but cures, it is rather a matter of rejoicing from a clinical standpoint. In about two years and a half treatment, in which no opiates nor anodynes were used, this case walks upright and is working on a farm. It might be said that a physician at the seashore who saw this patient carried there on a litter at the outset, and afterwards locomoting naturally, said to him: "I can not believe you are the same person;" but he could not gainsay the evidence, nor can I.

CONCLUSION.

Such is the partial prediction I have the honor to make, as mainly to be realized in clinical morphology and applied medicine. This is the field which lies before the students of medicine to-day. The progress that has been made is great, but as compared with that which our profession is bound to make in the near future it is slight. Before us lies the great ocean of medical truth, and the long line of our predecessors and our gifted and advancing contemporaries have but gathered a few pebbles upon its shore.

In sincerity, with humility and with courage should the medical student of to-day enter upon his advanced and ever advancing opportunities for usefulness and distinction.

CLINICAL HISTORY OF THE CASE OF PRESIDENT JAMES ABRAM GARFIELD.

BY ROBERT REYBURN, A.M., M.D.

PROFESSOR OF PHYSIOLOGY AND CLINICAL SURGERY MEDICAL DEPARTMENT HOWARD UNIVERSITY, WASHINGTON, D. C., AND ONE OF THE ATTENDING SURGEONS IN THE CASE OF PRESIDENT GARFIELD.

(*Continued from page 417*).

July 7, 2:30 P.M. The President vomited twice this morning, and complains of acidity of the stomach. Powders containing each fifteen grains of bicarbonate of soda were given him, and the surface of his body thoroughly and frequently sponged off. Temperature 101.4; pulse 108; respirations 24.

July 7, 8 to 11:30 P.M. He asked for the hypodermatic injection at 8 P.M., and slept until 11 P.M. He then awoke suffering very much from pain in his ankles. Some solution of bromid of potassium was sent for, but he fell asleep before it could be administered. Temp. 100.2; pulse 106; respirations 23.

July 8, 8:15 A.M. The President slept well during the night, and awoke at 6:30 A.M., in good spirits. Wound dressed antiseptically at 8:15 A.M. A slight slough separating from edges of wound with laudable pus. Very little inflammation around edges of wound. At 8 A.M. he took five grains of bisulphate of quinia. Temperature 99.2; pulse 96; respirations 23.

July 8, 1 P.M. Temperature 101.4; pulse 106; respirations 24.

Bulletin to consulting surgeons, Drs. Agnew and Hamilton:

July 8, 1 P.M.

The President's condition has not changed materially since our last telegram to you yesterday. During yesterday afternoon he was again troubled with acid eructations, and the administration of nutrients was again suspended for a few hours. One quarter of a grain of sulphate of morphia was given hypodermatically at 8:30 P.M., and was followed by tranquil sleep; towards midnight, however, he became restless, and complained a good deal of muscular soreness in his feet and ankle joints, so that we were on the point of administering an additional anodyne, when he fell asleep and on awaking was so free from pain that it was not administered. After 1 A.M. he passed the night tranquilly, sleeping composedly much of the time. He at intervals since that time has taken one ounce of albuminized chicken broth, alternating with an ounce of milk to which a teaspoonful of very excellent rum has been added; all this has been retained as well as five grains of bisulphate of quinia taken this morning at 8 A. M. The yellowish hue of the skin mentioned in our last telegram has sensibly diminished. When the antiseptic dressing was renewed this morning, the wound was found to be discharging a small quantity of healthy looking pus. The reaction accompanying the establishment of suppuration is, as might be expected, marked by a slight rise of temperature and pulse as compared with the same corresponding hours of yesterday; this however, we do not regard as unfavorable under the circumstances, and we should not be surprised if it continued during this afternoon and evening, or even for a day or two. July 8, 8 P.M. Temperature 101.3; pulse 108; respirations 24.

(Signed) D. W. Bliss,
J. J. Woodward,
J. K. Barnes,
Robt. Reyburn.

July 8, 10 P.M. During the afternoon and evening, the milk in one ounce doses was given with one teaspoonful of rum, alternating with albuminized chicken broth, and at 7:30 P.M. his wound was again dressed. He expressed himself as feeling very tired, and a quarter of a grain of sulphate of morphia was given hypodermatically; after this he slept for nearly three hours. The same nourishment was continued during the night, and no nausea or other inconvenience was experienced.

July 9, 3 A.M. Came in and found him complaining of pains in the ankles; found them cold and wrapped them up in warm blankets, giving relief. July 9, 8 A.M. Wound was dressed antiseptically, and a small slough separated from the edges of the wound, with about two drachms of pus. Two ecchymoses showed themselves in the right hypochondrium. He was given at 9 A.M. ten grains of bisulphate of quinia, and the milk in doses of one and a half ounces with a teaspoonful of rum was steadily given during the day. Temperature 99.4; pulse 100; respirations 24. July 9, 1 P.M. Temperature 101.2; pulse 104; respirations 22. July 9, 7:15 P.M. Temperature 101.9; pulse 108; respirations 24. July 9, 8:15 P.M. Received a quarter of a grain of morphia hypodermatically, and went to sleep in a few minutes.

July 10:8 A.M. The President passed the most comfortable night he has experienced since he was wounded, sleeping tranquilly and with few breaks. July 10, 8 A.M. Temperature 100; pulse 106; respirations 23. July 10, 1 P.M. Temperature 100.5; pulse 102; respirations 22. July 10, 7 P.M. Temperature 100.9; pulse 108; respirations 24.

The wound was dressed at 8 A.M. and he expressed himself as feeling easy with a desire for further sleep; after the wound was dressed he fell asleep for nearly an hour and his pulse fell to 100. The milk and rum were continued during the day. His condition was favorable until 5 P.M. when he complained of great weariness and required many changes of position. The wound was dressed at 6:30 P.M. and one-quarter of a grain of morphia was given hypodermatically.

Dispatch to the consulting surgeons, Drs. Agnew and Hamilton:

July 10, 1881.

Such slight changes as have taken place in the President's condition since our telegram of yesterday are of a favorable character. About 7 P.M. his bowels were freely moved; shortly afterwards he received a hypodermatic injection of a quarter of a grain of morphia. He slept more naturally during the night than he has done since he was shot, and this morning is taking his nourishment well and appears on the whole better than hitherto. During the last twenty-four hours he has taken altogether fourteen ounces of milk and one ounce of rum. This morning at 10:30 he again received ten grains of bisulphate of quinia. Both yesterday and the day before, the wound was dressed antiseptically twice in the twenty-four hours. This morning it is discharging less pus than yesterday, but its appearance is healthy. (Signed) D. W. Bliss,
J. K. Barnes,
J. J. Woodward,
Robt. Reyburn.

July 11, 8 A.M. Temperature 99.2; pulse 98; respirations 23. July 11, 1 P.M. Temperature 99.8; pulse 106; respirations 24. July 11, 8 P.M. Temperature 102.8; pulse 108; respirations 24.

The President slept well during the early part of the night. From 2 to 5 A.M. was wakeful, but after that time slept well until 8 A.M. Has taken more nourishment and with relish this morning. The heat of the weather at this time was simply dreadful, and the President suffered greatly from it. An effort

Entered according to Act of Congress, May 29, 1893, by Robert Reyburn, M.D.

was made to cool the air of the room by hanging long strips of muslin over light wooden frames, and keeping them wetted with ice water; this proving ineffective was abandoned. Mr. R. S. Jennings of Baltimore, had in operation to-day an apparatus for cooling the air in the President's room which was very successful. Air was drawn in by an exhaust fan through a subterranean chamber, filled with partitions half an inch apart, covered with Turkish toweling. The toweling was kept saturated from above by the dripping of water holding in solution ice and salt. The apparatus furnished from eighteen to twenty-two thousand cubic feet of air per hour at a temperature of 54 to 56 degrees Fahrenheit. At 11 o'clock this morning the outside temperature was 90 degrees Fahrenheit; at the outlet of the flue from the apparatus below, the temperature was 54 degrees, while at the head of the President's bed twenty feet from the outlet the temperature was 75 degrees. The President complained somewhat of a feeling of oppression in the chest; opening the window, however relieved him. The President was somewhat restless this afternoon, and after 2 P.M. began to be more feverish.

Dispatch to the consulting surgeons, Drs. Agnew and Hamilton:

July 11, 1 P.M., 1881.

During the past twenty-four hours the favorable progress of the President has continued. He has taken and retained twenty-two ounces of milk and one ounce of rum. This morning at 9 A.M. he had a slice of bread softened with milk. At 11:15 A.M. he took fifteen grains of bisulphate of quinia. There has been no irritability of the stomach at any time. Last evening at 7:15 P.M. he received a quarter of a grain of morphia hypodermatically and slept well during the night. The wound was dressed antiseptically yesterday evening and this morning, and continues to discharge a small quantity of healthy pus.

(Signed) D. W. Bliss,
J. J. Woodward,
J. K. Barnes,
Robt. Reyburn.

July 11, 7 P.M. Received his hypodermatic injection of a quarter of a grain of morphia, and went to sleep almost immediately and slept at intervals during the night. His temperature began to fall early in the night, and profuse sweating took place.

July 12 at 4 A.M. his pulse was 94 and his respirations 21 per minute while he was asleep. July 12, 8 A.M. Temperature 99.6; pulse 96; respirations 22. July 12. 1 P.M. Temperature 100; pulse 108; respirations 23. July 12, 7 P.M. Temperature 102.4; pulse 104; respirations 24.

July 12, 8 A.M. The President is feeling comfortable this morning. The rise in temperature noted in last evening's bulletin recurred, but came on an hour later. Wound was dressed antiseptically, very little secretion from wound. A two-inch decalcified drainage tube was tied into the wound. July 12, 1 P.M. The President is passing a comfortable day, and is much less restless than yesterday. Has more strength and power of movement in his limbs.

The following dispatch was sent to the consulting surgeons, Drs. Agnew and Hamilton, to-day:

July 12, 1881.

During the afternoon yesterday the President's temperature rose to the highest point it has yet attained. It began to fall, however, immediately after he received his evening dose of morphia—one grain of the sulphate hypodermatically, and this morning it corresponds with previous days. About 6 P.M. he had a copious and consistent movement from the bowels. His wound was dressed antiseptically yesterday evening and this morning. He continues to retain all the nourishment prescribed him, and has had twenty-four ounces of milk and one ounce of rum during the past twenty-four hours besides a small quantity of milk toast this morning. At 8:30 P.M. he received ten grains of bisulphate of quinia. His general condition this morning appears to us to be rather better than yesterday morning.

(Signed) D. W. Bliss,
J. J. Woodward,
J. K. Barnes,
Robt. Reyburn.

July 12, 7 P.M. The President's wound was dressed antiseptically, the drainage tube was removed, thoroughly cleansed, dipped in carbolized oil (1 to 12) and reinserted. The secretion from the wound was much more abundant than in the morning, and was rather serous in character. At 12 P.M. the President received his usual hypodermatic injection of a quarter of a grain of sulphate of morphia, and slept quietly during the greater part of the night, occasionally awaking. At 5 A.M. (July 13) he took four ounces of milk and one teaspoonful of rum.

July 13, 9 A.M. Temperature 98.5; pulse 90; respirations 20. July 13, 1 P.M. Temperature 100.6; pulse 94; respirations 22. July 13, 7 P.M. Temperature 101.6; pulse 100; respirations 24.

July 13, 8:30 A.M. The President is doing well this morning. His gradual progress towards recovery is manifest and thus far without serious complications. He took ten grains of bisulphate of quinia at 8 A.M. He took four ounces of milk and one teaspoonful of rum every two hours during the day, also a slice of milk toast and a little breast of woodcock. The President had less fever this afternoon than either yesterday or the day before. Wound was dressed at 6:15 P.M. Pus flowing freely from it. At 6:30 P.M. had the usual hypodermatic injection of a quarter of a grain of sulphate of morphia.

Dispatch to the consulting surgeons, Drs. Agnew and Hamilton:

July 13, 1 P.M.

The febrile rise yesterday afternoon was less marked and occurred at a later hour than on the previous day, and to-day for the first time the President's temperature fell to the normal point. The general progress of his symptoms appear more favorable than hitherto. During the last twenty-four hours he has taken thirty-two ounces of milk and one ounce of rum. This morning he had also a slice of milk toast, and chewed the breast of a woodcock, but did not care to swallow the meat. He had last night one-quarter of a grain of sulphate of morphia hypodermatically. In no twenty-four hours during the past week has he received more than a single dose of this quantity, and he slept well during the night. This morning he received ten grains of bisulphate of quinia. (Signed) D. W. Bliss,
J. J. Woodward,
J. K. Barnes,
Robt. Reyburn.

July 14, 7:30 A.M. The President slept quietly during the greater part of the night, but was awake from 1 to 3 A.M. Wound dressed at 7:45 A.M., free suppuration from the wound, and a new drainage tube was inserted. He had ten grains of bisulphate of quinia at 8:15 A.M. Takes his milk and rum every two hours. He ate a slice of milk toast this morning. After his wound was dressed, about 8:30 A.M., he had a profuse sweat and complained of coldness of the extremities. Bottles of hot water were applied and he was wrapped in hot blankets until reaction took place, which occurred in about one hour and a half.

July 14, 8:30 A.M. Temperature 99.8; pulse 90; respirations 22. July 14, 1 P.M. Temperature 98.5; pulse 94; respirations 22. July 14, pulse 94; temperature 98.5; respirations 22. July 14. The President during the greater part of the day was free from fever, but was sweating quite profusely.

Bulletin to the consulting surgeons, Drs. Agnew and Hamilton:

July 14, 1 P. M.

The President has continued to progress favorably during the last twenty-four hours. The febrile rise yesterday afternoon was again less than on the preceding day. He has taken since our last telegram twenty-nine ounces of milk, and an ounce of rum, as heretofore, beside a small slice of milk toast this morning, and at noon a small sandwich of scraped raw beef, with two teaspoonfuls of Valentine beef juice, and an ounce of Tokay wine of 1868. The medication has consisted of a single hypodermatic injection of one-quarter of a grain of morphia, given last night, and ten grains of bisulphate of quinia at 8 A.M. to-day. We administered yesterday at 6 P.M. an enema of soap and water which was promptly followed by a copious movement of normal consistence and color.

(Signed) D. W. BLISS,
J. K. BARNES,
J. J. WOODWARD,
ROBT. REYBURN.

The febrile rise this afternoon was less pronounced, and did not cause so much discomfort as yesterday. At 8:15 P.M. three-sixteenths of a grain of sulphate of morphia was given him. He went to sleep very soon and slept profoundly the greater part of the night.

July 15, 8:30 A.M. Temperature 98.5; pulse 90; respirations 18. July 15, 1 P.M. Temperature 98.5; pulse 94; respirations 18. July 15, 7 P.M. Temperature 100.4; pulse 98; respirations 20. This morning the President partook of some juice of rare roast beef on toast, and Valentine meat juice with a glass of Tokay wine. His wound was dressed at 8 A.M. and was suppurating freely; the drainage tube was reinserted.

July 15, 9:30 A.M. three grains of bisulphate of quinia was given, and this dose was repeated at 4 P.M. and at 8 P.M. At 12 M. he received fifteen drops of aromatic sulphuric acid and also at 5 P.M. During the day the President took more solid food. He complains of pains in his feet, but does not sweat as much as yesterday.

The following report was sent to the consulting surgeons, Drs. Agnew and Hamilton:

July 15.

The President continues to do well. The afternoon fever is daily less marked. A smaller quantity of milk has been given, and solid food substituted and relished. He has had less rum, and at intervals of several hours has taken some Tokay wine, in all about two ounces and a half of the latter. Last night his hypodermatic injection consisted of three-sixteenths of a grain of morphia which proved sufficient to secure rest. This morning we have altered the dose of quinia to be taken three times a day.

(Signed) D. W. BLISS,
J. K. BARNES,
J. J. WOODWARD,
ROBT. REYBURN.

July 15, 7 P.M. The President has continued to do well during the day. The afternoon fever has been slighter than on any other day since the 3rd of July. At 8:15 P.M. he had a hypodermatic injection of one-eighth of a grain of sulphate of morphia. He slept well during the night and awoke in the morning much refreshed.

July 16, 8:30 A.M. The President has passed another good night, and seems to steadily progress towards convalescence. July 16, 8:30 A.M. Temperature 98.4; pulse 94; respirations 18. No bulletin issued at 1 P.M. July 16, 7 P.M. Temperature 100.2; pulse 98; respirations 19.

Bulletin to the consulting surgeons, Dr. Agnew and Hamilton:

JULY 16, 7 P.M.

The President progresses steadily towards convalescence. During the last twenty-four hours he has had but one-eighth of a grain of sulphate of morphia, in a single hypodermic injection at bedtime. He slept well and this morning expresses himself as feeling quite easy. The quinia is continued in three grain doses three times a day. He is taking a still larger proportion of solid food, and with more relish than hitherto. Some old port wine has been substituted for the Tokay, its flavor being preferred by the patient. The febrile rise yesterday was less than on any day since you saw him. Hereafter our daily dispatch to you will be sent after the evening consultation.

(Signed) D. W. BLISS,
J. K. BARNES,
J. J. WOODWARD,
ROBT. REYBURN.

July 16, 7 P.M. The President has passed a better day than any since he was hurt. At 6:30 P.M. he received one-eighth of a grain of sulphate of morphia hypodermatically, and slept excellently during the night. July 17, 8:30 A.M. Temperature 98.4; pulse 96; respirations 18. July 17, 1 P.M. Temperature 98.5; pulse 90; respirations 18. July 17, 7 P.M. Temperature 100.2; pulse 98; respirations 20. July 17, 8:30 A.M. The President continues to improve; he passed an excellent night, and has a good appetite this morning. He took oatmeal and milk, lamb chops and bacon for breakfast.

Dispatch to the consulting surgeons, Drs. Agnew and Hamilton:

JULY 17, 7 P.M.

Since our dispatch of yesterday the President has done as our hopes then indicated. He has had a single hypodermatic injection of one-eighth of a grain of sulphate of morphia at bedtime, and slept well. Quinia in three grain doses has been continued, as well as the plan of nourishment hitherto reported. His bowels have been kept free by enemata. The wound is dressed with antiseptic precautions twice daily; there is now a free discharge of healthy pus. The afternoon fever both yesterday and to-day has been comparatively slight.

(Signed) D. W. BLISS,
J. K. BARNES,
J. J. WOODWARD,
ROBT. REYBURN.

July 17, 7 P.M. Our expectations of favorable progress have been fully realized by the manner in which the President has passed the day. He has taken more solid food and with greater relish than hitherto. His afternoon fever which is as slight as that of yesterday came on later. He received his hypodermatic injection of one-eighth of a grain of sulphate of morphia at 8:15 P.M. and went almost immediately to sleep. He slept well until between 4 and 5 A.M. of July 18.

July 18, 7 A.M. The President had a profuse perspiration this morning after 5 A.M., and felt quite tired after his wound was dressed. He ate some steak, and a poached egg, with potatoes and toast this morning. He had a nap from 10 to 11 A.M., and awoke quite refreshed.

July 18, 8:30 A.M. Temperature 98.4; pulse 88; respirations 18. July 18, 1 P.M. Temperature 98.5; pulse 98; respirations 18. July 18, 7 P.M. Temperature 100.7; pulse 102; respirations 21. July 18, 5 P.M. The President has suffered from nausea to-day, and nourishment was suspended. The wound was dressed at 6 P.M. and pus came freely from it. July 18, 7 P.M. The President had more fever this afternoon.

Bulletin to the consulting surgeons, Drs. Agnew and Hamilton:

JULY 18, 7 P.M.

Shortly after our dispatch of yesterday the President received a hypodermatic injection of one-eighth of a grain of sulphate of morphia. He slept well during the night, and this morning had a temperature of 98.4; pulse 88; respira-

tions 18. His day, however, was not quite so comfortable as yesterday. A slight gastric disturbance was noted towards noon, in consequence of which the quantity of nourishment administered was temporarily diminished. This was followed by rather more fever than yesterday, but the difference was not great, and is thought to be merely a temporary fluctuation.

(Signed) D. W. Bliss,
J. K. Barnes,
J. J. Woodward,
Robt. Reyburn.

July 18, 7 P.M. He received one-eighth of a grain of sulphate of morphia hypodermatically, and went to sleep soon afterwards.

July 19, 8 A.M. The President is sleeping soundly and quietly. He is sweating, though not profusely. This morning he took beef juice and milk with rum and one slice of milk toast. As he did not seem to relish solid food it was deemed best to give him chiefly liquids and in diminished quantities. During the morning he seemed quite bright and cheerful, and had very little fever.

July 19, 8:30 A.M. Temperature 98.5; pulse 90; respirations 18. July 19, 1 P.M. Temperature 98.5; pulse 92; respirations 18. July 19, 7 P.M. Temperature 99.8; pulse 96; respirations 19.

Bulletin to the consulting surgeons, Drs. Agnew and Hamilton:

July 19, 7 P.M.

Last evening the President received a hypodermatic injection of one-eighth of a grain of sulphate of morphia, and slept well during the night. He continues to take sulphate of quinia in three grain doses thrice daily, and has enemata when required. As anticipated the increased fever of yesterday proved only temporary, and he has had a better day to-day than on any day since he was injured. The wound looks well, and is discharging healthy pus freely.

(Signed) D. W. Bliss,
J. K. Barnes,
J. J. Woodward,
Robt. Reyburn.

July 19, 8 P.M. He received his hypodermatic injection of one-eighth of a grain of sulphate of morphia, and slept well during the night. July 20, 8 A.M. The President's wound was dressed, and it showed evidences of granulations.

July 20, 8:30 A.M. Temperature 98.4; pulse 86; respirations 18. July 20, 1 P.M. Temperature 98.4; pulse 88; respirations 18. July 20, 7 P.M. Temperature 99.6; pulse 98; respirations 19.

July 20, 8:30 A.M. The President took some milk toast and codfish for breakfast this morning. During the day took some milk and rum alternately with Valentine beef juice every two hours. He has also had three three grain doses of bisulphate of quinia, and three doses of fifteen drops each of aromatic sulphuric acid. He passed a comfortable day and was quite cheerful, and had scarcely any evidence of fever until about 4 P.M. July 20, 6 P.M. The President's wound was dressed and quite a free discharge of pus came from it.

Bulletin to the consulting surgeons, Drs. Agnew and Hamilton:

July 20, 7 P.M.

During the past twenty-four hours the President's progress has been uniform and satisfactory. He had a good night, and has expressed himself throughout the day as feeling quite comfortable. The indications reported in our last telegram have continued without change.

(Signed) D. W. Bliss,
J. K. Barnes,
J. J. Woodward,
Robt. Reyburn.

At 8 P.M. he received his hypodermatic injection of one-eighth of a grain of sulphate of morphia, went to sleep at 9 P.M. and slept well during the night. At 8 P.M. he also received three grains of bisulphate of quinia and fifteen drops of aromatic sulphuric acid.

July 21. At 8:20 and 2:40 A. M. he took some milk and rum and afterwards Valentine beef juice. The President had a good night, and expressed himself as feeling excellently this morning. He took stewed chicken and toast for breakfast. July 21, 8:20 A.M. Temperature 98.4; pulse 88; respirations 18.

July 21, 1 P.M. Temperature 98.4; pulse 92; respirations 19. July 21, 7 P.M. Temperature 99.9; pulse 96; respirations 19. July 21. At 10 A.M. he took three grains of bisulphate of quinia and fifteen drops of aromatic sulphuric acid. During the afternoon he seemed quite tired, though he took a fair amount of liquid food. At 6 P.M. his wound was dressed and a small portion of the shirt was discharged from it when it was dressed this morning.

Bulletin to the consulting surgeons, Drs. Agnew and Hamilton:

July 21, 7 P.M.

Since our telegram of yesterday the President has continued to do well. He passed a comfortable night. This morning a morsel of clothing, about one-quarter of an inch square, came away spontaneously with the pus from the deeper parts of the wound. It proved on examination to consist of cotton fibers with a few woolen fibers adhering. Medication continued without change.

(Signed) D. W. Bliss,
J. K. Barnes,
J. J. Woodward,
Robt. Reyburn.

July 21, 8 P. M. One-eighth of a grain of sulphate of morphia was given hypodermatically. The President slept well, and took nourishment twice during the night.

July 22, 8 A.M. The President's wound was dressed and a large quantity of pus flowed from the wound, with a small scale of bone and some fragments of clothing and a small slough. July 22, 8:30 A.M. Temperature 98.4; pulse 88; respirations 17. July 22, 1 P.M. Temperature 98.4; pulse 98; respirations 18. July 22, 7 P.M. Temperature 100.2; pulse 98; respirations 19.

July 22, 8:30 A.M. The President rested well, and took for breakfast milk toast with a little dried beef. During the day he took buttermilk alternately with milk and beef juice.

July 22. During the early part of the day the President seemed as well as usual; but became quite restless and tired towards evening. At 5:30 P.M. he had an enema, and at 6 P.M. the wound was dressed as usual. A free discharge of pus came from the wound, but not so abundantly as in the morning. During the day he took three doses of three grains each of bisulphate of quinia with two doses of elixir of gentian and tincture of chlorid of iron, each consisting of two drachms. He received one-eighth of a grain of morphia hypodermatically at 7:15 P.M. and soon went to sleep.

Bulletin to the consulting surgeons, Drs. Agnew and Hamilton:

July 22, 7 P.M.

The President rested well last night, and has been easy during the day. At the morning dressing the wound, which is looking very well, discharged several ounces of healthy pus. A little solid fragment that floated out with the discharge proved to be a thin scale of bone about one-eighth of an inch in length, with a morsel of sloughing fibrous tissue and a number of adhering fibers of cotton and wool. He continues to take and digest a reasonable quantity of nourishment. The evening hypodermatic injection of sul-

phate of morphia (one-eighth of a grain) and the quinia (three grains thrice daily) have also been continued.

(Signed) D. W. Bliss,
J. K. Barnes,
J. J. Woodward,
Robt. Reyburn.

July 22, 8:30 P.M. He complained of feeling chilly; this was followed by a febrile rise of temperature which lasted until 10 P.M. (Temperature 101.) During the night he was restless and did not sleep well.

July 23, 7 A.M. The President fell asleep towards morning, and the dressing of the wound was delayed until he awoke. July 23, 7 A.M. Temperature 98.4; pulse 92; respirations 19. July 23, 10 A.M. Temperature 101; pulse 110; respirations 24. July 23, 12 M. Temperature 104; pulse 125; respirations 26. July 23, 7 P.M. Temperature 101.7; pulse 118; respirations 25.

July 23, 10 A.M. The President was more restless last night, but this morning at 7 A.M., while preparations were being made to dress his wound his temperature was found to be normal. At 7:30 A.M. he had a slight rigor, in consequence of which the dressing of his wound was postponed. Reaction followed promptly, and the dressing has just now been completed. July 23, 12 M. He is feverish and quite restless, and has vomited three times this morning a fluid tinged with bile. At the noon consultation to-day on account of the unfavorable change that has taken place in the symptoms presented by the President, it was deemed best to telegraph for the consulting surgeons. This was done accordingly, and Drs. Agnew and Hamilton arrived at 8:15 P.M.

July 23, 2 P.M. He has just fallen asleep. He slept until 3:45 P.M. 4:40 P.M. Again asleep and slept until 5:45 P.M. 6 P.M. He took three ounces of milk and one teaspoonful of rum. At about 12:45 P.M. the President began to perspire and his temperature began to fall gradually, until at 7 P.M. it had fallen to 101.7. There has been a free discharge of pus from the wound during the day.

At 11:30 P.M. President Garfield had another rigor (the fifth he has had since 7:30 P.M. of July 22) and afterwards sweat profusely during the night.

(To be continued.)

A JURY OF TWELVE MEDICAL MEN.

BY EPHRAIM CUTTER, M.D.
NEW YORK.

In the March 17, 1894, number of this Journal, John A. Sterling, Esq., ably treats "The Medical Expert Witness," On page 378, column 2, line 46, he writes: "If it were possible to have a jury of twelve medical men in all cases where medical evidence is required, then the medical expert would be unnecessary." I think not, but that he would be needed more than under our present American system of medical jurisprudence, which for more than a generation has been an *opprobrium medicoram.* This opprobrium can not be changed because the bar does not want it. Well do I remember the efforts made some thirty years ago to change this system, which were led by my late honored and honorable teacher, Prof. R. E. Rogers of the University of Pennsylvania. Probably there never was a more eloquent lecturer in a medical college. He made the dry subject of chemistry so juicy and oratorically palatable that his lectures were always crowded, and teachers of elocution brought their pupils to study his deliveries as models of excellence. I well remember his Demosthenic plea before the American Medical Association. Yet his work was fruitless, not because it did not have all the elements of truth, active and professional disgrace (to quell); but because of the apathy of the profession itself. Prof. Rogers' words have had a potential power with me, and when I read the above quotation, it seemed to me that through it the dead eloquence of the talented and courteous Rogers might live to do good, and hence I write.

Why not have, in medical cases, a jury of medical men? There is no law against it, is there? Then it would need no extra legislation to have such a jury. Such a course would elevate America to the sensible plane of French and German medical jurisprudence.

As Prof. Rogers said, it is a disgrace to the medical profession to go into court and have different members swear to opposite facts in the same person. For example, to have six to eight medical men swear that a man had post-paralytic dementia, to be followed by homicidal mania, and then to have a set of the best alienists in America to swear that this was not so!

This question might well be discussed at San Francisco next June. *Why is it not possible, in cases requiring medical evidence, to have a jury of twelve medical men?*

FRAUDULENT MEDICAL INSTITUTIONS.

[Compiled for the Journal of the American Medical Association.]

Of the twenty-one more or less active diploma "mills" still in existence in the United States, as described in the Report on Medical Education, by the Illinois State Board of Health, the following are among the most noteworthy:

"*Chicago Correspondence University,*" Chicago, Ill. Incorporated in 1885; re-incorporated in 1887. "*National University of Illinois,*" Chicago, Ill. Incorporated July 25, 1889. These two institutions, incorporated by the same person have had no existence as teaching bodies for purposes of medical instruction, but are operated solely for the sale of their so-called "diplomas." A "diploma" of this "National University," signed "F. W. Harkins, Præses," and issued to Thomas J. Redmond, "*datum pridie Januarias, Anno Domini,* MDCCCLXXXIV," was offered for record by the said Redmond in Logan County, Idaho, May 14, 1891. The discrepancy between the date of incorporation, 1889, and the date of the "diploma," 1884, has not been explained.

In September, 1892, the secretary of the "University," one Rudolph A. Van Angelbeck, "Lit. D. F. N. U.," wrote from Pella, Iowa, offering the degree of M.D. to a graduate of the Chicago Ophthalmic College. The following is an extract from Van Angelbeck's second letter: "In case you are afraid your diplomas do not entitle you to the M.D. degree, apply at once for a Fellowship, remitting $30 for same. Our Fellowships entitle holders to *any* degree." Van Angelbeck was arrested and indicted in March, 1893, for misusing the United States mails in carrying on his sale of the degrees of the "National University."

In November, 1892, the Hon. John W. Foster, Secretary of State, forwarded the complaint of the Department of Justice of the city of Amsterdam, Netherlands, showing that "this 'National University of Illinois' at Chicago has been selling medical

diplomas to foreigners who have not taken its courses." One "PROF. BLACKBURN, M.A., D.Sc., LL.D.," was the agent for sale in London, England, —"price two guineas."

During 1893 it transpired that these "diplomas" were being peddled under representations leading to the belief that they were from the new University of Chicago. DR. GOODSPEED, Secretary of the Chicago University, has no doubt that the University is being injured by HARKINS and his "diploma mills" and "would like to see the matter thoroughly exposed everywhere, particularly in England and Canada."

"*Malok's Brood.*"—During the past three years one JOHANN MALOK of Chicago, has profited by the wide-open incorporation laws of Illinois to the extent of securing charters for a brood of fraudulent diploma-selling institutions ostensibly formed,—according to the language of their articles of incorporation—"To instruct students in medicine and surgery and to give diplomas to graduates;" "to educate pupils in medical science, to graduate them and to issue degrees of M.D., and honorary degrees of M.D., and to issue diplomas as graduates of obstetrics for accoucheurs and midwives;" "to educate people in all branches pertaining to medical science and obstetrics, dentistry, hydrotherapeutics, magnetism, hypnotism and in everything that is for the benefit of the human body; and to graduate in the same and to issue diplomas and all kinds of degrees and honorary degrees for the same in present or absent." This last quotation is the "enlarged object of the German Medical College," chartered by the State of Illinois, Dec. 28, 1891, certificate of "enlargement" filed by the Secretary of State, July 14, 1892.

The first formed of the Malok brood was the "German College of Medicine and Obstetrics," charter granted Feb. 19, 1891. Then the "German Homeopathic Medical College," charter granted Dec. 8, 1891. Then the "German Medical College," charter granted Dec. 28, 1891; and the "German-American Homeopathic Medical College," the "German College of Gynecology, Pædology and Obstetrics," the "German Academy of Physiatric Physicians," etc. These institutions have been repeatedly and publicly denounced as fraudulent by the Illinois State Board of Health and their so-called "diplomas" refused recognition. Nevertheless they are legally incorporated under the laws of the State of Illinois.

Evidence of the sale of the Malok "diplomas" in Germany and elsewhere is being accumulated with the view of securing a repeal of these charters.

"*Indiana College of Medicine and Midwifery,*" Indianapolis, Ind. Chartered in 1878 by one CHARLES P. HEIL, who, at the time the Illinois Medical Practice Act went into effect, was at the head of the "Northwestern College of Midwifery," in Chicago. His "college" was refused recognition and he, himself, was denied a certificate by the State Board of Health. Being thus compelled to leave Illinois he removed to Indianapolis, where he started his "Indiana College of Medicine and Midwifery," attention to which was first called by PROF. AUSTIN FLINT of the Bellevue, in a letter to the Secretary of the Illinois Board, April 9, 1890.

DR. FLINT inclosed a diploma of HEIL's institution, issued March 12, 1890, and conferring the "degree of Doctor of Medicine and Midwifery" upon one ALEXANDER KUNTSLICH, by whom the diploma was presented to DR. FLINT for registration under the laws of the State of New York. Certificates of the institution were presented to the Illinois Board by midwife graduates, but were refused recognition and HEIL's subsequent career may be found under the title, "Ohio College of Obstetrics, Medicine and Midwifery"—*q. v. infra.*

HEIL also announced his Indianapolis institution as the "Department of Obstetrics, Indiana Eclectic Medical College," a college not recognized by the Illinois State Board of Health.

"*Ohio College of Obstetrics, Medicine and Midwifery,*" Cincinnati, Ohio. This institution was originally located at Indianapolis, Ind., see "Indiana College of Medicine and Midwifery," *supra.* In 1889 HEIL, the projector, obtained a charter under the laws of the State of Ohio and began operations in the city of Cincinnati. In 1891 he was reported in the *Medical and Surgical Register* of the United States as living in Covington, Ky., Dean of the Faculty of the Ohio College of Obstetrics, Medicine and Midwifery, Cincinnati, Ohio." The so-called "College" never had a local habitation or existence—a name only, under which to issue diplomas.

After leaving Illinois, HEIL was "graduated" upon one term of lectures by the Eclectic Medical College of Indiana, an institution not recognized by the Illinois State Board of Health. He appears in the current *Medical and Surgical Register* of the United States in capital letters as:

"HEIL, CHARLES P., A.M, Ph.D. (Ecl), Ind. Ecl. Med. Coll., Indianapolis, Ind., 1883; Late Prof. of Obstetrics in Ind. Ecl. Med. Coll.; Surg-Steward in the U. S. Navy and Hospital Steward U. S. Army Late War; Mem. of National and Ind. State Ecl. Med. Assn's; Examining Surg., The Brotherhood of Railroad Trainmen; Late Dean of the Ind. Coll. of Med. and Midwifery, Indianapolis, 1696 3d av. New York, N. Y."

"*Vermont Medical College—the Second Medical College of the American Health Society,*" Rutland, Vt. This institution has no existence in Rutland, Vt., except on Commencement day, when one GEORGE DUTTON of Boston, Mass., who comprises the "Dean and Faculty" of the concern, takes his "graduating class" from Boston to Rutland and there holds "graduating exercises" and issues his diplomas.

DUTTON first attempted to organize what he styled the "First Medical College of the American Health Society" in Boston; but the Massachusetts Act of 1883, forbidding corporations created under the general incorporation laws from conferring degrees in medicine, secured through the exposure by the Illinois State Board of Health of certain bogus "diploma mills" in Boston, frustrated this attempt. He then incorporated this "Second Medical College" at Rutland in 1883, under a Vermont act authorizing the creation of corporations to establish and maintain literary and scientific institutions.

Although his "diplomas" are issued in Vermont, they do not entitle their possessors to practice in that State, the Supreme Court having decided, in the case of one of DUTTON's "graduates" against the State Board of Censors, that such institutions are not empowered to confer degrees or issue diplomas. DUTTON gives "instruction" in Boston, and has issued some forty-five or fifty Vermont "diplomas" on which persons are practicing medicine in States which recognize "diplomas or licenses from legally chartered medical institutions."

Blank Applications for membership in the ASSOCIATION at the JOURNAL office.

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

The Third Annual Meeting Held in Chicago, Sept. 12, 13 and 14, 1893.

Augustin H. Goelet, M.D., President.

(*Continued from page 430*).

The following paper by Henry W. McClure, M.D., of Cromer, England, was read by title:

AN UNCONSIDERED AND IMPORTANT FACTOR IN THE EXPLANATION OF THE ACTION OF ELECTRICITY IN UTERINE DISEASE.

I might have given my paper another title possibly more appropriate, and that title would have been "A Plea for more Consideration for the Dielectric Tissues of the Human Body," yet in order to put the matter in a more concrete form, I have chosen to take the uterus to illustrate my thesis. My contention is shortly as follows: That the tissues of the human body are no exception to the general law that all opaque bodies are necessarily conductors and all transparent bodies insulators or dielectrics, more or less perfect; and that such a dielectric tissue as the serous coat of the uterus possesses the vital property of retraction, and such retraction may be quite independent of muscular contraction. This retraction is evidenced by a diminution of the superficies of the membrane; in other words, the serous coat shrinks, and that a portion of the current of electricity gets entangled in such a membrane in passing, but the force or energy is not lost. The kinetic electrode is merely made static, the shearing stress of the current has altered the condition of the molecules, inducing a strain in the dielectric, and I believe that this strain of molecular tension is analogous to, and identical with vital retraction or shrinkage.

Such a contention thus briefly stated I venture, not without extreme diffidence to bring before this important scientific Association, in the hope that it may lead to some discussion.

With your permission I will now bring what evidence I am able, in support of my thesis.

Professor Stephenson of Aberdeen, has devoted a great deal of time and labor to this subject of uterine retraction. Quoting the late Mathews Duncan he says: "It is certain that contraction does not necessarily imply retraction; that retraction is not dependent on contraction is difficult to prove, and that the only true safeguard against postpartum hemorrhage is this retraction of the uterine tissues." Professor Stephenson goes on to say that there is a way out of the difficulty; that is to exclude for the time being all muscular fiber out of the problem. The serous coat of the uterus manifests this phenomenon of retraction in a marked degree; that it possesses the property of shrinking in a perfect manner, and to produce the shrinking there must be definite tension of the membrane. It is the sole cause of the permanent shortening of the fiber, for after contraction alone (retraction being absent) we must always admit relaxation and the capability of the fibers to resume their original length; it is not an expulsive force.

From the revelations of frozen sections of the parturient uterus, it is evident that under retraction alone the uterine walls gather themselves around and are molded to the uterine contents, be they child, placenta or clot. To this molecular tension or retraction is due the permanent diminution in the superficies of the uterine walls.

Whatever electricity is, we must be convinced that it obeys the laws and acts as an incompressible fluid would act; that in passing through a conductor it meets with a certain amount of resistance or friction-like obstruction, but there is no tendency to reverse discharge or spring back. In an insulator, the electricity becomes entangled and this reverse discharge or spring back force is observed; in other words, the kinetic electricity has assumed the static form, electrical potential is stored up—a strain of the molecules has been produced; it is as if a bow were bent, the dielectric is able to give back again the same energy that was given to it by a reverse discharge—just as the arrow is propelled from the bow.

This condition of strain has been conclusively proved by examining by means of polarized light the glass in a charged Leyden jar.

Now, by the laws of electrical radiation, we find that the transparent tissues of the human body must necessarily be insulators or dielectrics, and that they are subject to the laws governing inorganic dielectrics; that is to this condition of strain, and that this condition theoretically in an animal membrane traversed by a current of electricity would cause tension in the lines of electrical propagation and pressure at right angles to this; in other words, it corresponds to shrinkage or the vital property of retraction, as demonstrated by Professor Stephenson in the serous coat of the uterus. No one doubts the power of the current, at least, at make and break, of exciting muscular contraction, a vital phenomenon. I do not see why we should deny it the power of exciting retraction, a function so closely allied yet seemingly independent. I use the word, seemingly, advisedly, as it may be that the non-conducting elements of muscular tissue may play a part of some importance in contraction.

We know that the skin offers an enormous resistance to the passage of the current, and if it were not for the many passages through it, the application of electricity to the human body would be almost impossible. According to Erb, muscle is the best conducting element in the body, and he would attribute the conducting power of the tissues to depend upon the blood and interstitial fluids. But he calls attention to the fact that nerve and muscle offer a much greater resistance to currents traversing them transversely than longitudinally; five to 1 in nerve, 9 to 1 in muscle. Imbibition of saline liquids does not, therefore, determine resistance altogether. I consider this has an important bearing on the subject under discussion, and to my mind the only solution to the problem is that the transparent elements of nerve and muscle are in the way of the current; so much electricity apparently disappears it is used up in producing strain of the medium. In the longitudinal direction there is nothing in the way; the electricity flows in the fluids between and outside the fibers. We find that a constant galvanic current during its flow does not excite muscular contraction.

We might here shortly review our knowledge of the action of electricity on a uterine fibroid. That interpolar electrolysis can have very little influence I think must be admitted, save in that it is the means of conveying the electricity. But the products of electrolysis, the acids and oxygen at the positive electrode, the hydrogen and bases at the negative electrode have an evident and important action. This is the galvano-chemic cauterization on which Apostoli places so much reliance. By his large clay electrode he nullifies this action upon the skin; the active pole or electrode being intra-uterine which may be the positive, acid, hemostatic, or the negative—where caustic alkalies are liberated. "The tangible effect at the points of entrance and exit of the current which according to the dose and duration will be chemic cauterization, more or less severe, variable in conformity with the pole and different in its character at the two poles."

Apostoli speaks also of the interpolar action of the current as setting up a process of disintegration proportionately wide and lasting, of the morbid products through which it is made to pass. So we have a chemic caustic action at the poles; of this there is no doubt, and according to Apostoli the result of this intra-uterine cauterization is production of contractile cicatrices which he believes to be the efficient cause in arresting hemorrhage.

Now what occurs between the poles? This is the important question.

We have the cataphoric action of the current by means of which fluids can be moved from one electrode to the other in the direction of the current. Quinin and iodid of potassium have been introduced into the body in this way, and their presence detected in the urine.

Erb confesses that we know practically nothing of the electrolytic and cataphoric action of electricity on the body, and with regard to the so-called catalytic influences of which we have to speak so often, he says we must confess they are purely hypothetic and that this expression is merely a collective name including several effects, of the individual nature of which we are still ignorant. Who can affirm that there are not other influences exerted by the current upon the human body, such as alterations in the molecular nutrition; in the production of heat; in the elementary affinity; in the osmotic phenomena on which the chief therapeutic phenomena depend. Among these, I would ask not an unimportant place for this theory of dielectric strain, which is manifested to a greater or less extent by all the transparent tissues of the body. We must all admit that when an electric current encounters a dielectric some of this electrical energy seems to disappear, but it is not lost we know; that whenever energy disappears in one form it reappears without loss in another. That is, the electrical energy that has seemingly disappeared has reappeared as molecular strain.

If, as Professor Stephenson has shown, the peritoneal coat of the uterus possesses this power of shrinking and so reducing the volume of the uterus, it is quite easy to conceive it so acting on a tumor situated in the uterine wall, under the stimulating action of a galvanic current and, be it remembered, a galvanic current of high Intensity.

That a uterine tumor can be influenced by an electric current through the abdominal wall and made to shrink has been shown by a former President of this Association—Dr. Massey. I have had personal experience of the influence of the constant current in arresting hemorrhage in uterine fibroids where the electrodes were exterior to the uterus. Such experiences surely would lead one to look for another factor beyond the galvano-cautery, and I would ask at least your consideration of the problem of *dielectric strain*. To my mind, also, it plays a part of great importance in the action of static electricity on the human body; as I fail to see, if the body is a conductor, how the slightest influence could be exercised on tissues lying beneath the skin, but if we admit this dielectric tension and *lines of slip;* then all becomes plain and corresponds with our experience, as it has been most ably shown by Dr. Morton and the former President of this Society, that static electricity has a penetrating power equal if not superior to current electricity.

A. Lapthorn Smith, M.D., M.R.C.S., Eng. Fellow of the American Gynecological Society; Gynecologist to the Montreal Dispensary; Surgeon to the Women's Hospital, read a paper on

THE TREATMENT OF DYSMENORRHEA BY THE GALVANIC CURRENT.

In a paper read by Dr. Apostoli at the International Congress at Berlin, in 1890, occurred these words: "Open all the classical text-books and you will see that uterine atresia is a common cause of dysmenorrhea. I, myself, shared this opinion until facts, themselves, proved to me the contrary. Seeing in fact, one by one, patients whom I had treated since 1882 and who consequently followed intra-uterine treatment, which has necessitated the free introduction of the sound, I was struck with the great number of semi-atresias which I found. Seeing that the same sound could no longer enter, I was still more surprised with the reply which these patients always made, who had been nearly all suffering from dysmenorrhea before my treatment, and who had since then found themselves free from these symptoms, and remaining so notwithstanding the narrowing of the canal. These facts have led me to believe, contrary to the general opinion, that dysmenorrhea is most often an ovarian symptom. The intra-uterine galvano-cauterization which I employed has, therefor, in its favor the distinct advantage in the greater or less atresia which it eventually provokes without interfering in any way with the evolution of the periods—atresia which remains a posthumous witness to the cure of certain cases of endometritis, and which I consider as a vigilant sentinel which prevents a return of hemorrhage. But you will say, Then what about pregnancy? Yes, at the beginning of my practice I believed theoretically that pregnancy would be impossible, but theory has had to give way before facts, and to-day I can furnish thirty cases among my patients who have undergone intra-uterine galvano cauterization, even positive ones, and who without any difficulty became pregnant and went to full term."

Now my own experience has fully borne out on this point as it has on every other particular, the wise sayings of my distinguished friend. In nearly every case of fibroid treated by Apostoli's method in which the hemorrhage was diminished, the dysmenorrhea was cured at the same time. In one of the cases which I reported a year ago in the *American Journal of Obstetrics* sent to me by Dr. Jeanotte of Montreal, there was a large fibroid with very little hemorrhage, but with such severe dysmenorrhea that the patient had for eight years before coming under my care been obliged to go to bed for more than a week out of every month, and to have at least two hypodermics of morphin a day during the whole of her menstrual periods. This patient was completely cured and has remained cured now for more than four years.

At first I thought, as Apostoli did, that dysmenorrhea was due to stenosis of the internal os, and I therefore employed the negative pole for the cure of dysmenorrhea with the intention of thereby dilating the canal. But in looking over my cases in the light of the above words of Apostoli, I perceived that the pain had been equally well relieved in those cases in which the positive pole had been employed and with such high doses that stenosis was the result as were those cases which had been treated by moderate doses with the negative pole. This has led me to believe that they are right who maintain that dysmenorrhea is rather due to endometritis than to stenosis of the canal. This view is still further borne out by the fact which has been observed by many others that rapid dilatation alone is not always followed by cure, while it sometimes requires repeating many times. I have also observed that the result of rapid dilatation was much more successful when it was accompanied by curetting and the application of iodized phenol to the endometrium followed by drainage with gauze; measures which are precisely among the most modern and most effective for the cure of endometritis. Then again, in making use of the sound we generally find that its passage over the internal os causes acute pain which after a few applications of the galvanic current invariably disappears. It now seems clear that this is due to the inflamed condition of the uterine mucosa, for in a healthy uterus the passage of the sound even with considerable pressure causes very little or no pain.

As I said in my paper above referred to, I quoted the report of a thousand cases of dysmenorrhea, in over nine hundred of which there was undoubted endometritis. My own experience, although much more limited fully bears out the correctness of this statement. In nearly all of my cases which required examination I have found the uterus sensitive to the touch; there was backache, very often trouble with the bladder and rectum, a uterine leucorrhea diagnosed by means of the dry tampon of sublimated cotton left for twenty-four hours against the os, and in a great many there were reflex disturbances through the great sympathetic of such distant organs as the stomach, heart and eyes. On passing the sound I have invariably found that as soon as its extremity reached the level of the internal os, severe pain was caused which these patients stated was exactly similar to that which they suffered every month. On the other hand, I have seen so many cases of acute anteflexion without endometritis in which there was no dysmenorrhea that the opinion has been gradually growing in my mind that it is only when the above mentioned conditions are associated with endometritis that they cause dysmenorrhea. Moreover, my experience in the matter of treatment has been that in the majority of cases the most satisfactory results have followed the use of such measures as have been found to be most effective in curing endometritis, such as curing habitual constipation, removing other obstructions to the pelvic circulation, improving the circulation generally, improving the circulation in the pelvis by very hot douches and boro-glycerid tampons, rapid dilatation, curetting with and without the intra-uterine tampon, and with or without an intra-uterine stem and the application of the galvanic current.

With another year's experience, I can say the same thing even more positively. Since then we have constantly seen reports of cases of failure to cure dysmenorrhea by rapid dilatation alone. Even Winckel says that he had treated patients of his own, and had under his care patients of his colleagues who had been treated by rapid dilatation and even cutting of the cervical canal without avail.

Of the nine cases I reported a year ago I have seen or heard from seven who have all remained free from menstrual pain, and as far as I know so are the remaining two; and yet two of these cases have been treated by very thorough rapid dilatation. Since then I am sorry to say I have had other failures to cure by means of rapid dilatation alone. Two of these were followed by pelvic peritonitis in spite of the most rigorous antiseptic precautions, and probably owing to latent disease of the tubes, while the many cases which have been successful have at the same time been treated for endometritis by curetting and drainage. So that I am more than ever convinced that menstrual pain of uterine cause is, in the majority of cases, due to inflammation of the uterine mucosa, and can best be treated by the intra-uterine application of the galvanic current. The treatment, as I have already said, is almost painless, absolutely devoid of danger, only mild currents being employed and does not require the patient to lay up, or even to stop her usual work. She has only to come to the office twice a week for from three to six weeks, when as a rule her second period following the beginning of treatment will come on without pain so that in several of the cases I reported, the flow appeared while they were out walking and without their having made any preparations for it. In my paper above referred to, I stated that I employed the negative pole in the uterus in eight of the nine cases. It may be asked when should we employ the positive and when the negative pole? That depends upon the amount of flow and the size of the uterus. If the uterus is large and flabby or the flow profuse, I would use the contracting positive pole.

If, on the contrary, the uterus is undeveloped and the flow scanty, I would prefer the negative pole.

In case there may be some here who did not see my paper on the subject, I may be allowed to repeat the few brief directions for carrying it out:

After careful bimanual examination for the purpose of excluding pregnancy and of ascertaining the position and condition of the pelvic organs the vagina is disinfected by a douche, if this has not already been done at the patient's home. An ordinary Simpson's uterine sound of large size is then bent to the ascertained curve of the uterine canal, passed through the flame of the spirit lamp, cooled and insulated with a piece of clean rubber tubing to within two and a half inches of its extremity or less if we have reason to think that the uterus is undeveloped. In the handle of the sound a hole has been bored just large enough to hold the tip of the conducting cord from last zinc of the battery. The sound is then guided into the os uteri on the tip of the finger until it meets with some obstruction when a current of ten milliampères is turned on. In a minute or two the obstruction will seem to melt away and the sound will glide into the cavity of the uterus. The current is now gradually raised until the patient says she can feel it in the uterus, generally between twenty and fifty milliampères, being at once lowered on the appearance of the slightest pain. At the end of five minutes the current is gradually turned off again when the sound will be found to drop out almost of its own accord and very much easier than it entered.

This may complete the seance, or as an adjuvant and safeguard a boro-glycerid tampon may be inserted. The patient may return home and resume her duties forthwith, as such mild applications do not require any precautions in the way of resting, etc. The positive pole of the battery is attached to the ordinary clay abdominal electrode. When it is desired to attach the positive pole of the battery to the intra-uterine electrode, the latter must be made of platinum or carbon.

I can only say, in conclusion, that I have no hesitation in recommending a treatment which in my hands has given such good results.

DISCUSSION.

DR. MASSEY was glad the author was more positive now than formerly, in his use of the galvanic current in cases characterized by pain. It should not be forgotten, also, that his work originally was that of an operating gynecologist.

The speaker said he could corroborate everything which had been said in the paper about the ease of the treatment, and its freedom from risk in the hands of any one competent to make intra-uterine applications. He did not believe an application should be made to the interior of the uterus oftener than every two or three days. He rarely saw atresia unless very strong currents had been used, or the operator had omitted to insulate the portion near the os. It is for this reason that he preferred to insulate the instrument with shellac. The obstruction at the internal os is largely due to spasm.

He also wished to commend what had been said about painful menstruation being often of a neuralgic nature. He had called this condition "menorrhalgia" instead of dysmenorrhea.

DR. SPRAGUE said he had had more satisfaction in this line of treatment than in any other; for he had very rarely failed to relieve dysmenorrhea by intra-uterine application of electricity. He had not tried the positive pole very much, but had not found it as good as the negative. He had used moderate currents, and he had not produced atresia, but on the contrary had relieved what atresia already existed. It is much more probable that the pain which is induced at the internal os is due to hypersensitiveness of the nerves than to endometritis, because it is relieved by a current so mild that it could hardly be expected to affect an endometritis. He never used over fifteen milliampères.

DR. HAYES wished to place himself on record as having the same clinical experience as Dr. Smith. The other day he had a case of dysmenorrhea which was supposed to be due to atresia, but he treated it with intra-uterine galvanization, and was much pleased to see it yield.

DR. CLEAVES said that after an experience of seven years she could corroborate what Dr. Smith had said. She thought dysmenorrhea was quite as often due to pelvic congestion as to endometritis; hence, it was relieved by quite mild currents. She could also corroborate what was said about this treatment not producing sterility, as a number of her patients had become pregnant within a few months after the treatment. She preferred mild currents, and gave the treatment not oftener than once in five days or a week.

One patient who had been formerly treated by several eminent specialists, and who had worn a glass stem after divulsion for several weeks without relief, was completely cured about seven months ago by mild applications of positive galvanism. She had remained perfectly well, and for the first time in her menstrual life is now absolutely free from pain.

DR. KELLOGG said that the use of the galvanic current for the relief of dysmenorrhea is its most important use; it is almost a specific for certain forms. In the great majority of cases, dysmenorrhea is not due to atresia, and this is why the surgeons have very largely abandoned the old method of dilatation advised by Dr. Peaslee. At one time he curetted these cases after dilatation, because he found that in cases where there was no obstruction in the canal, there were vegetations present almost without exception. He thought these vegetations swell up at the menstrual period, and produce an obstruction only at this time. In these cases the use of ten to twenty milliampères with either pole—most commonly the positive—is very effective.

In another class the dysmenorrhea is due simply to hyperesthesia, and here he always uses the positive pole, as it destroys the sensitive nerve endings. He was very certain it did not prevent conception.

DR. DICKSON also wished to indorse the use of galvanism for this condition. He took great pleasure in saying that the surgeons and gynecologists in the hospital with which he was connected were now looking much more favorably on the electrical treatment. Cases in which the uterus is so irritable that uterine colic comes on, on the introduction of an instrument, yield very readily to galvanic treatment. He also believed with Dr. Cleaves that the condition is more often due to pelvic congestion than to endometritis.

His electrode for this work consists of an ordinary piece of copper wire, the size of a common uterine sound, the end of which is readily rounded. It is bent to the proper curve, and silver plated, and then insulated with hard rubber, for such tubing can not be easily procured to fit wire of various sizes.

DR. MAATIN expressed his appreciation of this paper. He thought as electricians we should not forget that we are speaking to the profession at large. Every case of dysmenorrhea is not by any means suitable for galvanic treatment. The treatment should be preceded by a thorough examination and the making of a careful diagnosis. We should not fall into the old-time quack practice of "giving" electricity. Occasionally dysmenorrhea is due to occlusion of the os or canal; sometimes it is due to non-development of the uterus, in which case the faradic current of slow vibration to develop the muscular tissue is more suitable than is the galvanic current. In another distressing form due to tubal and ovarian difficulty, we would get disastrous results from the galvanic current. A tubal or ovarian abscess, or the so-called cystic ovary will not yield to the galvanic current when it will frequently yield to a sedative current of high frequency. Even this should be used with great caution lest it cause the expulsion of the contents of such an abscess into the peritoneal cavity. For endometritis or stenosis of the canal, he agreed that galvanism should be used, and he preferred the positive pole with an electrode insulated beyond the os. He had devised an electrode specially for such work.

DR. WALKER said that galvanism is a failure if used as a specific. When the dysmenorrhea is more marked two or three days previous to the flow, he never gives galvanic treatment until after a careful examination of the appendages under chloroform.

DR. SMITH, in closing the discussion, said that several of the objections raised were really answered in the paper because he had expressly stated that the treatment is not to be begun until after a most careful and thorough examination for diagnostic purposes. Being an operating abdominal surgeon, he had forgotten to emphasize the fact that the treatment should only be employed by those competent to determine the existence of disease of the appendages. In the majority of cases he believed dysmenorrhea was due to spasm of the internal sphincter, the result of reflex irritation from an endometritis. It is for this reason, that he applies the current directly to the internal os, for it is well known that when there is a small ulcer in this situation, a mild cauterization of these terminal fibers will often temporarily give relief.

(To be continued.)

Blank Applications for membership in the ASSOCIATION, at the JOURNAL office.

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This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues and subscription for THE JOURNAL. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above amount the weekly JOURNAL of the Association will be forwarded regularly.

All members of the Association should send their Annual Dues to the Treasurer, RICHARD J. DUNGLISON, M.D., Lock Box 1274, Philadelphia, Pa.

SATURDAY, MARCH 31, 1894.

THE FORTY-FIFTH ANNUAL MEETING.

The next annual meeting of the AMERICAN MEDICAL ASSOCIATION will be held in San Francisco, June 5, 1894. The programs of the Sections, so far as completed, show an amount of work that will not in any degree fall below the high standard of last year.

We are much pleased at the tendency to condense the papers, and in the interest of those who will read them, we hope that all Section officers will use their influence in inculcating the value of brevity as an aid to correct understanding. Redundancy of expression detracts from the merit of an article, and often renders the meaning obscure.

The enlargement of the JOURNAL made last July, will we trust be permanent, and will enable the early publication of the Transactions.

The revised list of members is now in preparation, and together with the report of the committee on the new Constitution, will be ready for distribution at the meeting. By the rules, this list must be published triennially, and few can imagine the labor involved in making the necessary changes.

We sincerely hope that the publication of this list will have the incidental effect of stimulating the members to renewed effort. We earnestly appeal to every member of our already great ASSOCIATION to use his personal influence to increase the membership. The ASSOCIATION has, to-day, more members than it ever had, but it has only about one-third as many as the British Medical Association. By a little more effort on the part of our members we might have twice as many members as that excellent organization.

The Committee of Arrangements have set about the task of bringing into fellowship the entire regular profession of the Pacific Coast, and these added to the existing list, will give the ASSOCIATION a greater impetus than has been given at any recent meeting. One of the arguments used to bring them to this meeting, is that they will have an exceptional opportunity to meet their Eastern brethren. This demands from the old members that they make every reasonable sacrifice to benefit the ASSOCIATION by attending the meeting and taking part in its proceedings.

The trip itself promises to be most attractive; the stops among the Rocky Mountains of Colorado, the visit to Salt Lake and the scenery on the Sierras, will be remembered through life. By traveling on the regular ASSOCIATION train, there will be no extra fare of any kind required for the time taken up while inspecting Denver, Colorado Springs, Manitou, Glenwood Springs and Salt Lake. The itinerary will be published next week.

The rates promised are the excursion rates given to visitors to the Midwinter Fair which will be open until July. We are promised the benefit of any lower cut rate that may be prevailing at the time.

The return trip may be taken by way of the Northern Pacific Railroad, or may be taken by any of the direct lines.

Those desiring to see the Yellowstone Park and its natural wonders may return by way of the Northern Pacific.

We earnestly urge all who can, to make the excursion. Not only will the Doctor have an agreeable and pleasant journey but, on his return, the sick room of many a sufferer will hear the story of his eventful tour to the Golden Gate.

NEW JERSEY MEDICAL EXAMINING BOARD.

The State Board of Medical Examiners of New Jersey is now in the fourth year of its existence; and during this short time has demonstrated its importance and necessity. It has not alone elevated the standard of qualification of those who were licensed; prevented incompetents from practicing, and the influx of those who had fraudulent diplomas as was common before the law was passed, but exercised a decided influence upon medical education. The Medical Society of New Jersey, organized in 1776, was given authority to confer the degree of M.D. in 1866, but the Society did not often have an opportunity to exercise this privilege, for the reason that, as a rule, the medical colleges had far less rigid examinations. The law that was in force before the Medical Examining Board was created, simply required the registration of a diploma from a legally chartered medical college, in the office of the county clerk, in the county in which the party wished to practice. A similar law was in force in New York York and Pennsylvania, before the present laws were enacted, but in these States the diplomas of schools outside of their respective States, had to be indorsed by one of the medical colleges of that State. This provision exercised some control, but in New Jersey

there was no medical college, and as a necessary consequence, many diplomas of disreputable and fraudulent colleges were registered; in fact this stimulated the sale of diplomas, and the organization of fraudulent diploma-granting institutions. We noticed for several years the diplomas that were annually registered in the different counties of the State, and among them were found diplomas the possessors of which had been driven from other States. We were much struck one year by finding the diplomas of the so-called "American Health College of Cincinnati, in which was taught in six weeks the great vitapathic system of medicine." This institution was incorporated under the laws of Ohio, "authorizing the holder of a diploma to practice the vitapathic system of medicine, and conferring power to solemnize marriages, preach the gospel, and perform all other duties as a minister."

The long-felt want was, however, soon supplied, by the establishment of the Medical and Surgical College of New Jersey, at Jersey City in 1888, under a charter obtained from the Legislature of that State in 1870. The character of the College was exposed by the writer early in 1890, and soon after was temporarily closed by injunction of the Hudson County Medical Society, and on Nov. 11, 1890, the State Board of Medical Examiners took action toward securing the repeal of its charter, at the next session of the Legislature, in which they were successful.

The present law, when it was enacted, May 12, 1890, was undoubtedly one of the best, and with a few amendments would be all that could be desired in the way of legislation. It differs from the laws of other States in dividing "the applicants for examination into three classes," to-wit: 1, persons graduated from a legally chartered medical school, not less than five years before date of application for a license; 2, all other persons graduated from a legally chartered medical school; and 3, medical students taking a regular course of medical instruction, the examinations all differing.

The Secretary, in the Third Annual Report, says that the law rather acts by exclusion than by rejection; "this is proven by the fact that during our three years' existence, we have examined only 397 candidates, including the preliminaries, and those previously rejected, and issued only 307 certificates to practice medicine, which only equals the number registered each year under the old law." Among the applicants examined, there were some who had been before the Board six times. The Board is composed of nine physicians, three of them being homeopaths and one eclectic, and is therefore what is called a "Mixed Board," the same as Illinois, Iowa, Missouri, Minnesota, Oregon, Washington, Virginia and Ontario. The Secretary closes his First and Third Annual Reports as follows: "Yet each member will bear me witness when I say that we are a harmonious Board; we are there as nine men to see to it that the requirements of the laws are complied with; that the words 'school' or 'pathy,' are never mentioned in our deliberations; that we do not try to break down or build up any school, but we are determined that every physician who hereafter locates in New Jersey shall be an educated physician."

In 1892 the Board secured the passage of an "Act to Regulate the Practice of Midwifery," the first special legislation upon this subject in the United States. While it is true that Illinois, Iowa and Missouri under the general powers granted in the law creating these Boards, have taken the midwives under their supervision. This legislation was secured under the "belief that the health of a large number of the poorer classes, who employ midwives in confinement, should be and could be protected by securing better care of the lying-in women and their infants." The result has proven that the Board was right, and so far under this law 232 women have been licensed to practice as midwives. It means a decrease in all the ills and accidents incident to the lying-in chamber.

It is but just to call attention to the fact that all the benefits incident to this legislation have cost the State of New Jersey nothing, but that it has practically been carried on at the expense of the members of the Board. The fees received from candidates, after paying the stationery bills, printing, engraving and mailing certificates, printing laws, rules and regulations, and furnishing examination paper, etc., scarcely pay the traveling expenses of the Board, not to mention the loss sustained in their private business during their attendance upon the meetings of Board, and the time consumed while at home in the preparation of the questions for examination, and examining the answers to the same.

We understand that an effort will be made to secure amendments to the law, at this session of the Legislature, and it is to be hoped that provision will be made to relieve the burden of maintaining the Board from its members, and that they be properly compensated. It is not saying too much that a great deal that has been accomplished under these laws is owing to the efficient Secretary, Dr. Wm. Perry Watson.

THE LATE JOHN H. RAUCH, M.D.

The editor received a telegram on Saturday last, from Dr. Wm. Guilford of Lebanon, Pa., announcing that Dr. Rauch had been found dead in his bed that morning (March 24). Elsewhere we print his completed summary of the present smallpox epidemic in the United States; and a note from him written on Thursday stated that he would finish the article the next day. This article is therefore his last contribution to the literature of public hygiene. Since last

July, Dr. Rauch has edited the Public Health Department of this Journal, and the leaders written on sanitary topics since that date, were most of them his production. Few men were better qualified to write with authority on sanitary subjects, and as a practical hygienist he had few superiors in any quarter of the globe.

The public park system of Chicago, the water supply, the drainage canal of the city, and a multitude of public works recommended by him, will perpetually remind the coming medical historian, that in this age lived a wonderfully energetic and capable sanitarian.

In the matter of higher medical education, no single man did more to elevate the standard than John H. Rauch. No one can doubt that it was almost solely due to the action of the Illinois Board of Health, under the Practice of Medicine Act suggested by him, that the medical colleges increased the length of their college terms, and required additional study as preliminary to graduation. The time was ripe for the movement. The American Medical Association had urged it repeatedly, and the general sentiment among medical men was tending toward higher medical education. The man to lead the work was found in Dr. Rauch, and within one year from the time the Illinois State Board gave public notice, the medical schools throughout the country had raised their admission standard, and lengthened their collegiate year. The movement thus started proved popular and still greater advances followed.

If few have had so great an opportunity, none have taken advantage of it as he did, to spring into leadership.

With the general acceptance of the four year system by the medical colleges, his work was finished, and he realized it. Worn and broken by the hardships of long and faithful service, and enfeebled by disease, he retired last autumn to his old home in Lebanon, for rest and recuperation.

His intense interest in everything relating to the American Medical Association, which organization he regarded as appealing in the strongest possible manner to the *esprit du corps* of the medical men of this country, led him to actively support this Journal and too often work beyond his strength in its interest. As a member of the Board of Trustees, his advice was always conservative and useful. His place on the Board will not easily be filled.

CONSTRUCTION OF STATUTORY PROVISIONS FOR THE CARE OF INDIGENT SICK.

A statute providing for the care of the indigent sick, the Supreme Court of Idaho holds, in the case of Board of Commissioners v. McFall, decided Feb. 9, 1894, is one of mercy and benevolence, and must be liberally construed, with a view to carry into effect its beneficent objects and designs. The provisions of the Idaho statute, directing contracts to be made for the keeping of the indigent sick of a county, for a gross sum per year, the court holds are broad enough to include all such sick within the county. It does not require that they reside within the county any certain length of time, or that they possess any particular qualification, other than that of being indigent sick or otherwise dependent poor. A citizen of another State, who comes into this State and becomes sick, and is pecuniarily unable to provide for himself proper medical aid, attendance and support while so sick, comes within the purview of that statute. However, in a case of that kind it is the duty of the Board of County Commissioners to remove such sick person to the county or State of his residence as soon as practicable. One who has a contract for keeping all the indigent sick of a county, for a gross sum by the year, is not required to keep any who do not come within the terms of his contract. And he can not bind the county for the keeping and caring for any person who does not come within the provisions of the statute.

CHANGE OF OCCUPATION DOES NOT DISQUALIFY AN EXPERT WITNESS.

The competency of an alleged expert witness is a preliminary question of fact to be determined by the trial court, and its determination that the witness is competent will be generally regarded as conclusive, unless there is no evidence whatever, or no sufficient evidence, to support it, or the determination is contrary to the evidence. So says the General Term of the Court of Common Pleas of New York City and County, in its decision of the case of Haas v. Green, rendered Feb. 5, 1894. That an expert witness has changed his employment, for example, has abandoned his studies as a chemist and devoted himself to the occupation of a druggist, vending drugs and toilet articles exclusively, this court further holds, does not render him any the less competent.

PUBLIC HEALTH.

The Smallpox Situation In the United States.

By John H. Rauch, M.D.

The following gives the smallpox status of the United States to March 17, obtained from official and reliable sources:

Two steamers have recently arrived with smallpox: One at the Delaware breakwater, from Rouen, France; and the other at Boston harbor from London. A young lady who arrived on the *Majestic* from Paris was taken sick after her arrival at Brattleboro Vt., and there was another case in Elk County, Pa.

No immigrants should be allowed to come to this country from Europe without being vaccinated before embarking, owing to the prevalence of smallpox in Europe.

The Health authorities should continue to press vaccination, as it will be found that the objections of many will be removed with the milder weather of the next three months.

With a more thorough sanitary investigation of the country than obtained twelve years ago, and the exclusion of unprotected immigrants, the epidemic should be stamped out by next December.

Massachusetts.—Dr. Abbott, the Secretary of the State Board of Health, reports under date of March 14, as follows:

Cases reported to the Board	October 1893, ...	3
" " " "	November, 1893, . .	8
" " " "	December, 1893, . . .	19
" " " "	January, 1894, . . .	25
" " " "	February, 1894, . . .	27
" " " "	March 1 to March 14,	14
		—96

Of this number 68 were in Boston, 8 in Lowell, 5 in Holyoke, 4 in Worcester, 2 each in Somerville, Brookline and Methuen, and 1 each in Marlboro, Yarmouth, Lawrence, Waltham and Lynn. There were 13 deaths and all unvaccinated. Can not give the vaccinal statistics at this time. The following, however, for the previous eight years (1885 to 1892 inclusive), is worthy of note:

Number of deaths from smallpox reported to the Board,	28
" " cases of " " " "	124
" " deaths among the vaccinated, ...	3
" " cases " " "	50
Percentage, ... 6 per cent.	
" " deaths among the unvaccinated, ...	17
" " cases " " "	49
Percentage, ... 34.7 per cent.	
" " deaths among the doubtful or unknown (as to vaccination), ...	8
" " cases among the doubtful or unknown (as to vaccination), ...	25
Percentage, ... 32 per cent.	

The only points in the State where cases exist are Lawrence, Yarmouth, Lynn, Waltham, and Boston. At the four first named there is only one case, and there are now in Boston only 17. In the latter part of February a number of cases were found in South Boston, and as there seemed to be a tendency to spread, the Board of Health promptly organized a vaccinating corps of fourteen physicians, who made a house-to-house inspection, in the infected districts, vaccinating all who were not protected by recent vaccination, and at this time it may be said that the disease is under control. Vaccination is compulsory in Massachusetts.

Connecticut.—In December, 1893, there were 7 cases in the town of Winchester. Of these 5 were treated as chickenpox; the 2 following cases were recognized as smallpox. In January, 10 other cases occurred in the town, and then it spread to the adjoining towns of Norfolk where there were 3 cases, and to Canaan where there was 1 case. On January 3, a case was reported in New Haven. No spread from the three last points, so far as known. In Waterbury, a case was found on February 17 and another on the 26th. Last week a man suffering from smallpox took a New York train at South Norwalk. Much consternation was created on the train, and upon arrival at New York, the patient was taken in charge by the health authorities.

New York.—Smallpox now exists at Red Hook, Tivoli, College Point, Walworth, Manchester, Ontario, Yonkers, Utica, and Sing Sing Penitentiary.

New York City.—Cases in Hospital January 1, 18; February 1, 40; March 1, 64; March 3, 56; March 10, 50; March 17, 43. Cases reported for the week ending January 6, 11; January 13, 11; January 20, 22; January 27, 22; February 3, 22; February 10, 23; February 17, 23; February 24, 29; March 3, 30; March 10, 28; March 17, 26, making a total from January 1, to March 17, of 239 cases. From the foregoing it will be seen that the New York Board of Health has held the disease in check under very difficult circumstances, and it now looks as if it was under control, and that the number of cases will continue to decrease.

Brooklyn.—In January there were 70 cases of smallpox reported, February 65, and to March 17, 71, making a total of 206 since the beginning of the year. This increase is mainly owing to a nest of smallpox found on March 1, and perhaps to the demoralization of the Health Department incident to a change of administration. The Health Commissioner is acting energetically and on the 10th inst. established eight vaccinating stations, where the poor can be vaccinated free of charge. Others will be opened as soon as possible, and we have no doubt, with the other precautions taken, that about April 1 the disease will begin to decrease. There are now about 60 cases in the city. There has been a slight increase during March in infected points throughout the State.

New Jersey.—There is 1 case at Hoboken, and 3 at Jersey City, and several convalescents in the Hudson County pest house. In 1893 there were many cases in the State.

Pennsylvania.—Since January 1, 1894, smallpox has existed and been found at the following places: Reading, Fritztown and West Leesport, Berks County; Mechanicsburg and Carlisle, Cumberland County; Oakdale, Allegheny County; Jeannette, Westmoreland County; Pittsburg, Tyrone Forges, Philadelphia, Pottstown, Bedford County; Williamsport, Wilkinsburg, Alleghany County; Shamokin. (An Italian direct from ship at New York died at Dagus Mines, Elk County) Riverside, near Danville, Danville, Jersey Town, near Danville, Mohn's Store, Berks County, and Pottsville.

Smallpox is now at Pittsburg (has been stamped out twice here in the last four months), Shamokin, Riverside, Danville, Jersey Town, Mohn's Store, Berks County, Maconaqua, Pottsville and Philadelphia. About a month ago a man died at Danville from what was called purpura hemorrhagica and chickenpox; soon after, a case of smallpox occurred at Shamokin and then at Riverside. In both these cases the disease was traced to Danville. A bitter controversy ensued, but the State Board of Health very properly directed the Danville Board of Health to treat all cases of so-called chickenpox as smallpox, and on March 16 there were under treatment there, smallpox, 2 cases; varioloid, 3 cases; chickenpox, 10 cases. The case at Pottsville is traced to Danville.

A very disgraceful performance occurred during the week in which a smallpox case was compelled to walk forty-two miles before he was taken care of. How many cases will result from this case can not be told. There are now 27 cases in the State, a less number than at any time for the last six months. The vaccination of the public schools is progressing very satisfactorily.

Philadelphia.—The Board of Health of this city at this time has a good smallpox record. In 1893, there were 43 cases reported and 5 deaths. There have been 3 cases since January 1, 2 importations from Connecticut and 1 from New York. There is only 1 case there now. Repeated introductions of the disease have occurred and it has been repeatedly stamped out. The President of the Board is fully warranted in his annual report in saying: "The comparative freedom of the city from the disease notwithstanding its prevalence in a number of places in Pennsylvania and adjoining cities, shows that among other things a most careful supervision and prompt application of prophylactic measures in all first cases and vaccination was successfully resorted to. There were twenty-four centers from which the disease might have spread, but notwithstanding this fact, the entire number of cases was only 13."

The steamship, *Erivan*, from Rouen, France, arrived at the Delaware breakwater, March 3 with two of her crew suffering from smallpox.

Ohio.—Since February 1, smallpox has been reported at Springfield, Toledo, Columbus, Lima, Dayton, and Worthington. The Columbus case was two days in the General Hospital before character of disease was discovered, and the last week another case was found at that place. Since the first case was reported at Toledo three more have been found but no connection can be traced to the first case. Owing to the fact that a severe outbreak occurred in the State early in 1893, (introduced by immigrants) which resulted in the vaccinal protection of many, and the energetic efforts of the State Board of Health for the last four months, in pushing vaccination, it is believed that the disease will be prevented from spreading to a great extent. There are now in the State five points of infection and 8 cases.

Illinois—From October to March 8, there were outside of Chicago 5 cases in Mascoutah Township, Clinton County; Hull's, Pike County, 1; Cotton Hill Township, Sangamon County, 1; Manhattan, Will County, 1; Round Grove Township, Livingston County, 1; Joliet, 4; Peoria, 2; Spencer Station, Will County, 2; Jonesboro, 1; Edwards County, 15, all in county poorhouse. Of these there still remain at Joliet, 3; Jonesboro, 1; Edwardsville, 15, and at Spencer Station 1, making 20 in all, a good record taking everything into consideration. It is said that only 5 cases occurred among the laborers on the Drainage Canal.

Chicago.—In December, 66 cases were reported; January, 180; February, 243; and to March, 17, 155, making a total of 578 since the beginning of the year. There are now in Hospital 153 cases. It will be seen that since January 1 there has been a very rapid increase, and that there are now in Chicago over one-third of all the cases in the United States. The conditions that obtain are peculiar, and while more

public vaccinations have been performed than in any other city in the United States, and a great deal of very excellent work done, the number of cases still continue to increase.

We are pleased to note that the clergy are interesting themselves in vaccination and through their assistance, whole congregations are being vaccinated; also that a house-to-house inspection is being inaugurated, and we have no doubt much good will be accomplished. With the elevation of temperature, the number of cases will begin to decrease.

The epidemic commencing in 1853, continued nearly through 1855, and was kept up by immigrants. We had another commencing in 1863, and continued to the end of June 1865. During this time immigration revived, and contributed to the keeping up of the disease, although some share of the cases were contributed from the large number of soldiers and prisoners of war at Camp Douglas. In 1871 smallpox was brought here a few days after the fire by immigrants, and in 1872 there was a marked increase of both foreign and domestic immigration into Chicago, attracted by the rebuilding of the city. This epidemic commenced in October 1871, and continued until May 1874. The next, commenced December, 1879, through an immigrant, and continued to the end of 1882.

After smallpox has obtained a foothold in a large city, it can only be stamped out by securing the vaccinal protection of all that may be liable to contract the disease, as no one can tell when they will come within the influence of the contagion.

Wisconsin.—Under date of March 9, Dr. J. T. Reeve, Secretary of the State Board of Health reports as follows:

"Until January 20, last, our State had been almost entirely free from smallpox for years. On that date a case was reported from Milwaukee in the person of a little girl. The origin was not discovered. Very strict precautions were taken and the disease was confined to this case.

On January 27, the disease appeared in a prisoner in the county jail at Janesville. It was confined to the original case which proved fatal. Since that date it has appeared in the jails at the following named places, in the order and to the extent named, to-wit: Juneau, January 31, one case recovered; Sheboygan, February 1, one case, recovered; Portage, February 12, one case, recovered; Madison, February 14, one case, died; Jefferson, February 14, one case, followed February 21, by a second case; Waukesha, February 20, two cases, died; Elkhorn, February 23, one case. Several of these cases were in the persons of tramps arrested for vagrancy or crime, and some facts lead to the belief that the cases were closely connected in their origin. For example, the case appearing in the jail at Elkhorn, reported to this office February 23, the prisoner spent the night of February 8, in the jail at Jefferson from which smallpox was reported on the 14th.

The disease has also appeared in tramps in the following places, the tramps being at large at the time of their coming down with the disease: February 3, a report was received from Waukesha that a tramp was caught upon the street suffering with smallpox. He was confined to the pest house, and recovered. February 10, a tramp came to the police station at Fort Howard complaining of being sick. The Health Officer was called, and not diagnosing the case as smallpox sent the man to the Sanitarium of which he is the proprietor. It was soon manifest that he had the smallpox, but not until others had been exposed, and subsequently four inmates of the Sanitarium were stricken with the disease. The original case died; a second death followed. One of the attending physicians in these cases carried the disease to his seven weeks old babe. He then with wife and babe entered the Sanitarium. The child died, making six cases occurring at this institution with three deaths.

February 14, a case was reported from DePere. A girl working in the rag room of a paper mill—one case followed from exposure to the first case. March 4, another case was reported from DePere, a man employed in a paper-mill—apparently there was no connection with the former cases.

February 19, a case was reported from Camp Lake, Kenosha County, in the person of a laborer who came from Chicago the week previous. No cases followed.

February 22, a girl working in a paper-mill at Menasha was reported as having smallpox—the origin was supposed to be from the rags; the girl died. No cases followed.

Beloit reported February 24, a case in the person of a hotel girl—origin very doubtful. One case followed.

March 2 a case was reported from Lewisburg, Grant County. No additional cases reported.

On March 8, the last case reported, was at Neenah, in the person of an infant six months old. No probable source of origin yet discovered, but some of the family had recently been traveling.

The cases outlined above make a total of 27, with 8 deaths, reported from 16 distinct communities. In all cases (with possibly one exception) the local Boards of Health and Health Officers were prompt and thoroughly effective in adopting stringent measures of quarantine, and the recommendation of general vaccination issued by the State Board of Health early in January, together with the rule of the Board requiring vaccination as a pre-requisite to admission to school, published January 31, caused vaccination to be very generally carried out throughout the State. There has since been reported a suspicious case at Milwaukee. This is a very instructive and interesting report.

Michigan.—Dr. Baker, under date of March 16, says that since Jan. 1, 1894, there have been four jurisdictions in Michigan infected with smallpox. Otsego village 4 cases; Otsego township 2 cases; Menominee 4 cases; and Crystal Falls 1 case. In all 11 cases, and 3 deaths with no spread so far from the original cases. There are now in the State 4 cases. The vaccinal status of the State is good, and the sanitary organization of the State excellent.

Iowa.—Within the last four weeks Iowa had 7 points of infection, and in no instance did the disease spread beyond the first cases, all being importations from Chicago; smallpox now exists only at Tama City, where there is one case. This is a remarkably good record, and reflects great credit upon the local and State health authorities. Vaccination in spite of opposition has been very general.

Minnesota has had but one case, and there is no smallpox in that State now. The vaccinal protection of the State is very good, and with its complete and efficient health organization there is not much danger of the disease, if introduced, of spreading.

Kentucky.—Dr. McCormack says that we have only had 14 cases of smallpox in this State, during the present epidemic, 16 in Louisville, and 4 in Paducah. The disease was promptly stamped out in both cities.

Indiana—There is at this time a case at South Bend, and 2 at Crown Point; both contracted the disease at Chicago. So far there has been no spread from the original number. The prevalence of the disease at Muncie, and other points in this State during the past summer, resulted in pretty general vaccination, and the State, generally speaking, is well protected from a vaccinal standpoint. The State Board of Health is, however, pushing vaccination, lest the disease obtain another foothold.

West Virginia.—Last fall the disease appeared at Bridgeport, Harrison County, in the person of a young girl just returned from Chicago; six cases of varioloid developed from this case, but the disease was completely suppressed before Jan. 1, 1894. In November, 1893, smallpox was discovered in the town of Lewisburg, Greenbrier County. Three men contracted the disease from the first case, and from these after Jan. 1, 1894, 12 cases occurred, nearly all mild varioloid. The disease then disappeared.

Virginia.—Since Dec. 1, 1893, there were 13 cases in Lunenburg County, 15 in Southwest Virginia, and 20 at Shendon near Luray. There is now only one case in the State.

Missouri.—Only three cases were sent to the hospital at St. Louis in eighteen months. One in January, and the others in February. They belonged to the tramp class of wanderers, and drifted here from other places. One unvaccinated patient died of confluent smallpox, the others recovered and the hospital is now closed. No cases have occurred throughout the State of Missouri. Dr. Homan, Health Commissioner, says: "Public vaccination has been practiced in St. Louis more diligently during the past six months than ever before, and this may account to some extent for the immunity enjoyed."

Georgia.—There are 5 cases of smallpox at Senoia and 1 case of smallpox and 4 of varioloid at Atlanta. Source of infection, Senoia. The Atlanta cases were thought to be chickenpox.

Tennessee.—Dr. J. D. Plunkett, under date of March 17, reports that since Nov. 7, 1893, there are 81 cases of smallpox in Tennessee. There are now in the State at Knoxville 4 cases, Chattanooga 2 and Nashville 2.

Ontario.—One case near Burgessville, Oxford County. Origin, Chicago.

There are now in Massachusetts 21 cases; of these 17 are in Boston. Connecticut 2; New York 123, distributed as follows: New York City 43, Brooklyn 60, and 20 cases throughout the State. New Jersey 4 cases; Pennsylvania 29, 12 of these being in Philadelphia. Ohio 7 cases, Indiana

3, Illinois 168 cases; of these there 15 in the State and 153 in Chicago. Wisconsin 10 cases, Michigan 4, Iowa 1, Virginia 1, Georgia 10, Vermont 1, and Tennessee 8 cases. Total in the United States 389 cases and less than there were on March 1.

From the foregoing, it will be seen that the effort of the health authorities, taken as a whole, have been successful, if not in stamping out the disease, in controlling it, as the only places where there is an increase are Chicago and Brooklyn.

A Petition to Establish a Department and a Secretary of Public Health.

To the Honorable the President of the Senate and the Speaker of the House of Representatives of the Congress of the United States of America.

The American Medical Association at its meeting at Washington in May, 1891, adopted unanimously this resolution:

"*Resolved*, That the President of the Association, W. T. Briggs of Tennessee, appoint a Committee to memorialize the next Congress to create a Department and a Secretary of Public Health."

At the meeting of the Fifty-second Congress in December, 1891, a petition and a bill to that effect were introduced in both Houses; in the Senate by the Hon. John Sherman and in the House by the Hon. John A. Caldwell, and they were referred to certain committees. No report has ever been made to either House on the subject.

At the annual meeting of said Association in the City of Detroit in June, 1892, the Committee reported the failure to secure any action of Congress on the petition; whereupon the Association again directed the select committee to renew its appeal for Congressional action; but no notice was taken of it, chiefly because the alarm at the approach of cholera from Europe led Congress at once to enlarge the existing quarantine system which it was supposed would answer all purposes.

The Chairman of the Committee addressed a communication to the Chairman of the Committee on Contagious Diseases in the Senate, which set forth that while the quarantine measures were very effective so far as the hindrance to transplanting the diseases of other lands was concerned; yet they did not include all the measures for the operation of preventive medicine which the American Medical Association was seeking to establish for the public welfare.

The only answer made at any time by this gentleman was merely verbal, and that it was his belief that Congress would not appropriate money that would increase public expenditure.

At the annual session in Milwaukee in June, 1893, these facts were reported, and the Special Committee was ordered to renew the appeal at the approaching Fifty-third Congress. Under this authority the undersigned beg your consideration of the whole subject anew.

In the Pan-American Medical Congress, which met in Washington in September, 1893, under the auspices of our Government, the most august assembly of medical men that ever met in this hemisphere, this question was carefully discussed and unanimously approved. Moreover, a large number of State Boards of Health, the National Board of Public Health and numerous medical societies in different cities and States have given their adhesion to this movement.

The American Medical Association is constituted of men of distinction in every part of the Union. For more than forty years its sessions have been held in the chief cities of the States lying between the Atlantic and Pacific coasts, and it represents nearly one hundred thousand intelligent and well-known citizens. The annual sessions have greatly promoted scientific research into the causes and treatment of diseases of every character, the formation of State Boards of Health, higher medical education and the publication of treatises on preventive medicine and medical practice, which form a continuous line of medical progress in the last half of this century.

The Government, through the operations of the Surgeons-General of the Army, Navy and Marine Hospital service has made liberal expenditures for the National Medical Library and its Index Catalogue, a Pathological Museum and some investigations on the origin, nature and spread of the fearful infectious germs that are brought to us by immigrant and other ships. But the medical profession believes that the Government can, in a wider way, promote the public welfare by creating a Department of Public Health, the head of which should be a physician, a member of the Cabinet and on a parity with the heads of the Departments of War, Navy, Finance, Justice, Agriculture, etc. A fair investigation will show that no profession excels ours in positive efficiency to sustain public order, public comfort and public virtue.

Hygienic science, on the one hand, and the progress of the sciences and growth of the mind, on the other, have always been powerful factors in the evolution of humanity. In the first century, when Rome had reached her apogee in power and civilization, and had constructed great aqueducts, public fountains, public latrines, gymnasiæ and a vast system of sewers, under the suggestions of physicians, Martial said that it was not merely a question of living, for the people, but to have good health; hence the maxim that has come down to us: "The health of the people is the supreme law."

Recently, the Lord Chancellor of England appointed Sir James Crichton Browne, M.D., L.L.D., as his visitor to make certain investigations in regard to the public health, and of the influence of certain employments upon the health and comfort of the laboring classes. We can only give a partial exhibit of his observations. He found, that while the decline in the death rate at all ages had been, within a certain period, 17.5 per cent. in those under 55 years of age, it had been reduced only 2.7 per cent. in those above 50 years old. The increased longevity has occurred under the age of 35. The decline in the death rate beyond the age of 45 had been insignificant, but from 65 to 75, the death rate was increased. He adds that it is not satisfactory to learn that while there has been enormous increase in the duration of life in babies and young people, the loss is alarming among those who are eminent in experience and judgment. The causes of this vital failure in the mature element of society was not difficult to find by his statistical studies. In three or four groups of diseases a marked increase in mortality has taken place; thus, in England and Wales, cancer in five years, from 1859 to 1863, carried off 35,654, while in five years from 1884 to 1889, the deaths by cancer were 81,620, an increase of 120 per cent. The increase in deaths by nervous diseases in the same period was 38 per cent.; in kidney diseases for the same period the increase in deaths was 164 per cent.; in heart diseases, the increase was 143 per cent. These affections, he continues, are of degenerative character and may largely be traced to vital abuse, overstrain and the increasing luxuriousness in our advancing civilization which establish premature senility. Moreover, the large increase in insanity is causing solicitude everywhere. It can not be questioned that this fearful increase in bodily and mental decay should be well understood by and placed before the people. There is another phase of this question of premature decay of great interest and it concerns a burning question of the day. Sir James says, that owing to the strain and drive in many manufactories where handicraft piecework prevails, the neuro-muscular systems of the shoulder, arm and hand which on the average attain maturity at 30 years, and should continue as much longer, begin to fail at 45 years, and while at 30 a man can earn 45 thillings a week, at 45, strive as he may, he can not earn over 38 shillings, and at 55 his earnings fall to 24 shillings, owing to the premature decay of the motor apparatus from overwork. In Sheffield he found that penknife makers aged 30 years, strike 28,000 blows a day with a hammer, but at 45, they find their celerity and skill have declined to nearly one-half, and a reduction in wages to the same extent ensues.

As we have no national office for the collection of such statistics, except perhaps the Bureau of Labor in a partial way, we must rely upon those furnished by other nations.

The telegraph operators, everywhere, sooner or later become the victims of scrivener's palsy of the fore-arm and fingers on account of the excessive use they are obliged to make of them, for, as their celerity fails their wages decline. The mail clerks on railroad trains are required to work many hours more than in other Government offices, and are besides compelled to memorize, with all the certainty of the multiplication table, the locality of eight to ten thousand postoffices in the vast districts of the country. The effect in numerous cases of this excessive use of the memory is insomnia and a mild form of dementia. It is, certainly, a function of statesmanship to investigate these serious evils. The Government has begun to investigate the exposure of employes on railroads who are often wounded and killed in the coupling of cars; and the investigation of the desperate use of young people in the "sweat shops" of clothing establishments has created a great outcry for their relief.

"In 1848 the Public Health bills in England went into operation. The annual death-rate which up to that time

was 22.5 per thousand diminished to 17.9 per thousand within twenty years; showing a saving in that time of 125,000 lives. The effect of hygienic measures in preventing sickness is well known in the State of Michigan. During the year 1889 there were 417 outbreaks of scarlet fever. In seventy-two of these outbreaks, isolation and disinfection were neglected and the number of cases, per outbreak, was 16.78 per cent. In fifty-two outbreaks, both isolation and disinfection were strictly enforced with the result of limiting the number of cases to 2.67 per cent. In many outbreaks only one restrictive measure was used and the other neglected, and in all such cases there was some reduction in cases, but never to the same extent as when both were enforced." (Dr. J. W. Brannan, *New York Medical Record.*)

Our census of 1890 shows that 524,000 deaths occurred in that year, and that 100,000 were from consumption. It is estimated that about one-half the whole number was due to diseases that could have been prevented.

It is now becoming generally known that infectious diseases and toxic elements are disseminated in food. An infectious disease in the family of a dairyman, or among his cattle, may be as widely spread as is the distribution of his milk. The pollution of streams supplying towns, cities, and wells of water at farmers' homes, we know, definitely, subject the people to tedious and fatal diseases which a wise sanitation would prevent. It is absolutely demonstrated that by the rigid application of hygienic measures the ravages of a pestilence may be stayed. Medical scientists speak of such destruction as a self-imposed curse of dying in the prime of life.

In primitive history we find that hygeia and therapy were the conservative and remedial agencies of afflicted peoples. We read with admiration of the wisdom which made sanitary measures a part of the religious codes of a nation. The hygienic laws of Moses, which undoubtedly embody fragments of his Egyptian training both as a physician and a priest, and the moral law, the Ten Commandments, received from the hand of God, have been kept together by the Jews in their sacred books and inculcated in their religious and social rites for thousands of years, which clearly accounts for their existence, physically and mentally, as one of the most vigorous races among the multitudes of the earth.

Physicians are held to be the guardians of the organs that concur for the maintenance of a healthy animal life, but it is not so generally understood that the great brain, the physical basis of the mind, is just as much an organ of their conservative regard; it is not so well known that the healthy brain is necessary to a free will—the function that places man in his supreme condition as master of created things.

The increased light which physiology and pathology have shed upon the relations of the brain and mind, has enabled us to locate the area in the brain where exists the capacity to think, where sensations are shaped into concepts, where ideas are symbolized in language, where memory holds its seat, the imagination displays its marvellous powers, and self-control is enthroned. All of the apparatus of our mere animal life—respiration, circulation of the blood, digestion and assimilation of food, excretions of waste tissues and the actions of the nervous and muscular systems are to maintain and develop in perfect health an area which we can cover with our two hands. It is the region of self-consciousness, the plane where spirit and matter are in impact and which enables a man to say: "I know that I know, I feel that I feel, I think that I think;" it is there, indeed, that consciousness feels itself to be coterminate with the cosmos. Who but the physician has the right to supervise this dread region? Closer than the minister of religion, or the rights of family, he stands as the guardian and interpreter of its illimitable faculties.

By prolonged physiologic and pathologic research, psychology has been lifted above the mere subtle reason of the schoolmen into the light of a new day, and is now comprehended as never before. Metaphysics is no longer a mere jugglery with words and phrases, but a function of consciousness only existing in the healthy area above described; it is the highest expression of reason, whereby the intuitional phenomena of thought and the phenomena derived from the senses, the ideal and the real, the subject and the object, the me and the not me, are brought by a free will into accord and the consciousness is freed from the baleful illusions, hallucinations and delusions which exist in the insane. The imperfect state of consciousness in unsound sleep, illustrates a mental state wherein ideas flow freely, regulated only by automatic association; we are led everywhere by the most grotesque and often fearful ideation, without any self-control; the metaphysical function is in abeyance; there is no metaphysics in dreams, the consciousness is on too low a plane for any exercise of the will. This argument is legitimate and should be convincing, that medical men hold an indispensable relation to the social and political state.

All abuses of the appetite in any direction, all violence done to the brain by overwork, overstrain, the excitement of narcotics, and the delirious speculative ventures in the values of stocks and of the products of the crops; everything, indeed, that keeps up, unduly, mental excitement, deteriorates at length the organic structure of the brain, enfeebles the mind in judgment on any subject; in short, a condition of dementia supervenes. It is for the physician to warn teachers of the deleterious effects of overtasking scholars; to warn people against luxuriousness, indolence, and the habitual use of stimulants, and excess in any passion or appetite; for, while the organs of mere animal life are damaged the nutrition of the brain is changed, the will becomes so impaired that self-control is lost. It is appalling to contemplate the social destruction about us on account of the prevalence of the passions of avarice, peculation and lust which so greatly defile public virtue. These are evils the indulgence of which has ruined statesmen and empires. Luxury and vice in combination form the dynamite in the moral world.

The medical supervision should begin in the primary and intermediate schools, which are frequently in overcrowded, ill-lighted and ill-ventilated rooms; this has become so serious that in Germany, at least, it has brought about State interference, and physicians must be consulted in regard to the hygienic properties of a schoolhouse. The physical structure of the eye is most liable to evil changes, leading to shortsightedness; and the organic life of the brain substance is exposed to deterioration leading to lowering of the intellectual faculties. In the technological schools of France the use of tobacco is forbidden, because it has been ascertained that its abuse renders the student incapable of solving the highest problems in mathematics. It is also of great importance that the methods of teaching should not involve an excessive abuse of the memory—the *memoriter* plan. This it is thought is too greatly employed in American schools, but it seems to be a necessity so long as the rank of a pupil in his class depends upon the rate per cent. of correct answers. The abuse of the memory fatigues the brain as physicians well know, and impairs the power of the free will. Lessons are memorized, and not acquired by efforts of the understanding, hence they are not well retained and furnish a poor basis for intellectual ability. Not only so, but the emotional conditions so often encountered, and the startling phenomena of hysteria and hypnotism are thus often superinduced. There are no fortuitous conditions that concur for the production of the best moral and political circumstances of society; the whole is purposive intelligence existing in the individual and combined in the exigencies of the family and the State. Wherever the highest development of physical health exists, there will be found the surest basis of intellectual life. These are not abstract questions of philosophy but are the most practical questions of our times.

A candid and broad investigation of the medical profession shows that it appertains to the most important functions in the commonwealth. A distinguished English writer has said: "I think it will be well for the state when the medical profession is represented in the councils of the nation as weightily as can be assured by official places and conferred dignities." An eminent German economist has said: "We must look to the medical men to resuscitate society." There are no evils in society which physicians may not do much to avert; there are no foes of human happiness so widespread, miserable and despairing as those which underlie public health; and physicians are the only hope of public relief.

It is certainly a remarkable spectacle, the constant efforts of physicians to save the people from outbreaks of disease, when success will limit to the smallest dimensions our practice and incomes. But this arises from the nature of our studies whose tendencies are to render an unselfish service to humanity in the time of its calamities. The physician is bound to render service to the poor, especially. The amount of gratuitous service in great cities is a very large part of their practice. In all of our public general hospitals they serve without salaries.

If there were cruelties to prisoners on either side in our civil war, it was not perpetrated by the surgeons of the opposing armies. When the strife ceased they were the first to extend the fraternal hand across the red fields of conflict.

The progress of medical science establishes our increasing responsibility to place our medical schools on the highest plane of teaching. There is a very large aspect of medicine that renders it so commonplace as practically to degrade it, and this is a consideration that will be a great obstacle in the way to your adoption of our bill. I allude to the giving of drugs by everybody for the relief of symptoms of disease. It may be said all the people, young and old, not only offer general advice but specify the remedies to be used. If medicine has no other basis than prescribing, it would possess no autonomy, embody no science, nor philosophic spirit; it would only become an unstable empiricism and would be abandoned to a revolting charlatanism and its practitioners be mere vendors of secret, false remedies, and, as is now so largely done, would rob the sick not only of their money but of any hope of relief.

The human frame is said to be the Divine idea of mechanism, and nothing in all the works of creation so completely illustrates in its structure what is called by geometers the "principle of least action," that is, the greatest competency in function, with the least expenditure of material. Its figure, symmetry, mechanical, physical, chemical and biological forces are so correlated that it fulfills all the conditions of adjusting internal to external relations. Its organs of special sense, its area of consciousness wherein it is the equipoise of the physical creation, justifies the ascription that man is the crown and flower of creation. Can any one doubt that it is only by a long and minute study that such an organism can be comprehended? Congress appropriates annually more than a million of dollars for the maintenance of military and naval schools, where the whole range of sciences are inculcated to ascertain the most approved methods of public defense and of killing our enemies. Can it be thought that any less science is needed to ascertain how to destroy myriads of enemies that provoke disease, and all the more terrible because invisible to common sight; and to save from death the most precious objects of human love and solicitude? Are there more scientific problems for solution in war by sea, or land, than those that exist in the grievances of our social life?

But we are not asking Congress to build a great medical school of instruction. Congress appropriates willingly large sums for the study of the diseases of cattle and plants, but comparatively nothing for the diseases of the people. But we show you that 522,000 inhabitants died in 1890, and that 250,000 of them at least, have perished by diseases which are preventable!

We ask for a Governmental Department of Public Health; one of whose functions would be the combination of the intelligence, feeling and force of all the schools and medical societies of the nation for collective investigation in order that physicians may become capable to the utmost, to relieve the woe and agony of suffering in individuals and families.

For the medical profession to be able to exert all its benign influences in society, it must have the same rank and dignity that is attached to other Departments in the President's Cabinet. The methods of research are the same as those employed by other scientists. The methods of the calculus that are employed to ascertain the cause of the perturbations of celestial bodies, are the same as those employed in the investigation of obscure diseases. The physician is guided in his investigations by the canons of logic, and hence it is that the opinions of well-trained doctors are as reliable and stable as those of jurists, statesmen, engineers, merchants, divines, lawyers and political economists. The same reproach applied to doctors because of their different opinions, applies equally well to all other callings.

At this time the success in medical practice surpasses any other period of its history. The death rate in our general hospitals was never as low. In surgery it is about 3 per cent.; thousands of successive births take place in maternity hospitals, without a single death; the mortality in typhoid fever is about 3 per cent. in hospital practice; in general medicine the rate is declining; but it is not as low as in surgery because of the increasing mortality, as before said, in such diseases as consumption, cancer, kidney, heart affections, and the continued bad hygienic conditions in the congested areas of our large cities, where one-half the children die under five years of age. (Cincinnati Hospital Report, 1893).

The influence of medical culture upon the progress of civilization as before said, both in ancient and modern times forms a great chapter in human history. The evolution of the mind and the achievements in philosophy are no more marvellous than what is seen in preventive and clinical medicine. The chief figure in the most brilliant era of Greek civilization was Aristotle. He was of the Esculapian caste and took up the profession of his father, a practitioner of medicine; but his constant dissection of animals and plants aroused a philosophic spirit of seeking behind all the phenomena of nature by synthetic formula, the unity of all living beings and their indissoluble relation to the cosmos. We can not, in our space, point out all the achievements of his immense genius nor his specific work in detail that entered into his purpose of constructing the edifice of inductive philosophy. Mere fragments of his precious writings were the only intellectual food (excluding the canon of sacred Scripture and the liturgies of the Church) of the Dark Ages; but when at last the chief of his philosophic works were collected and translated into Latin, the dawn of the revival flushed the skies and the sun of a new mental life shone in full strength upon the scholastic world,—the church adopted his philosophy and the renaissance was complete. The influence of Aristotle has continued to direct modern thought, and though much of it has been laid aside, his inductive philosophy and logical methods are invincible.

In Europe, medical affairs have always had the watchful care of the state, and eminent practitioners are now more than ever before, receiving titles of distinction. In Italy a physician holds a Cabinet Secretaryship, and in the Parliaments, everywhere, distinguished practitioners are taking part in general statesmanship. Without the science of medicine, civilization could never be effective in semi-civilized and barbarous lands.

The conquest of India by Great Britain has been maintained by superior military power; but its present tranquillity is largely due to the beneficent work of medical practice. Since the last great rebellion there, the English and missionary societies of our own country have established fifteen hundred hospitals and dispensaries, and medical schools are increasing in numbers. The light of Christian benevolence is now carried into the hitherto closed doors of the homes of the people. In China the same benign work has taken deep root. Fifty years ago Dr. Parker of the American Presbyterian Church, opened a hospital in Canton, and an immense work has been accomplished in surgical and midwifery practice, for which the Chinese had no remedies at all. Now a large number of hospitals and dispensaries have been planted along the sea coasts and throughout the interior. Besides male, a large number of well-educated female practitioners, are employed in them. It is the most touching spectacle of human sympathy and relief the world has ever known. Were it not for their skill in medicine the American missionaries would be expelled. Japan, Korea, Java and Africa, are being advanced in civilization in the same manner. Dr. Mungo Park and Dr. David Livingston were the most venturous explorers of Africa.

It is the belief of many physicians that if from the beginning of the settlements in this continent the medical office had been recognized as a Department of the State, on a parity with those of War, Justice and the rest, the great tribes of savage races could have been made friendly, and allies, and brought under the terms of a high civilization by the humane influence of our medical men.

Though Congress is voting vast sums for agricultural schools and experimental stations, yet these are above the reach of the great mass of farmers and their adult sons and daughters. They can not leave the fields and the household duties for at least nine months of the year, and they can not pay the expenses incident to college life; but schools of instruction, by means of lectures, demonstrations, drawings and experiments in physics, chemistry, and the structures and the functions of the chief organs of animals and plants, can be readily inculcated by the doctors in medicine who have themselves been taught in this manner. These lectures can be given by physicians during the winter seasons in the towns of the counties and within reach of the farmers' homes, and a central office, such as we propose, would aim to promote this without expense to the Government.

It will be the means of putting new life into the freshest and strongest minds of the people. Every farm would soon become an experimental station; Nature would be seen with new eyes, and the dull and monotonous lives of this most neglected class would become radiant with a new light. This may be counted one of the great influences that will follow the higher education of physicians.

The question may arise, whether such a Department in the Government would subserve the interests of any particular sect or school in medicine? We reply that, amid the apparent disparity in medical practice, there is one true unity and to attain this all true physicians are continually striving. It is evident that there can be but one anatomy, physiology, pathology, chemistry, physics or preventive

medicine. The difference among doctors lies in therapeutics or treatment of disease, and as in the past, so for the future, practitioners will use a variety of remedies and in varying quantities, and there will be different modes of management of sick and injured people. With the advance in medical education the modes of treatment will become more unified.

The organism which is called medicine, like every other product of man's constructive genius, is striving to attain perfection, and to accomplish this it must be sustained in all its scientific undertakings by the coöperation of national and state legislation.

We ask each member of Congress, who seeks relief for himself and his family in the times of their distress through the most accomplished practitioners of medicine, to consider that his mind is the type of that of millions who constitute the republic; and therefore we ask him to lend his influence to our effort to secure for the people the most highly trained persons in the science and art of medicine.

We hope that it is plain that a Secretary of Public Health would represent the medical consciousness of the nation, and that he would be one to whom we could all look for the exploitation of measures that will direct continuous scientific collective research in regard to epidemic and endemic diseases, and especially those of a degenerative character; and thus make his department the repository of the most important measures that concern the welfare and comfort of the people; and his duties will steadily grow broader and stronger in adaptability to public needs.

Respectfully submitted on the part of the Committee.

C. G. Comegys, Chairman.

A Bill to Establish a Department of Public Health.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled.

Section 1. That there shall be established a Department of Public Health. There shall be appointed by the President from the medical profession, by and with the advice and consent of the Senate, a Secretary of Public Health, who shall be entrusted with the management of the department herein established. He shall be paid an annual salary of $8,000.

There shall be appointed by the President, with the approval of the Senate, an Assistant Secretary of Public Health, at an annual salary of $5,000.

The Secretary of Public Health shall, with the approval of the President, provide suitable offices for the department, and shall employ such assistants and clerks as may be necessary.

Sec. 2. It shall be the duty of the Secretary of Public Health to obtain through all accessible sources, including State boards of health, municipal authorities, and the Surgeon-Generals of the Army, Navy and Marine Hospital Service of the United States, weekly reports of the sanitary condition of all ports and places within their territories and departments, and he shall publish weekly abstracts of the information thus obtained and other pertinent matters received by his department. The said department also shall, as far as possible, by means of the voluntary coöperation of State and municipal authorities, of various general and special hospitals, sanitariums, public associations and private persons, procure and tabulate statistics of marriage, births (noting those that are illegitimate), and deaths from epidemic, endemic and all other diseases, specifying those of a degenerative character, such as malignant growths, and affections of the nervous, circulatory, respiratory, secretory, digestive and reproductive organs, and from violence, accidents, suicide, murder, and data concerning the fruit of consanguineous marriages and the transmissibility of insane, alcoholic, syphilitic, nervous and malignant types of constitution to offspring, and to evils of race miscegnation. He shall also procure information relating to climatic and other conditions beneficial to health, and especially in reference to the most favorable regions in the United States for the cure or relief of chronic diseases, particularly tubercular consumption. He shall also procure information as to the prevalence and ruinous effects upon the body and mind of intemperance and prostitution. He shall endeavor to ascertain the extent, the origin and classification of insanity in the several States and territories of the country. He shall investigate the state of comfort of the laboring classes in respect to their lodgment, their trades, occupations, the healthfulness of their workshops and the contents of the atmosphere they habitually breathe, and the prevalence of premature degeneration of the nervous and muscular systems by the exactions of piece-work employment. He shall obtain information in regard to the soundness of their food and purity of water supply. He shall ascertain the ages at which the children of the poor are put to work, and its hindrance to their physical development, and their lack of common-school education. He shall seek through the State boards of health, information of the hygienic state of public school buildings respecting their illumination, ventilation, and presence of noxious elements in the circumambient air. He shall seek information in regard to the pollution of streams and navigable waters and public and private wells. He shall attempt, through the coöperation of the authorized medical schools in all the States, to promote the most extended and thorough training of students in order to fit them for the responsible duties that devolve upon practitioners of medicine. He shall, whenever an epidemic disease is spreading abroad, or in any country which by commercial or other relations may endanger the health of the inhabitants of the United States, have power to call a conference of the Surgeon-Generals of the Army, Navy and Marine Hospital Service, and the executive officer or officers of the various State boards of health throughout the country, to consider and advise with him in regard to the best methods to be pursued to protect the country against the invasion of any such epidemic disease, and the results of such conference shall be, by the Secretary of Public Health, communicated to the President and his Cabinet for such action as they may deem wise and expedient.

Besides the reports of the state of the public health which he shall make from time to time, the Secretary shall make an annual report to Congress, with such recommendations as he may deem important to the public welfare, and the report, if ordered printed by Congress, shall be done under the direction of the department. The necessary printing of the department shall be done at the Government printing office upon the requisition of the Secretary, in the same manner and subject to the same provisions as that of other printing for the several departments of the Government.

Sec. 3. The President is authorized, when requested by the Secretary of Public Health, and when the same can be done without prejudice to the public service, to detail officers from the several departments of the Government for temporary duty, to act under the department of Public Health to carry out the provisions of this act, and such officers shall receive no additional compensation except for actual and necessary expenses incurred in the performance of such duties. When a detail of such officers can not be made, the Secretary, approved by the President, may employ such experts, and for such time and in such manner as the funds at the disposal of the department may warrant.

Sec. 4. That to defray the expenses in carrying out the provisions of this act, the sum of fifty thousand dollars ($50,000,) or as much thereof as may be necessary, is hereby appropriated to be disbursed with the approval of the President, under the Secretary of said department.

This act shall take effect sixty days after its passage, within which time the Secretary and Assistant-Secretary may be appointed.

CORRESPONDENCE.

LETTER FROM BERMUDA.

Winter Days in Summer Islands—Notes from the Land of the Lily and the Rose.

Hamilton, Bermuda, Feb. 28, 1894.

To the Editor:—Out of the gray and the gloom of a foggy February morning steamed the *Trinidad* to a summery land at sea, bearing the biggest boatload of tourists ever bound from New York to Bermuda.

The early advent of Lent doubtless had much to do with this unusual tide of travel, though the fashion still obtains of waiting till nearly the end of winter before coming here.

From the snow and the slush, the hail and the cold of New York and Brooklyn to the warm sunshine and balmy breezes of Bermuda—when life out of doors is a perennial pleasure—is a change so great that many fail to realize it, and nothing less than a personal experience will convince a doubting searcher for health or pleasure that here is a charming country, where the real rivals the ideal, and where fact touches fancy, in the picture painted after conning the story of these evergreen isles.

We sailed from the streets of Gotham, and the shores of Long Island heavily mantled in wintry garb, and though head winds and high seas delayed our coming and laid some of us low, the ills that betide a luckless traveler at sea were soon forgotten—for most troubles have an ending, and sea-sickness isn't bad after its over—in the gladsome sight of emerald hills, and white-walled, white-roofed houses in their rimming of green, glistening under a sunny sky.

The first thing noted by those who have not been here for a couple of seasons is the absence of the antiquated plan for getting ashore, which once so much amused newcomers. The water at the wharf not being deep enough to allow of anchoring alongside, and the city fathers refusing to build a proper pier, two huge poles were hauled on board by steamer windlass, and along these crawled several agile ebony athletes, with cross bars and rope, lashed the bars firmly, laid planks lengthwise, and on these passengers went ashore. Now, a spacious granite quay permits close coming of steamers, and the style of disembarking is quite up to date.

The march of improvement in Hamilton has been marked during the last year or two. The most notable advance, so far as concerns the Front Street pedestrian, is the fine granite pavement that now extends the whole length of that thoroughfare. The contrast in comfort with the ancient and disreputable brick sidewalk, is one that must be felt to be appreciated. Architecturally, the forward movement has been decided, both in public and private. Of the former, in Hamilton, the most prominent relates to the House of Parliament, which has been enlarged by the addition of a colonnade on the south front, handsome arcades on the other sides, and an ornate tower, of which the most striking ob-

ject is a handsome clock made by Gillert and Johnston, of Croydon, near London. These additions had been for several years in contemplation, but the project languished till 1887 when a joint committee of the Bermuda Council and Assembly reported in its favor as the most suitable Bermudian memorial of Victoria's fifty years reign, and though progress was slow the tower—which is built of the native coral with a mixture of red bricks and concrete, with terra cotta trimmings—was completed late last year, the clock put in position, and at midnight, 'twixt 1893 and 1894, the dials—each seven feet in diameter—were illuminated, and watched by a large crowd as the clock struck the closing hour and far ewell to the parting year. This clock—long waited for—is truly a timely addition to the attractions of Bermuda; and, topping the tall tower of Parliament House which is on one of the highest points in town, it makes a landmark noted for miles around. May its life be long and strikingly useful!

"All things come to him who waits," and history has repeated itself along this line to the Bermudian, native and visitor, who so long has been waiting for the finishing of the new Government House. In 1882, an Act was passed giving $40,000 for its erection. Work was begun, but the money proved not enough, and when more was asked for, it was refused. Work ceased, was resumed, again ended, and this shuttlecock sort of business went on for years, till in 1890 it was decided to carry the work to completion, and in July, 1892, the present Governor became its occupant. It is a handsome structure, Spanish in style, of which the Bermudians may well be proud, and from the towers can be had charmingly varied views that compass almost the whole country. The approaches are not yet complete, and the opportunity for some superb landscape gardening by terracing the hillside and flowering the meadow between the House and Hamilton is such an exceptionally fine one that Bermudian enterprise should forge to the front and make it what it would surely be—a thing of beauty. The old House was razed in the autumn of 1892, and the garden with the semi-tropical flowers and foliage alone remains. The houses in Bermuda are almost without exception, built of coral composing the island structure, which is white and so soft that it can be cut and trimmed with saw and chisel, but hardens promptly on exposure. The roofs are thin slates of the same material. These are annually whitewashed, and rising 'mid their emerald surroundings—the Islands are always green—give a charm to the landscape that must be seen to be appreciated. Each dwelling is required by law to be provided with a tank for rain water taken from the roof, which, with the yearly whitening insures its purity. At various places, on hillside and elsewhere, are shallow basins leading to reservoirs cut in the coral; these catch and retain the rain. There are wells, but the water is too brackish to drink. Lately, the supply has been increased by several artesian wells, the water of which is good.

The drives in Bermuda are delightful. Smooth, coral roads, with ever-varying vistas of land and ocean make them specially attractive. The service is good and cheap—one dollar the first hour and half that each after hour. The fine roads give a special charm to cycling, and lovers of this sport find the wheel an added pleasure to the winter outing.

The health of these Islands is almost always good. A healthy October presages a healthful winter. There has been no epidemic in many years. The greatest mortality is under five, and among the blacks, is due largely to neglect. The leading death cause is consumption. Births and deaths are fully recorded. The former lead. Long lives, eighty-five to ninety-five years, are not uncommon. There are nine registered medical men, besides ten Army and five Naval surgeons. There are two health officers—a post surgeon at St. George and a local one at Hamilton. A general Board of Health is composed of the Governor and Council—the latter, nine leading non-professional men. Quarantine regulations are careful and complete.

At the last session of Parliament, the question of sanitation and a remodeling of the Health Act of 1864 was debated, and the Attorney-General moved to introduce a new bill but, strange to say, the motion was lost. One of the features of the new bill was for the formation of a general Board of Health to consist of the Colonial Secretary, one member of the Council, two members of the Assembly, the senior medical officer of the Army and of the Navy, three civilian doctors and a resident physician who was to be sanitary inspector, clerk to the general board, adviser to the local boards, and also superintendent of the insane asylum, and health officer for Hamilton; not to engage in private practice, and to have a salary of $2,000. Later in the session, a bill was introduced to import from England a portable steam disinfecting apparatus but this also failed. Quite likely another bill will be presented at the session of the Assembly next May.

La grippe has prevailed quite extensively in the south and west of the country since January, but few were fatal. The health of the troops stands high. The new army hospital—north of Camp Prospect on high ground, apart from the barracks—was completed and occupied towards the close of 1892. Every advanced sanitary appliance is to be found there, and there is a separate building for infectious diseases.

Through the efforts of Dr. Harvey—one of the leading medical men of Bermuda—a cottage hospital has been erected about a half mile from Hamilton and is now open, in charge of two women graduates of American training schools. Nine-tenths of its cost was given by Americans. It may prove of much value should contagious disease occur among visitors. The nurses are at command of any one in Bermuda, when not on duty at the hospital, and their skilled service may be a boon to many. Great credit is due Dr. Harvey for this good work. The Doctor who is also Medical Director of the Bermuda Insane Asylum, has been giving a course of lectures on sanitary subjects, and is now engaged in a scheme for promoting the sewerage system of Hamilton.

Bermudians assert their climate the most equable in the world and temperature tables support this claim; statistics prove the winter here more even than at Los Angeles, San Diego, Jacksonville or St. Augustine. The average for the season of 1888–1889, was sixty-three; for 1889–1890, sixty-three; for 1890–1891, sixty-four—a really remarkable record. As a rule, October, November, April, May and June are most agreeable. During December, January and February often the weather much of the time is charming. A clerical friend, convalescing from acute lung disease, who came to Bermuda by my advice, in December, returned in a month, delighted with his experience having added twenty pounds to his avoirdupois, and enjoyed the luxury of an ocean bath on Christmas. March is the worst month when east winds, low barometer and thermometer and frequent showers are apt to prevail. The porous soil admits of outings soon after a heavy rain. As in England, mornings often betoken a stormy day, but the clouds roll by to a beautiful afternoon. July and August, to the "outside barbarian" are too warm for his liking, and September, with its sultry breezeless days is most oppressive of all. May and June, as regards floral beauty of forest and field, offer special attractions, but Fashion at present has decreed that, during March the full tide of travel shall crowd steamers, hotels and boarding houses to discomfort. The highest pleasure

and good from a sojourn in this lovely little land will never be found till this senseless fad has had its day.

Twenty-four of the twenty-six who came with me are here for the first time, and all have reason to felicitate themselves, for the weather, fine on arrival has bettered till now it is truly ideal. A lucky lot, indeed, we are, for Jupiter Pluvius has been in one of his kindliest moods, and only one day of the now nearing a dozen, has he showered upon us enough to prevent our usual daily outing.

And, too, what a charming contrast along thermal lines, for while you luckless mortals have been wrestling with the cold, and shivering and shaking in an effort to keep warm, we last Sunday went to the garrison service, at Camp Prospect in open carriages, and at its close sat in them with the sun streaming on us and listened to a delightful open air sacred concert, given by the regimental band of sixty pieces on the sward of a cedar grove near the Camp. Such a story—which may seem like a fairy tale—will give some idea of the changed conditions as regards winter comfort that obtain less than two days sail from New York, and which, well appreciated, must convince those seeking health or pleasure that Bermuda is one of the most charming winter marine resorts in the world, and as to ease of access for Americans without a peer.

The *Trinidad*, newly equipped, made her first trip from New York this year in forty-six and one-half hours. This will be welcome news to many, who, like the writer, enjoy an outing here, and must tend to make the travel tide hither higher than it has ever been; and when, as is expected, a still swifter steamer is put on the line, there is reason to think the voyage can be made in thirty-six to forty hours. Then, indeed, will those seeking surcease from toil with surroundings that tend quickly to rest and restore, find this boon almost at their doors; for to the writer—here for the fifth time, and who again and again has been abroad—Bermuda is the most restful place on earth. And where a people so much in need of such bounty as Americans? Where a folk, so many of whom are rushing along at "the pace that kills?" Almost tumbling over each other in their haste for fame or fortune, and so making themselves victims of tire and insomnia, who here might "throw physic to the dogs," and get that which, more than drugs or doctors, will give them a new lease of life and so add to happiness and length of days.

This is a typically Bermudian day. A gentle sou'west wind is blowing; bright sunshine, the balmy air laden with life's elixir, which blows so often over this favored isle, and song of birds blend to make alluring the matchless beauty of a land so unlike our own. A well-known man lately here, told a friend of ours that he had found the Garden of Eden. It is a Paradise for many—*not all*, for there are those who should keep well away from Bermuda. It is *not* the place for *consumptives*, or any far along in wasting disease. But for those battling with neuralgia, or coming back to health from acute illness or *narcotic disease*, it is, in truth, a happy land; and for many hapless mortals tossing in wakeful nights it is a peerless place in which to woo and win the good angel of sleep. For the worn and weary, for tired pilgrims along any line, be it of brain or brawn, it is a Mecca to which they can come with high hopes of getting rest and relief.

It seems strange more do not come here. The fact is, few realize that forty-eight hours from New York is an elysium where frost and the white mantle of winter are unknown; where roses bloom the year round out of doors; and where the sleep-giving, health-bringing breezes, the panoramic beauty of sea and shore, and the quiet, restful, lotus-land alike combine to make halcyon days.

Bermuda is good, too, for those not ill. Let the busy American doctor make a break in his over-active life, take a a fortnight off and a ten days' sojourn in these sun-lit isles, and my word for it—if conditions favor—he will lay up a store of happy memories for many a time to come.

J. B. Mattison, M.D.

In Opposition to Woman Doctors in Insane Asylums.

Richmond, Va., March 19, 1894.

To the Editor:—You refer in a late issue to the contest in our late Legislature on the "Woman Doctor Bill." Two years ago the lower House passed a bill unanimously compelling the Board of Directors of each insane asylum to put one woman doctor in office for each institution. This bill was defeated in the Senate, though every newspaper in this city and many in the country were heartily in favor of it. We had it "hot and heavy" in the newspapers. Men and women abused me pretty roundly for my opposition. I think I wrote a dozen letters in the papers against it. The asylum influence was very great against it, and but for this help I would have been badly whipped. In the last two years I have given this subject a great deal of thought and observation, wrote my pamphlet on "Woman's Place," published 1,000 copies of it and sent most of the members of the last Legislature copies, and I determined to go before the House Committee on Asylums this year and fight it at the start. My friend, Dr. Hunter McGuire, was on the other side of the question. As you know, he is a man of great influence here. He made as good a speech as any man could make on the wrong side of a question—spoke of the trained nurses in his Hospital (St. Luke's); what "deft fingers" the girls had, how readily they stopped hemorrhages, etc. In reply, I asked my friend: "What would St. Luke's be without Hunter McGuire?" He replied: "Nothing." The Committee was nine to one, and I hope this will end the question in Virginia for years, though the papers say not.

Before this meeting of the Committee I had been interviewing some of our best and most intelligent ladies on this question. To my surprise I found they took this ground, absurd as most intelligent *Christian* men would, at first sight, regard it. Said they: "If I were a doctor and a young girl, especially the daughter of a friend of mine, were to come to me and say: 'Doctor, I have been deceived by a young man and am in 'family way;' do relieve me for my dear mother and sisters' sake!' I would certainly relieve her." I said: "Madam, you would be sent to the penitentiary by the laws of Virginia, and would, in the eyes of God be committing murder." But they replied: "You men made these laws, and they are unjust. Men go *everywhere*, where they please, and don't lose caste; shall a girl for one offense, for trusting to one of you men whom she supposed had some regard for his oft-repeated oath of undying devotion, 'slip up;' be doomed to everlasting ruin and disgrace! Where is the sin? As to God's judgments, you are a poor teacher to warn women against them." You will see this argument has the semblance of truth in it, and I find it satisfies women of intelligence.

We are standing, Mr. Editor, upon the mouth of a volcano wider than Vesuvius. For years, in the North, married women have been using the *preventive* treatment against children, and I find it is spreading South. Two of my patients, both married women and pretty well to do, in the past month asked me to produce abortion; one upon the flimsy excuse that she had contemplated a visit to another State this summer. For promptly refusing she dismissed me. One lady I refused last year, went to Washington for the purpose, and came near losing her life. There may be o mestic, national sins more dire in the sight of God than

political offenses; and I want the medical profession throughout the whole Union to set their faces first, against the woman doctor, and against the God-defying and law-breaking male doctor who will sell his soul to the devil for five or twenty dollars.

In the "Institute" referred to in the sad Breckenridge scandal, we have a glimpse into what will happen in this country when it is filled with hospitals of this kind run by women doctors of the class named. A refuge for women of all kinds, and run in the interest, not of *science or humanity*, but of greed for gain.

By the way, I send you a clipping of a brief letter of mine published yesterday (the last shot, I hope) from one of our leading papers. The fair correspondent referred to abused me pretty roundly as selfish, jealous, etc.

"THE WOMAN DOCTOR'S BILL.

RICHMOND, VA., March 5, 1894.

"*To the Editor of the Dispatch:*

"A fair writer in the *Times* recently made quite a free use of my name, motives, intelligence, etc., in reference to the 'Woman Doctor' in the insane asylums.

The gentleman from whom she received her information of the night's session of the Committee on Asylums has done me injustice, of course not by design. I said: 'There were one or two mean, venal doctors (men, of course), in Richmond, I would like to send to the penitentiary for violating law, but if a woman doctor violated law it would not be for money, but from kind womanly sympathy.' I sent the fair correspondent a copy of my pamphlet on 'Woman's Place,' which I hope she will be kind enough to read, and I will be glad to have her criticism, either private or public. I also refer her to my letter to the State, in reference to my high respect for women. Perhaps, being her senior, I may be allowed to caution her lest she violate God's law in judging my motives.

Fully one-third of my past forty-five years' medical life has been given to the service of poor women and their children, without money or price. This regard for women runs through the lengthy pamphlet I send you. Since coming to my majority I have always and everywhere taught that a man is not worthy of the name, who would not willingly die for mother, wife, sister, daughter, aye for any woman, however poor or humble, who claimed his protection. This is not mere theory, as I can prove. On one occasion I nearly lost my life for a very poor woman, no kin to me. Can better evidence be given of my love and admiration?"

Respectfully, W. W. PARKER.

He Very Properly Calls Medicus to Order.

MILWAUKEE, March 25, 1894.

To the Editor:—As a member of the AMERICAN MEDICAL ASSOCIATION and a Jew, I desire to enter an emphatic protest against the dragging of questions of race and religion into the discussion of a matter of business policy, as is done by "Medicus" in the JOURNAL of March 24. The fact that the gentlemen specified as Solomon and Isaac chose to differ from "Medicus" does not justify the wholesale and thinly veiled charge of hypocrisy and dishonesty, worthy only of a fifth rate political sheet, which is made in that letter.

Unless it is the policy of the JOURNAL to publish *all* communications sent to it, I fail to see the justification for publishing a gratuitous insult to a class of members who happen to differ from the majority in creed. A note suggests that the matter be settled on the floor of the ASSOCIATION. Surely no presiding officer, *of any respectable* body, would allow such language to be used in debate.

If the ASSOCIATION is not broad enough to cover all reputable medical men without reference to race or creed, the sooner we know it the better.

G. J. KAUMHEIMER, M.D.

[The right of every member to have his say is recognized, and the editor joins Dr. Kaumheimer in expressing the hope that all personalities may be eliminated from this discussion, as they will not be printed].

Stands by Dr. Cohen.

BOSTON, March 26, 1894.

To the Editor:—I can not conceive how you permitted the publication of the contemptible, narrow and insulting letter signed "Medicus." He may well stay in the background by keeping his name away from the public—cowardice is depicted in every line. I am inclined to think that "Medicus" has ill feelings against Prof. Solomon Cohen for reasons known to himself—he was probably plucked by Dr. Cohen for deficiency in the subject that Dr. Cohen lectures on?

I will not attempt to discuss the "advertising question," for you have requested the matter to end.

The publication of the vile letter has, and will excite bitter criticism.

It is unnecessary for me to speak in defense of Dr. Cohen and the Hebrew race.

Hoping you will find space to publish this brief note, so that "Medicus" can see what repute he has gained by making a ferocious attack on many of the noble and leading physicians of our country.

S. GOODMAN, M.D.

Attacks Our Exchanges.

PHILADELPHIA, March 21, 1891.

To the Editor:—I write to endorse Dr. Cohen and the Code, but I go further: I would not receive or quote from any journal that publishes advertisements of the character condemned by Dr. Cohen. My proposition is that no ASSOCIATION money shall be paid for printing a journal to be given in exchange to any journal that prostitutes itself by publishing the vile advertisements in question. Let us fight this thing to the finish. PRO-COHEN.

Endorses the Code and Dr. Cohen.

SAN JOSE, CAL., March 23, 1894.

To the Editor:—I write to endorse the article written sometime since, by Dr. N. S. Davis, of Chicago, on revision of the Code and the proposed changes in the constitution of the AMERICAN MEDICAL ASSOCIATION. Every word in that article is true, and it should be carefully read by every member of the ASSOCIATION. That article has not been answered, but I presume there will be an effort made to patch up the walls that have been knocked down by Dr. Davis just before the meeting in San Francisco.

I also endorse the remarks of Dr. S. Solis-Cohen and Dr. W. P. Howle. JOHN WRIGHT, M.D.

BOOK NOTICES.

A Text-Book of Diseases of the Ear and Adjacent Organs. By DR. ADAM POLITZER, Imperial Royal Professor of Aural Therapeutics in the University of Vienna, Chief of the Imperial-Royal University Clinic for Diseases of the Ear in the General Hospital, Vienna. Translated into English from the third and revised German edition, by OSCAR DODD, M.D., Clinical Instructor in Diseases of the Eye and Ear, College of Physicians and Surgeons, Chicago. Edited by SIR WILLIAM DALBY, F. R. C. S., M.B., Consulting Aural Surgeon to St. George's Hospital, London. In one large octavo volume of 748 pages, with 330 original illustrations. Cloth, $5.50. Philadelphia: Lea Brothers & Co. 1894.

The writings of Adam Politzer on the ear are held in high authority throughout the civilized world, and this text-book has for many years been considered his best. In this edition much space and attention have been given to intra-cranial diseases of otitic origin, such as subdural abscess, otitic meningitis, sinus-phlebitis, etc. The operative treatment of thrombosis of the transverse sinus is, according to the author much simpler than opening of intra-cranial abscess. The operation is thus performed: "After chiseling away the mastoid process, and carefully removing all diseased portions, the sinus is laid free. After this is done one should examine to see if the wall of the vein has the normal dark blue color, or if it is inflamed, thickened, covered with exudate, whether it pulsates or not, and whether it is soft or hard to the touch. Want of pulsation, and resistance leads

one to think of thrombus. Fluctuation with want of pulsation, should lead one to think of purulent or sanious degeneration."

He may then explore with a Pravaz or open the sinus by a vertical incision according to Lane's method. If the thrombus extend into the jugular, the author recommends the method of Rushton Parker, an incision through the skin into the jugular, and afterwards applying a ligature.

Lectures on Auto-Intoxication in Disease, or Self-Poisoning of the Individual. By CH. BOUCHARD, Professor of Pathology and Therapeutics, Member of the Academy of Medicine and Physician to the Hospitals, Paris. Translated, with a Preface, by THOMAS OLIVER, M.A., M.D., F.R.C.P., Professor of Physiology, University of Durham; Physician to the Royal Infirmary, Newcastle-upon-Tyne; and Examiner in Physiology, Conjoint Board of England. In one octavo volume; 302 pages. Extra cloth, $1.75 net. Philadelphia and Chicago: The F. A. Davis Co., Publishers.

This volume deals with the toxines. Pathogenic processes generally; elimination of poisons; preliminaries to the study of the toxicity of emunctory products; intestinal antisepsis, and of various diseases due to bacillary products. The whole a series of lectures.

The author begins with the assertion that in this age Medicine has changed her attitude of observation. For a considerable time the chemical division of Bacteriology has been making great advances, and to-day the chemistry of the microbic products is the most important subject in connection with the subject. The author informs us that the healthy man is "both a receptacle and a laboratory of poisons. He receives them in his food, he creates them by disassimilation, and he forms them in his secretions. The human body is the theater of the toxic elaborations carried on by the normal microbes which constantly inhabit the alimentary canal."

The Dispensatory of the United States of America. By DR. GEO. B. WOOD and DR. FRANKLIN BACHE. Seventeenth edition by H. C. WOOD, M.D., L.L.D., JOSEPH P. REMINGTON, Ph.M., F.C.S., and SAMUEL P. SADTLER, Ph.D., F.C.S. Pp. 1930. Bds. Philadelphia: J. B. Lippincott Company. 1894.

This well-known and standard treatise needs no introduction to the readers of the JOURNAL. When a book has passed to its seventeenth edition it has passed beyond the power of the reviewer to affect its standing. It therefore only remains to inquire how fully the last edition has kept pace with the advance of pharmacy since the issue of its immediate predecessors which have justly made the work famous. In this respect we can truly say that no pains have been spared to insure accuracy and completeness. It is somewhat unfortunate that the metric or decimal system should be given a secondary place in giving the doses of drugs, and this conservatism seems to have no reasonable excuse, inasmuch as the "National Dispensatory" and the Pharmacopœia itself practically recognized no other system. Notwithstanding this defect, the book will continue to be as it has in the past the standard authority on this subject.

Transactions of the American Pediatric Society, 5th Session, held at West Point, N. Y., May 24, 25 and 26, 1893. Edited by M. CRANDALL, M.D. Vol. V. New York: Printed by Bailey & Fairchild. 1893.

This volume contains a list of the officers and members, and the papers read at the last meeting of the Society. Most of them have been printed elsewhere. Those interested in the diseases of children will find much that is interesting and instructive in this volume.

Congenital Affections of the Heart. By GEORGE CARPENTER. M.D. 16 mo., cl., pp. 103. London: John Bale & Sons. 1894.

This little volume is well written and handsomely printed in clear type, and includes the essentials of the subject, which has not up to this time received very much attention. It will be found very instructive.

Tables and Notes on Human Osteology, for the Use of Students of Medicine. By SEBASTIAN J. WIMMER, M.A., M.D. With a preface by PROF. WILLIAM F. WAUGH, A.M., M.D. 16 mo., pp. 239. Philadelphia: Medical Publishing Company. 1894.

The author has compressed in a compact and convenient volume a careful compilation of the essentials of Osteology. In Dr. Waugh's preface he gives his opinion that this book is "the ideal help to the student in term time," and on examination we concur in his judgment. We find a tabulated summary of all the points to be memorized, arranged in such a way that it can not fail to be of service to the student.

Bulletin of the Harvard Medical Alumni Association, No. 5. Report of third annual meeting, held in Boston, June 27, 1893. Boston: Published by the Association. 1893.

This is a beautifully printed volume, gives the minutes of the last annual meeting and the speeches made at the annual dinner. On this occasion Dr. J. R. Chadwick presided. His presidential address contains valuable historical material. Drs. J. M. DaCosta, Abram Jacobi and W. S. Chaplin made speeches of interest.

NECROLOGY.

JOHN H. RAUCH, M.D., in Lebanon, Pa., March 24. Dr. Rauch was born in Lebanon, Pa., Sept. 4, 1828. He was graduated in medicine at the University of Pennsylvania in 1849. The following year he settled in Burlington, Iowa. His mind early turned toward natural sciences, and he became a private pupil of Prof. Louis Agassiz of Harvard College, and lived for some time in his family. In 1850, on the organization of the State Medical Society, he was appointed to report on the "Medical and Economic Botany of Iowa," and his report was published. He was an active member of the Iowa Historical and Geological Institute, and made a collection of material—especially ichthyologic—from the Upper Missouri and Mississippi Rivers for Prof. Agassiz, a description of which was published in *Silliman's Journal* in 1855. In 1857 he was appointed Professor of Materia Medica and Medical Botany in Rush Medical Collge, Chicago, which chair he filled for the next three years. In 1859 he was one of the organizers of the Chicago College of Pharmacy, and filled its chair of materia medica and medical botany. During the Civil War he served as Assistant Medical Director of the Army of Virginia and later in Louisiana. At the close of the war he was breveted Lieutenant-Colonel. On his return to Chicago, Dr. Rauch published a paper on "Intramural Interments and Their Influence on Health and Epidemics." He aided in reorganizing the health service of the city, and, in 1867, was appointed a member of the Board of Health and Sanitary Superintendent, which office he filled until 1873. During his incumbency the great fire occurred, and the task of organizing and enforcing the sanitary measures for the welfare of 112,000 homeless men, women and children devolved upon him. In 1876 he was elected President of the American Public Health Association, and delivered the annual address on the "Sanitary Problems of Chicago," at the 1877 meeting of the Association. When the Illinois State Board of Health was created in 1877, Dr. Rauch was appointed one of its members, and was elected its first President. In 1878–'79 the yellow fever epidemic in the Southwest engaged his attention, resulting in the formation of the Sanitary Council of the Mississippi Valley and the establishment of the river inspection service of the National Board of Health. His investigations on the relations of smallpox to foreign immigration were embodied in an address delivered before the National Conference of the State Board of Health at St. Louis in 1884. In 1887 he published the preliminary results of his investigations into the character of the water supplies of Illinois. In 1888 he published a report on the quarantines of the Atlantic and Gulf coasts, and in 1892 he assisted ex-Surgeon-General Hamilton in the establishment and equipment of Camp Low, quarantine sta-

tion. Dr. Rauch was the author of monographs chiefly in the domain of sanitary science and preventive medicine. His chief work as a writer is embodied in the reports of the Illinois State Board of Health in eight volumes.

Frank P. Yetter, M.D., of Bowmansville, Pa., March 4.—John T. Liston, M.D., of Bunker Hill, Ind., aged 90. He is said to have built the first log cabin in the Wabash Valley.—James F. Bailey, M.D., of Cincinnati, March 16, aged 55. He was recently a member of the Ohio Legislature, and the author of the "Bailey Primary Election Law," which is a great improvement in securing purity in elections.—Geo. W. Norton, M.D., at Earlville, Ill., March 7, aged 90. He had resided in the vicinity since 1846.—F. G. Payn, M.D., of Bergen Point, N. J., March 5, aged 70. He was born in England, and practiced in Bayonne and Jersey City since 1856.—J. P. S. Roberts, M.D., of Bairdstown, Mo.—H. S. Cox, M.D., of Columbia, Tenn., March 8.—W. S. Irwin, M. D., of Louisville, Ky., March 8.—W. C. Hardin, M.D., of Louisiana, Mo., March 12, aged 88.—Anson Amesbury Ransom, M.D., of South Orange, N. J., March 11, aged 71. He was a graduate of the University of the City of New York —J. P. Wallace, M.D., of Greeley, Col., a graduate of Bellevue (1875), March 11, aged 45.—G. H. Peebles, M.D., of Lincoln, Neb., March 15, aged 53 years. He was a graduate of Rush Medical College, class of 1863.—Reuben A. Vance, M.D., of Cleveland, Ohio, March 19.—Wm. C. Cole, M.D., of Fountain County, Ind., March 11.—Abram Sellers, M.D., of Lebanon, Ky., March 13, aged 87.—J. M. Bryan, M.D., of Philadelphia, March 14. He was a graduate of the University of Pennsylvania, class of 1892.—B. F. Hopkins, M.D., Rapatee, Ill., March 4, aged 43.—Eustace W. Fisher, M. D., of New York city, March 5, aged 51 —Charles Devol, M.D., of Albany, N. Y., March 5, aged 85. He was a graduate of Fairfield Medical College, class of 1831. Five years later he became a Methodist preacher but resumed the practice of medicine in 1855. He was devoted to the service of the poor.—Clarence E. Riggs, M.D., of New Orleans, March 14. aged 27. He was graduated at Tulane University.—H. J. Webb, M.D., of Pullman, Washington, March 4. He was one of the oldest and best-known physicians of Eastern Washington.

ASSOCIATION NEWS.

The Association Train will leave Chicago Monday, May 28, via Santa Fe R. R., Rio Grande Western, and Southern Pacific, for San Francisco via Denver, Colorado Springs, Leadville, Manitou, Glenwood Springs, Salt Lake, Ogden, Truckee and Sacramento. Returning, after the meeting, the train will pass through Sacramento and Northern California to Portland, thence east by way of the Northern Pacific R. R. to St. Paul. C. M. & St.P. R. St. Paul to Chicago. A stop over at Yellowstone National Park for those who desire it has been arranged, and it has been understood that at several places on the journey there will be short stops. President Hibberd's party in a special car join the train at Chicago, and the St. Louis party are expected to join at Kansas City. From all points east and south, concentrating on this train should be effected at Chicago and St. Louis. For all information relating to this train, fares, etc., address J. M. Connell, 212 Clark st., Chicago, or any agent of Santa Fe line in other cities. Rates promised are the lowest excursion rates at time of departure.

This is the only route on which arrangements have been perfected by the Trustees.

Section on Physiology and Dietetics.—*To the Editor:*—I present to you the following announcement to the members of the Association apropos to the Section on Physiology and Dietetics prepared by the Secretary of the Section, Dr. Ephraim Cutter.

I earnestly commend the Section to all members of the Association interested in the subject, and indulge the personal hope that there will be a hearty response in the way of titles of papers sent immediately to Dr. Cutter. Very respectfully yours, I. N. Love, M.D., Chairman.

New York, Feb. 10, 1894.

Section on Physiology and Dietetics.

To the Members of the American Medical Association:—

This Section should be a mirror of your 1894 knowledge. It is believed there is something to mirror where American facts and ideas have precedence. Those who look for such facts and find foreign ones in their place, are disappointed. You must not say that there are no American facts. The number of medical ideas annually dying with their possessors is not small, as we judge. This Section is to rescue moritural and non-moritural dietetic and physiologic facts, no matter if they are little. A drop of water is a little thing. Yet vast oceans are made up of drops. To assist in this work you are hereby requested to give your contributions to any of the following subjects:

PHYSIOLOGY.

"Are the Eustachian Pharyngeal Orifices Closed or Open?" "Physiology of a Larynxless Voice." (Prof. S. Solis-Cohen invited); "Musical Action in Man and Animals;" "Love as Healthful Affection;" "Digestive Leucocytosis;" "Functions of an Undeveloped Clitoris;" "Physiologic Action of Hot Water Drafts;" "Impression of Traits of Character of the Father at the Time of Conception on the Offspring;" "Physiology of Dynamos; or: Life a Question of Expenditure of Vital Force;" "Physiologic Effects of Galvanism;" "Is the Seat of the Soul in the Lamina Terminalis?" "Physiologic Significance of Anencephalous Babes;' "Is the Unborn Babe at Term Capable of Thought or Knowledge?" "Penal Physiology;" "Fashion vs. Physiology among Women;"

DIETETICS.

"Relations of Food to Insanity; *a*, Fatty Degeneration; *b*, Embolism; *c*, Difficult Digestion;" "Is Cancer Caused by the want of Proper Feeding?" "Air as Food;" "Good Bread;" "Food vs. the Knife in the Treatment of Cancer of Breast;" "Is Cookery Drudgery and Degrading?" "Peanuts as Food in Fatty Degeneration;" "The Microscope and Food;" "Restaurants Fixed and Mobile;" "Voice and Food;" "Food vs. Resection of Ribs in Chronic Pleurisy;" "Dietetic and Cardiac Concretions sometimes called Polypi and Food;" "Relations to Physicians of Cooking Schools;" "Are there not Close Relations of Food to Leprosy?" "A Poor Single Food may be better than many Good Foods Eaten at One Time Indiscriminately;" "The Formation of Alcohol in the Alimentary Canal from Fermenting Food;" "Distilled Water as Food;" "Cow's Milk as Sole Food for Adult Man;" "Dietetics and Epilepsy;" "Dietetics and Baldness;" "Dietetics and Teeth;" "Is Promiscuous and Hearty Feeding the best for Health?" "Living to Eat and Eating to Live;" "Dietetics changing Funerals to Weddings;" "Dietetics and Fibroid Strictures and Thickening of the Alimentary Canal;" "Ought the American Medical Association to Advertise Common Flour as a Royal Therapeutic Dietetic?" "Review of the Massachusetts State Board of Health Report, 1892;" "When Institutes of Technology and Schools of Mines Teach the Morphology of Foods, ought not Medical Colleges to do the Same?" "Foul Diseases that Masquerade under other Names;" "Does the Climate (Air Food) of San Diego Cure Bright's Disease of the Kidneys?" "Food and Calculi;" "Food and Atheroma;" "Food and Amyloid Degeneration;" "Food and Inflammation;" "Popular Food Ideas that have Slain Thousands;" "Dietetics and Religion;" "Dietetics and Male Neurasthenia;" "Why should not Government Protect the Food of Man as it does the Food of Plants?" "Watts, Applied to Food: 'Each pleasure has its poison too, and every sweet a snare;'" "Consumption of the Bowels and Food;" "Food and Colloid Feces or Amœba Coli;" "Food and Heart Disease;" "Food and Skin Diseases;" "Food and the Type of Disease;" Food and the Exanthemata;" "A New Army and Navy Ration;" "Does Sea Air contain more Mineral Food than in Land Air?" "Diet and Seasickness;" "Diet and Defective Hearing;" "Diet and Ophthalmology;" "Oatmeal—Objections to as a Food for Man;" "Vegetable vs. Animal Food;" "Food and Nerve Diseases;" "Food and Nasal Catarrhs;" "Dietetic Importance of a National Secretary of Health;" "Importance of the Pure Food Bill now before Congress;" "Importance of Freshness in Food from the Botanic Kingdom;" "Impure Water for Ships;" "Why are Gruels Good Food?" "Diet Treatment of Bright's Disease." (Signed.)

I. N. Love, Chairman,
Ephraim Cutter, Secretary.

SOCIETY NEWS.

International Medical Congress.—It is stated that about 200 American physicians will attend the International Medical Congress at Rome. There were over 600 at Berlin.

The Herkimer County (N. Y.) Medical Society has elected the following officers: President, Dr. Cyrus Kay, Jr.; Secretary, Dr. A. W. Suiter; Treasurer, Dr. Graves. The other officers of last year were reëlected.

Have Societies Named for Them.—The Philadelphia brethren are having a mild epidemic of new medical societies, named for favorites; they now have medical societies respectively named for Prof. Hobart A. Hare, Prof. L. Webster Fox, Prof. Wm. E. Ashton and Prof. Jas. M. Anders.

Lancaster City and County Medical Society.—At the last meeting of the Lancaster (Pa.) City and County Medical Society an interesting paper was read by C. M. Franklyn, M.D. on "Fractures of the Skull." Cases were reported by Drs. Welchans, Brenholtz, Craig, Roebuck, Ziegler, and Miller.

An Old University.—Don Juan Ortega Rubia says in the *Revista Contemporanea*, Madrid, that "one of the oldest seats of learning in Europe, the University of Valladolid, celebrated recently its sixth centennial as an established university. In 1293 King Sancho IV of Castile and Leon gave charter to this school. But it had been in existence long before the Christian era."

Michigan Surgical and Pathological Society.—At the annual meeting of the Michigan Surgical and Pathological Society the following officers were elected: President, Dr. E. W. Jenks; Vice-President, George Kirker; Secretary, J. A. Patton; Treasurer, Dayton Parker. The latter was the retiring President, and he tendered the members a banquet at the conclusion of the meeting, which lasted until a late hour. Toasts were responded to by Drs. Jenks, Kirker, Hough, Hamlin, Milligan, Maier, Ahlborn, Ranpier, Leadbeater and Alderman.

The Northern District Medical Society met in Woodland, Cal., March 13. The Yolo Medical Society entertained the members at a banquet. Following is the program:

"A Case of Procursive Epilepsy," A.W. Hoisholt, Stockton. Discussion opened by Elmer E. Stone, Marysville.

"Diphtheria," Oscar Stansburry, Chico. Discussion opened by C. H. Gibbons, Arbuckle.

"Gastric Ulcer," W. E. Bates, Davisville. Discussion opened by B. Caldwell, Biggs.

"The Decline of Maternity," David Powell, Marysville. Discussion opened by J. H. Parkinson, Sacramento.

"The Foothills of the Sierra Nevada Mountains in the Climatic Treatment of Bronchial and of Pulmonary Affections," R. F. Rooney, Auburn.

"The Causes and Treatment of Abortion," W. R. Cleveland, Biggs. Discussion opened by Thomas Ross, Sacramento.

"Some Peculiar Effects of La Grippe," H. D. Lawhead, Woodland.

"The Treatment of Venereal Diseases," W. J. Hanna, Sacramento.

The following are the present officers of the Society: President, Wallace A. Briggs; First Vice-President, J. R. Rooney; Second Vice-President, F. W. Benjamin; Third Vice-President, A. T. Hudson; Secretary, Elmer E. Stone; Treasurer, Oscar Stansburry. Board of Censors: W.A. Briggs, Chairman; G. W. Stratton, T. B. Reardan, W. E. Bates and Louis Melton.

The Indian Medical Congress.—The proposal to have a Medical Congress in India was considered at a meeting of the Council of the Calcutta Medical Society on January 24, when it was decided that an "Indian Medical Congress" shall be held in Calcutta at the beginning of January, 1895. The preliminary arrangements were discussed and a general plan sketched out. It was decided that in each province local secretaries, native as well as European, should be asked to coöperate with the Calcutta secretaries, and it was further decided that the sections into which the Congress should be divided should be:

1. Medicine including Pathology.
2. Surgery.
3. Obstetrics and Diseases of Women and Children.
4. Public Health.
5. Medico-legal Medicine and allied subjects.

Further details will be given in a future issue. It was decided that the Congress should be widely advertised, and that all medical men practicing in every part of the world, but especially in India and the East, should be invited to take part in it and submit papers to be read in the different sections.—*Indian Medical Gazette.*

Medical Society of the Missouri Valley.—The sixth semi-annual convention of the Medical Society of the Missouri Valley met at Omaha March 16.

President Jonas of Omaha, called the meeting to order at 9:30 o'clock. The registration and payment of dues followed. The Committee on Credentials made its report, which was adopted. Secretary Thomas of Council Bluffs, read the minutes of the last meeting, which were approved without discussion. Miscellaneous business and reports of committees followed. Several new members were admitted.

Dr. F. M. Hiett of Red Oak, Iowa, read an interesting paper on "Safe Anesthesia."

Dr. A. S. Mansfelde of Ashland, Neb., read a paper regarding "Brain Bruise—Contusion Without Hemorrhage;" Dr. Foote followed with "Cell Selections—Auto-infection"

Dr. Lanphear of Kansas City, who was on the program for a paper on "Vaginal Hysterectomy Without Clamps or Ligatures," asked for further time and he presented his paper in the afternoon.

Dr. J. M. Barstow of Council Bluffs, read an interesting paper on "Gasoline Poisoning," which was thoroughly discussed.

"Pulmonary Embolism" received the attention of Dr. Lowry of Lincoln.

The convention adjourned for lunch and reassembled at 2 o'clock, when the reading and discussion of papers was resumed.

The present Society was organized six years ago at Council Bluffs, and has 150 members, composed of the medical fraternity of Omaha, Council Bluffs, Sioux City, St. Joseph, Kansas City and other points in the Missouri Valley. The object of its organization was to foster acquaintance and meet semi-annually for the discussion of subjects of interest to the medical profession.

In the evening the doctors gave a banquet at the Commercial Club. Plates were laid for 100. The tables were artistically decorated with flowers and potted plants.

The following were the toasts: "The Doctor in Literature," Dr. Lowry of Lincoln; "Medical Education in the West," Dr. Bridges of Omaha; "Medical Charlatanry," Dr. Coulter of Omaha; "Post-Graduate Medical Education," Dr. Emmert of Atlantic, Iowa; "Women in Medicine," Dr. Van Mansfelde of Ashland; "The Physician and the Public," Dr. Gibbs of Omaha; "The Doctor in Politics," Dr. Macrae of Council Bluffs.

Association of American Physicians.—Preliminary program of the ninth annual meeting of the Association of American Physicians to be held in Hall No. 2, Columbian University, corner of Fifteenth and H Streets, Washington, D.C., on the mornings of May 29, 30, 31, and June 1, 1894.

President's Address, R. H. Fitz; "Some Researches in the Significance of Albumen and Casts, especially in those Past Middle Life," Fred'k C. Shattuck; "Some of the Chemic and Bacteriologic Characteristics of Milk," Thomas M. Rotch; "The Chemic Products of the Anærobic Putrefaction of Pancreatic and Hepatic Tissues, and their Effects upon the Tests for Morphia," Victor C. Vaughan; "The Effect of Various Metals on the Growth of Pathogenic Bacteria," Meade Bolton; "Dr. S. C. Martin's Researches on the Bacteria, of Vaccinia," Harold C. Ernst; "Note on the Observation of Malarial Organisms in Connection with Typhoid Fever," W.

Gilman Thompson; "Experiments in Artificial Melanosis," George Dock; "The Mild Character and Diminished Prevalence of Syphilis and the Infrequency of Visceral Syphilis," John H. Musser; "A Case of Osteomalacia," George Dock; "The Treatment of Typhoid Fever," Samuel A. Fisk; "The Treatment of Certain Symptoms of Croupous Pneumonia, particularly in Adults," Beverly Robinson; "A Study of the Temperature in Cerebral Apoplexy," Charles L. Dana; "Traumatic Headache," Charles F. Folsom; "Tetany in America," J. P. Crozer Griffith; "Clinical Report of Two Cases of Reynaud's Disease," Frederick P. Henry; "A Case of Mitral Stenosis, with great Hypertrophy of the Right Ventricle; Death from Hemoptysis," A. McPhedran; "Stomatitis Neurotica," A. Jacobi; "Nocturnal Pain in Dyspepsia," Henry M. Lyman; "Lead Palsy in Children," Wharton Sinkler; "A Report on the Ultimate Results obtained on Experimental Eye Tuberculosis by Tubercular Treatment and Preventive Inoculation," E. L. Trudeau.

The Constitution provides that papers shall not exceed thirty minutes in the reading.

The Association will hold its sessions and these papers will be read only on the mornings of May 29, 30, 31, and June 1. On the afternoons of these days the Congress of American Physicians and Surgeons will hold its sessions.

The Association of American Medical Colleges.—The fifth annual meeting of the Association of American Medical Colleges will convene at Maple Hall, Grand Pacific Hotel, San Francisco, California, at 3 o'clock, P.M., Wednesday, June 6, 1894. Action will be taken at this meeting upon the following amendments, to-wit.:

Rush Medical College, by unanimous vote, submits the following amendment to Sec. V, Art. III, of the Constitution, "providing that students who intend to graduate in 1899, or in subsequent classes, four years of medical study and an attendance upon four annual courses of lectures of not less than six months duration each will be required. Provided, that graduates of literary colleges who have taken a course of scientific studies, graduates of schools of pharmacy that require three years study and adequate preliminary education, may be admitted to the second year's work or course of lectures in the college without examination."

The present wording of Sec. V, Art. III, is as follows: "Candidates for the degree of Doctor of Medicine shall have attended three courses of graded instruction of not less than six months' duration each, in separate years."

Subsequent to the above action by Rush Medical College, upon request of the Secretary, President N. S. Davis appointed the following named persons to act as an informal committee, to, in conjunction with such other colleges as could send delegates, hold a conference and prepare for submission a schedule of requirements adapted to a four years' course: E. L. Holmes, Chairman, Rush Medical College; Reginald H. Fitz, Harvard Medical College; Victor C. Vaughan, University of Michigan; Wm. Osler, Johns Hopkins University; Wm. E. Quine, College of Physicians and Surgeons, Chicago, Ill.; P. S. Conner, Medical College of Ohio; N. S. Davis, Jr., Chicago Medical College; Dudley S. Reynolds, Hospital College of Medicine; Perry H. Millard, University of Minnesota.

The meeting was held at Chicago, February 7, twenty colleges being represented. The representatives of the colleges present were unanimously of the opinion that the present requirements of the entrance examination were not sufficiently definite, and directed that the following amendment to Sec. I, Art. III, be submitted for consideration at the forthcoming session to be held June 6: "Colleges, members of this Association, shall require of all matriculates an examination as follows: 1, an English composition in the handwriting of the applicant, of not less than two hundred words, said composition to include construction, punctuation and spelling; 2, arithmetic—fundamental rules, common and decimal fractions and ratio and proportion; 3, algebra—through quadratics; 4. physics—elementary, Gage; 5, Latin—an amount equal to one year's study as indicated in Harkness' Latin Reader."

The present wording of Sec. 1, Art. III, is as follows:

ARTICLE III, SECTION 1. Members of this Association shall require of all matriculates an English composition in the handwriting of the applicant, of not less than two hundred words, an examination by a Committee of the Faculty, or other lawfully constituted Board of Examiners, in higher arithmetic, algebra, elementary physics and Latin prose.

As a result of prolonged discussion, and upon motion of Prof. Victor C. Vaughan, the committee, by vote recommended that Sec. V, Art. III, be amended to read as follows: "Colleges, members of this Association, shall require of all applicants for the degree of M.D., attendance upon three courses of lectures of not less than eight months each, or four courses of six months each, in separate years."

Upon motion the Chair appointed the following Committee to prepare a minimum of requirements suitable to a four years' course, with instruction to submit the same in time for action at the forthcoming session: P. S. Conner, Medical College of Ohio; Victor C. Vaughan, University of Michigan; Wm. E. Quine, College Physicians and Surgeons, Chicago; N. S. Davis, Jr., Chicago Medical College; C. B. Stemen, Fort Wayne Medical College, Ind.

The above Committee unanimously recommended that the Constitution be amended by the following addition: "Colleges, members of this Association, shall require at least an amount of work in each branch as follows, to-wit.:

	Hours didactic and recitation.	Hours Laboratory
History and Embryology	50	100
Anatomy and Physiological Chemisty	150	300
Physiology	200	75
Chemistry	125	125
Materia Medica and Therapeutics	125	
Practice	200	
Surgery	200	
Regional and Operative Surgery	50	50
Obstetrics and Gynecology	150	
Ophthalmology and Otology	25	
Mental and Nervous	25	
Dermatology	25	
Bacteriology	25	150
Pathology	50	100
Physical Diagnosis	75	
Pædology	25	
Medical Jurisprudence	15	
Hygienic and State Medicine	50	
Genito-Urinary	25	
Orthopedics	25	
Laryngology	25	
Clinical Instruction		

N. S. DAVIS, M.D., L.L.D., President.
PERRY H. MILLARD, Secretary.

MISCELLANY.

Personal Notes.

DR. JOSEPH A. WHITE of Richmond, Va., was seriously injured while riding in a fox hunt, March 6.

DR. VOGAN was appointed Health Officer of Lowellville, Ohio, March 12.

DRS. FORMENTO and Harnan have been reëlected to the Louisiana Board of Health.

DR. B. C. BRETT, the President of the Wisconsin State Medical Society, has received from the Honorable the Secretary of the Treasury, a formal request for his resignation as Acting Assistant Surgeon of the Marine Hospital Service and in response has addressed the following letter:

"Your letter of February 27, asking my resignation as Acting Assistant Surgeon of the Marine Hospital Service, is received. Regarding this request as the equivalent of an order from my superior officer, I herewith respectfully comply with it."

Dr. A. W. Slaughter has been appointed to succeed Dr. Brett in the position noted.

Medical College Notes.

THE ST. LOUIS MEDICAL COLLEGE held its commencement exercises March 16, and conferred the degree of M.D., on sixteen graduates.

THE MISSOURI DENTAL COLLEGE at its commencement March 16, conferred the degree of D.D.S. on twenty-one graduates.

THE BEAUMONT MEDICAL COLLEGE of St. Louis, at its seventh annual commencement March 15, awarded diplomas to thirteen graduates.

THE TOLEDO MEDICAL COLLEGE held its thirteenth annual

commencement March 12. There were nine graduates. This college will hereafter have a four years' course.

The Ohio Medical College at Columbus held its second annual commencement March 13, and conferred the degree of M.D., on twelve graduates; there were also five graduates in pharmacy.

Hospital Notes.

New Hospital.—A new hospital is to be built at Columbia, Pa.

Nashville, Tenn.—The report of Dr. Charles Brower shows that 1,117 patients were treated in the city hospital during the past year.

Isolation Hospital.—Fond du Lac, Wis., stimulated by the appearance of smallpox in some Wisconsin towns will build an isolation hospital.

Selected a Site.—The trustees of the Reuben Noble Hospital Fund at Westfield, Mass., have selected a site for that institution, which will cost $20,000.

Differences.—There is an interesting row between the regular, "homeopathic" and "eclectic" staff at the Cook County, Ill., Hospital.

St. Boniface Hospital, Winnipeg, has been entirely reconstructed, and is now one of the best arranged Hospitals in the Dominion.

North Carolina State Hospital for the Insane.—The quarterly meeting of the North Carolina State Hospital at Morganton, was held March 1. The Hospital is overcrowded and needs enlargement.

Contagious Disease Hospitals.—The Health Board of Detroit are unanimous in recommending the establishment of a contagious disease hospital. A pest house is to be built at Columbus, Ohio, on the county infirmary grounds.

Hospital for Insane, Rochester, Minn.—Work on the rebuilding of the administration building at the State Hospital at Rochester, Minn., will begin shortly. It is to be a $60,000 improvement and will greatly improve the appearance of the building.

The Officers and Managers of the Infants' Summer Hospital, Rochester, N. Y., held their annual meeting March 12. The debt of the lakeside institution has been reduced to $1,500. The Hospital will be opened to patients at the usual time this summer. Among the officers were Dr. Edward M. Moore, Sr. and Dr. E. M. Moore, Jr.

The Flagler Hospital at Lockport, N. Y., has been made a general and emergency city hospital, the management being in the hands of a non-sectarian board of managers of twenty-one members, on which shall be represented the Mayor, the Board of Health and each of the religious denominations of the city.

The "Big Four" Will Have Nine Hospitals.—The "Big Four" Railroad has finally decided to establish hospitals at Indianapolis, St. Louis, Cairo, Kankakee, Peoria, Sandusky, Cleveland, Columbus and Cincinnati, at a total cost of $100,000. A hospital tax of 50 cents a month will be assessed on all employes receiving a monthly salary of more than $50.

The Medical Society Select the Staff.—The Macon (Georgia) Hospital has been established, and the Macon Medical Society are to furnish the medical service of the Hospital. It is a great pity that the medical staff of municipal hospitals generally are not thus selected. The societies may well be trusted to recommend efficient and capable men.

Municipal Hospital, Philadelphia.—A movement to remove the Hospital to Petty's Island is doomed to failure, owing to the difficulty of reaching the Island in winter. The Councilmen selected from the Twenty-eighth Ward where the Hospital is at present located were pledged to work for its removal, but the other councilmen object to its removal to the vicinity of their respective constituents, and so the Hospital is likely to remain where it is.

New Hospital at Baltimore.—The Faculty of Baltimore Medical College will build a new hospital this summer on the site of the Maryland General Hospital, which is to be torn down. The hospital will have a capacity of 150 beds and 20 private rooms and it is designed to be completed in December. The committee in charge of the new building are Drs. R. H. P. Ellis, R. W. Johnson, J. D. Blake and Wilmer Brinton. The physicians and surgeons composing the hospital staff are Drs. C. G. Hill, R. H. P. Ellis, David Streett, Wilmer Brinton S. K. Merrick, John D. Blake, A. C. Pole, George Reuling, R. W. Johnson, T. A. Ashby, W. T. Howard, Jr., S. T. Earle and R. B. Warfield.

Milwaukee is to have a Children's Hospital. It will be opened May 1. The following will be the medical staff:

Attending Physicians—Dr. Bennett, Dr. R. C. Brown, Dr. H. V. Ogden and Dr. S. Friend.

Surgical Staff—Dr. Ralph W. Chandler, Dr. Bryant Smith, Dr. F. Rogers and Dr. Frank Munkwitz.

Attending Oculists—Dr. Edgar H. Neyman and Dr. H. V. Würdemann.

Consulting Staff—Dr. William Fox, Dr. T. E. Wallbridge, Dr. Thomas Hay, Dr. Louis Frank (dermatologist), and Dr. Franklyn J. Tower (pathologist).

Miss Louise King, a graduate of the Illinois Training School for Nurses, will be the Superintendent of the Hospital.

Winnipeg General Hospital.—At a meeting held March 11, the attending medical staff of last year was re-appointed for the ensuing year, viz:

For the general wards—Doctors R. J. Blanchard, Jas. Patterson, J. R. Jones, H. H. Chown, H. A. Higginson and J. S. Gray.

For the isolated wards—Doctors W. J. Neilson and N. B. Gillies.

For the maternity wards—Doctors A. J. Mcdonnell and R. M. Simpson.

Specialist for diseases of the eye, ear and throat—Doctor J. W. Good.

A communication was received from the attending medical staff with reference to the terms and conditions on which patients should be received into the private wards of the Hospital. A committee of the Board was appointed to meet and confer with the medical staff in reference to this matter.

The First Hospital Car.—The Central Railroad of New Jersey has just fitted out and put into service the first hospital car in the history of railroading. It was turned out of the Ashley shops a few days and is now stationed at Mauch Chunk, Pa., ready for use. It is divided into two compartments, both of which are fitted up for hospital use. There are cots for the patients, seats, a good supply of medicines and lintels and other necessary articles for the care of the injured. The car is painted a light cream on the interior, and is made bright and cheerful. Maimed and injured patients can now be tenderly cared for, and rest as well as at home. The car was constructed at the suggestion of Mrs. Dr. Erwin of Mauch Chunk.

Kansas State Board of Health.—Dr. H. W. Roby of Topeka, (Homeop.) has been appointed a member of the Kansas State Board of Health to succeed Dr. J. P. Stewart.

Board of Health of Manitoba.—The following appointments have been made to constitute the Provincial Board of Health as re-organized at the last session of the House; James Patterson, M.D., Winnipeg; John Mackie, M.D., Portage la Prairie; Alex Flemming, M.D., Brandon; George Riddell, M.D., Crystal City; S. J. Thompson, V. S., provincial veterinarian. Dr. Patterson has been selected Chairman. The first four gentlemen are also the District Inspectors for the province. E. M. Wood has been appointed Secretary of the Board.

A Mexican Pest House.—Five American sailors have returned to this city, after an experience in a Mexican pest house that has convinced them, at least, that the Mexican quarantine officials have much to learn of sanitary regulations, as well as of the laws of humanity.

Isolated for eight days, deprived not only of liberty but of food, drink and medical attendance, to say nothing of comfort, it was fortunate that these mariners had no serious illness, otherwise the mistaken vigilance of the Mexican health officials and the indifference of the steamship company's agents might have been responsible for their deaths from exposure. The steamship *Vigilancia*, of the New York and Cuba Mail Steamship Company, more generally known as the Ward line, on February 3 last left her pier at the foot of Wall Street bound for Vera Cruz, Mexico. The *Vigilancia* had formerly been in the Rio trade, and this was her first voyage to the Mexican ports.

Shortly after the *Vigilancia* sailed, some sort of skin disease broke out among the crew and became general. It was merely an annoying rash, and is attributed to the bad condition of the bedding. Among the crew of the steamer was Albert C. Barrett of 170 East Seventy-sixth Street, who was rated on the ship's books as electrician and ice engineer. He related his experience to a reporter as follows:

"Not one of the Ward line steamers," said Mr. Barrett, "carries a doctor. They only have medicine chests, and when any of the crew is sick one of the officers prepares a dose from the chest. When this skin disease broke out, there was no one to attend to the men. When we anchored at Progreso, Mexico, on the morning of February 10, about forty men were suffering slightly with this complaint, and when the Mexican quarantine officers boarded the *Vigilancia* they were greatly scared at the thought of smallpox. The ship was quarantined for twenty-four hours, and the captain was very anxious to get away. It was finally arranged to send ashore five men as sick, and then give the ship a clean bill of health. Men were selected who could best be spared. I was one, and the others were E. T. Stilling, William Hamm, R. Caccia, cadets, and Patrick Coyle, oiler.

"We were landed on the beach over a mile from the city, and escorted to an old, tumble-down, adobe hut, with a leaky and dilapidated roof, and without doors. Here we were met by an individual who informed us in broken English that he was the Chief of Police, and that we were not to be allowed to leave the hut under any circumstances. He then left us in charge of two policemen, armed with sabres and revolvers.

"For twenty-six hours we remained in this hovel without food or water or bedding of any kind, and our repeated requests to be allowed to go to the city to see the United States Consul were refused by the guards. On the second night Coyle and myself stole away and reached Progreso without detection, and sought Mr. John Waddle, the acting United States Consular Agent. Mr. Waddle is the English Consul also, and befriended us in every way possible. He told us he could not visit our quarters without the consent of the Mexican authorities. He promised to attend to our case and we returned to the hut.

"We sent an appeal to the United States Consul and got a few things in return. We were kept in the pest-hole until February 18. Mr. Waddle saw that we were properly cared for, and February 28 we got away on our own ship, which had returned. But for the efforts of Mr. Davis and Mr. Waddle we might still be in that awful place."—*New York World.*

THE PUBLIC SERVICES.

Examinations U. S. Army Medical Corps.—In view of the possibility of the reduction of the Medical Corps of the Army from one hundred and twenty-five to ninety Assistant Surgeons, by action of Congress at its present session, and to save possible loss of time and expense to candidates if such action be taken, the examinations appointed for March and April, 1894, will, by order of the Secretary of War, not be held until further notice.

It is probable that if the Corps should not be reduced, the Examining Board will be convened in the fall of 1894. Of this, notice as early as possible will be given.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from March 18, 1894, to March 23, 1894.

Major Henry M. Cronkhite, Surgeon U. S. A., is relieved from duty at Ft. Clark, Texas, and ordered to report in person to the commanding officer, Ft. Reno, Oklahoma Ter., for duty at that post, relieving Capt. William C. Gorgas, Asst. Surgeon. Capt. Gorgas, on being thus relieved, will report in person to the commanding officer, Ft. Barrancas, Fla., for duty at that post, relieving First Lieut. Robert S. Woodson, Asst. Surgeon. First Lieut. Robert S. Woodson, Asst. Surgeon, on being relieved by Capt. Gorgas, will report in person to the commanding officer, Ft. McIntosh, Texas, for duty at that post and for field duty in the Dept. of Texas, relieving First Lieut. Benjamin L. Ten Eyck, Asst. Surgeon. Lieut. Ten Eyck, on being thus relieved, will report to the commanding officer, Ft. Clark, Texas, for temporary duty at that post.

First Lieut. Haalan E. McVay, Asst. Surgeon, so much of par. 8, S. O. 60, from A. G. O., March 12, 1894, as relates to him, is amended to direct him, on being relieved from duty at San Carlos, Ariz., by First Lieut. Straub, Asst. Surgeon, to report in person to the commanding officer, F. Huachuca, instead of Whipple Bks., Ariz.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending March 24, 1894.

Surgeon B. S. Mackie, ordered to the U. S. R. S. "Franklin."

P. A. Surgeon W. C. Braisted, from Naval Hospital, New York, and to the U. S. S. "Columbia."

P. A. Surgeon S. G. Evans, from the Naval Hospital, Philadelphia, and to the Naval Hospital, New York.

Surgeon W. G. Farwell, ordered to the U. S. S. "Columbia."

Marine Hospital Changes. Official list of changes of stations and duties of medical officers of the U. S. Marine Hospital Service, for the four weeks ended March 17, 1894.

Surgeon C. S. D. Fessenden, detailed as chairman of board for physical examination of Asst. Surgeon L. E. Cofer, March 6, 1894.

Surgeon George Purviance, detailed as chairman of board to inspect Reedy Island Quarantine, Feb. 20, 1894. To report at Bureau for temporary duty, March 2, 1894.

Surgeon W. H. H. Hutton, detailed as chairman of board for physical examination of Inspector of Hulls, March 9, 1894.

Surgeon J. M. Gassaway, detailed as recorder of board for physical examination of Asst. Surgeon L. E. Cofer, March 6, 1894.

Surgeon John Godfrey, detailed as chairman of board for physical examination of canoidate, Revenue Marine Service, March 6, 1894.

Surgeon Fairfax Irwin, to proceed to Paris, France, for special duty, Feb. 24, 1894.

Surgeon F. H. Mead, detailed as chairman of board for physical examination of candidates, Revenue Marine Service, March 10, 1894.

Surgeon H. R. Carter, to report at Bureau for special duty, March 14, 1894.

P. A. Surgeon C. E. Banks, to proceed to Portsmouth, N. H., as Inspector, March 12, 1894.

P. A. Surgeon P. C. Kalloch, granted leave of absence for thirty days, March 12, 1894.

P. A. Surgeon A. H. Glennan, detailed as member of board to inspect Reedy Island Quarantine, Feb. 20, 1894.

P. A. Surgeon Eugene Wasdin, granted leave of absence for sixteen days, March 3, 1894.

P. A. Surgeon J. J. Kinyoun, to report to chairman of Committee on Ventilation and Acoustics, House of Representatives, for special duty, Feb. 21, 1894.

P. A. Surgeon R. M. Woodward, to report at Bureau for special duty, March 14, 1894.

P. A. Surgeon G. M. Guiteras, granted leave of absence for twenty days, Feb. 19, 1894.

Asst. Surgeon W. G. Stimpson, granted leave of absence for twenty-five days, March 5, 1894. Detailed as recorder of board for physical examination of Inspector of Hulls, March 9, 1894.

Asst. Surgeon E. R. Houghton, ordered to examination for promotion, March 3, 1894.

Asst. Surgeon M. J. Rosenau, ordered to examination for promotion, March 6, 1894.

Asst. Surgeon L. E. Cofer, to report to board for physical examination, March 6, 1894. Placed on waiting orders, March 15, 1894.

Asst. Surgeon C. H. Gardner, detailed as recorder of board for physical examination of candidates, Revenue Marine Service, March 10, 1894.

Asst. Surgeon W. J. S. Stewart, detailed as recorder of board for physical examination of candidates, Revenue Marine Service, March 10, 1894.

LETTERS RECEIVED.

(A) Alden, C. H., (2) Washington, D. C.; Andrews, Edmund, Chicago Ill.; Alley, E. H., Toledo, Ohio; American Physicians' Sanitarium Association, Washington, D. C.; Abbott & O'Brien Drs., St. Paul, Minn.; Arend. A., Chicago, Ill.

(B) Barrett, J. G., Foxville, N. C.; Badger Paper Co., Kaukauna, Wis.; Best, W. L., Quinerly, N. C.; Blake, W. C., Lyndon, Vt.; Bailenger, W. L., Evanston, Ill.

(C) Comegys, C. G., (2) Cincinnati, Ohio; Cochran, Jerome, Montgomery, Ala.; Coleman, P. C., Colorado, Texas; Clark, E. S., San Francisco, Cal.; Case, W. R., Poughkeepsie, N. Y.; Cunningham, M. E., Garnett, Kansas; Cook, E. P., Mendota, Ill.

(D) Dougherty, G. F., Neoga, Ill.; Dickinson, G. K., Jersey City, N. J.; Dickert, Joseph, Newark, N. J.; Daly, W. H., Pittsburg, Pa. Dolliver-Goodale & Co., Boston, Mass.

(F) Fitz, R. H., Boston, Mass.; Fehr, Julius, Hoboken, N. J.

(G) Guy, J. D., Coventry, N. Y.; Greene, Chas. L., St. Paul, Minn.; Gamble, W. E., Chicago, Ill.; Guilford, W. M., Lebanon, Pa.

(H) Hengst, D. A., Pittsburg, Pa.; Harris, W. J., Washington, D. C.; Hummel, A. L., (4) Philadelphia, Pa.; Holton, Henry D., Brattlehoro, Vt.; Howard Deane C., Fort Buford, North Dakota; Hawkins, A. S., Monett, Mo.; Hoar, Geo. F., Washington, D. C., Hess, John N., New Marion, Ohio.

(J) Jeffery, A. L., Denver, Colo.; Jones, Albert M., Redlands, Cal.;

(K) Kengla, L. A., San Francisco, Cal.

(L) Linger, O. E., Starbuck, Minn.; Listol Chemical Co., Chicago, Ill.; Leffingwell, Wm. E., Watkins, N. Y.; Linthicum, D. A., Helena, Ark.; Lichty, D., Rockford, Ill.

(M) Millard Perry H., (2) St. Paul, Minn.; Murnaw, H. A., Elkhart, Ind.; Metcalf, C. N., Indianapolis, Ind.; Medlin, P. A., St. Louis, Mo.; McArthur Hypophosphite Co., Ansonia, Conn.; McMurtry, L. S., Louisville, Ky.; Mattison, J. B., Brooklyn, N. Y.; McKeown, S. W., Youngstown, Ohio.

(N) Nelmyer, W. G., Chicago, Ill.; Nutt, David, London, Eng.

(O) Osborn, W. W., Upper Middletown, Pa.

(P) Park, J. Walter, Harrisburg, Pa.

(R) Robbins, J., Quincy, Ill.

(S) Stearns, Frederick, Detroit, Mich.; Stutsman, Carl, Burlington Iowa; Stoddard, G. W., Ramsey, Ill.; Smart, Chas., Washington, D. C.; Souchon, Edmond, New Orleans, La.

(T) The Sentinel Co., (2) Milwaukee, Wis.; The Drevet Mn'f'g Co., New York, N. Y.; The Maltine Manufacturing Co., New York, N. Y.; Throne, R. G., Nashville, Tenn.; Trimble, J. R., Baltimore, Md.

(W) Wilson, G. B., (2) Pullman, Wash.; Westermann, B. & Co., (2) New York, N. Y.; Willson, H. B. & Co., Washington, D. C.; Whalen, C. J., Chicago, Ill.

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LECTURE.

OÖPHORECTOMY AND UTERINE CURETTAGE UPON THE SAME PATIENT—INTERSTITIAL SALPINGITIS—HEMATOMA OF THE OVARY, AND PELVIC PERITONITIS—DIAGNOSIS UNDER ANESTHESIA.

A Clinical Lecture delivered at St. Luke's Hospital.

BY HENRY T. BYFORD, M.D.

CHICAGO.

PROFESSOR OF GYNECOLOGY, COLLEGE OF PHYSICIANS AND SURGEONS; PROFESSOR OF GYNECOLOGY, CHICAGO POST-GRADUATE MEDICAL SCHOOL; PROFESSOR OF CLINICAL GYNECOLOGY, WOMAN'S MEDICAL COLLEGE; GYNECOLOGIST TO ST. LUKE'S HOSPITAL; SURGEON TO WOMAN'S HOSPITAL OF CHICAGO; CONSULTING GYNECOLOGIST TO MICHAEL REESE, CHARITY, CHICAGO, AND PROVIDENT HOSPITALS.

Diagnosis:—The case represented by the patient now being anesthetized might, in the slang phraseology of the past decade, be called a "chestnut"—it is a case of oöphorectomy for diseased uterine appendages. We have lately had a case of oöphorectomy at almost every weekly gynecologic clinic. You might justly make the criticism that were I a man of parts I would ring a few changes in these cases, and do something for them besides eternally taking out the ovaries, more particularly since it is now the fashion to treat the endometrium and even to remove the uterus and let the diseased ovaries and tubes remain. Yet I expect to find something interesting and instructive even about this every-day case.

The young lady is a nulliparous grass widow 25 years old, who has made me promise to leave one ovary. She has been up and down with slight attacks of peritonitis for five months. She has been faithfully but unavailingly treated, and demands a cure. She has also a muco-purulent endometritis which, with other facts, suggests a possible gonorrheal origin. There is a profuse menorrhagia for a week of each month and a moderate metrorrhagia coming and going from one to two weeks thereafter.

I first proceed to curette the uterus. I find the cervix purplish and the internal os soft and dilatable to the slightest pressure of the blades of Goodell's dilator. The uterine walls are flabby and the mucous and submucous tissues infiltrated. The blades of the dilator being separated three-fourths of an inch I scrape out the softened mucous membrane until I can get no more, being careful not to injure the softened muscular tissue. Having washed out the uterine cavity with a 1-2000 solution of bichlorid of mercury, I swab it out with a 95 per cent. carbolic acid, and consider that we have relieved the uterus of its portion of the sepsis.

I disinfect my hands again, while the nurses are arranging the patient for an abdominal section.

A small low incision in the linea alba reveals some frail adhesions of an almost normal ovary and tube on the right side, which I have broken up before lifting the parts to the surface for inspection. On the left side the omentum is firmly adherent to the horn of the uterus. The adhesions are recent, for the tissues are still blackish with unabsorbed minute extravasations of blood. This blackened appearance of the omentum does not denote rottenness, as many hasty observers are apt to infer. I tie it off only far enough to head off the oozing, and shall expect the tissues to present a normal appearance within a few weeks, as I have verified by secondary operations in other cases. The tube is the size of the finger and with its adhesions presents a typical case of an interstitial salpingitis. The ovary is the size of a small egg, and is embraced by the tube and so firmly adherent to the posterior surface of the broad ligament that I can separate it only with the greatest difficulty. I have walled off the intestines by sponges, for fear that pus may be present and that it might escape as the adherent tissues separate. The mass comes up without rupture, however, and I proceed to ligature the appendages as close to the uterus as possible, in order not to leave a septic focus at the uterine horn. The adhesions were not very old, the oozing is therefore mostly by capillary and is ceasing so rapidly that I can close the abdominal cavity without drainage.

We have now cleaned and disinfected the uterus, removed all of the remaining tissue that contained the septic material and "saved the other ovary and tube harmless" from all liability to infection.

An incision into the thickened and yellowish walls of the tube shows it to be filled with thickened mucous membrane and luxuriant vegetations, rather than pus and granulation tissue. The fimbriated end is contracted and apparently closed, although not firmly. Undoubtedly some fluid had escaped into the abdominal cavity, causing the inflammation and adhesion of the ovary. The uterine end admits a large probe and has allowed of drainage; and had it not been for the ovaritis and peritonitis, the patient might, after a long time, have recovered sufficiently without the peritoneal section. From the ovary I turn out an organized blood clot the size of a large English walnut. The ovarian stroma appears to be pretty well destroyed by interstitial inflammation.

This case illustrates in an interesting way the progress of gynecologic surgery. Ten years ago this progress was largely made up by the invention and perfection of new operations; during the past five years, however, quite a little of this advance towards perfection has been due to the combination of operations. Fifteen years ago we were taught not to perform trachelorrhaphy and perineorrhaphy at the same time, because hemorrhage might take place from the cervix, or the cervical stitches might become infected, and we could not then get at the

wound. Pretty soon, however, we began to perform both operations at one sitting, and before long added curetting and the ligature of hemorrhoids to them,—and now this combination (the so-called *big four*) is one of the common procedures in this clinic. Later, Alexander's operation was added to this combination, and still later abdominal section. Five or six years ago I was afraid to touch the endometrium when I opened the abdomen, and did not dare to open the abdomen immediately after curetting the uterus. But antisepsis has taught us that we can do all things in surgery. We now operate all over the patient, and her system does not seem to be at all inconvenienced by it.

In a month I will make a speculum examination in this case, and see to it that the cervix does not subsequently contract so as to prevent uterine drainage. If necessary I will dilate the cervix and apply disinfectants and alteratives to the endometrium until no trace of endometritis shall be left. If that is not enough I will again curette, for the only way to "save the other ovary harmless" is to cure the endometritis.

Our other patient, who is a virgin, 17 years old, has been sent to me with the supposition that she has serious pelvic trouble. Abdominal enlargement, iliac dullness, swelled feet, amenorrhea for a year, cough and palpitation, are the signs and symptoms reported. She is anemic, yet quite fleshy and hearty in appearance. By pressing over the pubes I bring the abdominal walls well down into the pelvis, and will press upward from the vagina and rectum, and thus bimanually palpate all that is in the pelvis. The vagina is small and does not allow of satisfactory palpation of the deeper parts. With two fingers in the rectum passed up behind the cul-de-sac of Douglas I penetrate, as it were, right into the pelvic peritoneal cavity and can feel everything. But I feel nothing worthy of note. The uterus is small and normal, the tubes feel like folds of membrane, the ovaries are a trifle large, but movable and evidently not seriously diseased. Instead of diagnosing the case I must undiagnose it. The abdominal enlargement was due to intestinal gas, the iliac dullness to feces in the sigmoid flexure, and the amenorrhea, swelled feet and palpitation to cardiac complications and anemia. We will turn the patient over to the medical department. The medical attendant will examine her heart, urinary secretions and other functions, inquire into the diseases of her infancy, etc., and will undoubtedly find something to do for her besides removing the ovaries.

When you go out to practice I hope that before sending in cases for gynecologic operations you will examine into general conditions, and not send patients suffering with mitral regurgitation or chronic nephritis to a gynecologist to run the risk of having their unoffending ovaries removed. Remember, also, that if it is necessary for me to give an anesthetic to clear up a diagnosis of pelvic trouble, that you yourselves might profit by adopting the same procedure.

Delayed Delegation.—Dr. A. Jacobi, of New York, chairman of the American delegation to the Rome International Medical Congress, has telegraphed that his departure was delayed, and in consequence he and a number of other American physicians were unable to be present at the opening of the Congress. Dr Jacobi added that he and his party expected to arrive in Rome before the final adjournment of the Congress.—*N. Y. Herald.*

ORIGINAL ARTICLES.

POSTERIOR PROSTATO-CYSTOTOMY.

BY WILLIAM T. BELFIELD, M.D.
CHICAGO.

Of the various operations that have been practiced for reaching the bladder and prostate, only the median perineal and supra-pubic continue in general favor; and since the usefulness of the former is for anatomical reasons greatly restricted, the supra-pubic almost monopolizes the field.

The operation of Kraske for extirpation of the cancerous rectum has suggested to various surgeons a method for reaching important structures at the posterior surface of the bladder. Ullmann removed a tuberculous seminal vesicle; Dittel proposed and Küster executed the post-urethral excision of lateral masses of the enlarged prostate; Cabot suggested the extraction of ureteral calculi; and the present writer drained a suppurating prostatic utricle. As the result chiefly of anatomical studies, I now venture to call attention to an operation that may be described as *posterior prostato-cystotomy.*

The anesthetized patient is placed upon the left side, thighs flexed to a right angle, hips elevated eight inches or more, rectum empty and bladder moderately distended with air; a broad grooved staff is introduced. From a point midway between the tip of the coccyx and the right tuber ischii a superficial incision is carried forward, curving toward the raphé which it reaches one and a half inches in front of the anus. Guided by a finger in the rectum and the staff, blunt instruments carefully dissect the rectum from the membranous urethra, prostate and bladder-wall between the lower extremities of the vesicles. The rectum being held out of the way by a retractor (it would be desirable here to ligate on each side the prostatic venous plexus, if unusually large) the point of a knife is made to enter the groove of the staff exactly in the median line half an inch above, and is carried downward to a point the same distance below, the upper border of the prostate, dividing the trigone, the so-called "middle lobe" of the prostate, and the prostatic utricle, and terminating just above the orifices of the ejaculatory ducts. If required, the incision can be safely extended in the median line upward half an inch and downward through the thin commissure joining the lateral lobes of the prostate.

When the divided edges are drawn apart, the entire prostatic surface is accessible to eye and finger; the bladder can be drawn downward and the ureteral orifices exposed (on the cadaver). Complete suturing of the wound in bladder and prostate, while practicable, would probably be less desirable than partial suturing and drainage through the upper angle of the wound, which corresponds with the lowest point of the contracted bladder.[1]

This incision seems to have two decided advantages over the supra-pubic: 1, perfect command of the entire prostate and base of bladder and; 2, perfect drainage and consequent reduction to a minimum of the dangers of urinary infiltration; it is also practicable in cases of contracted bladder to which the supra-pubic is not adapted. Incidentally it affords access to structures whose intimate clinical relations with bladder and prostate are becoming better understood—prostatic utricle, seminal vesicles and extremities of ureters; for reaching the fundus of the bladder, however, it seems inferior to the high incision.

The proper field of this operation must be shown by extensive clinical experience; I have used it in one case, removing a calculus and lateral masses of

[1] It might be found possible to introduce suitable catheters into the ureters and thus prevent contact of the urine with the wound; whether this difficult measure would have any practical advantage over the perfect low-level drainage afforded by the tube seems doubtful.

the enlarged prostate, the latter being far more accessible than I have ever found them through the supra-pubic incision. Complete healing followed in fifteen days.

A New Method for Drainage of the Bladder.—Perfect drainage of the bladder is obtained by a simpler incision along the same route: A tenotome is made to enter the perineum—blade horizontal— an inch or more in front of the anal margin, passed between prostate and rectum, and enters the bladder between the upper extremities of the prostatic lobes (it is well to have the bladder partly filled and its floor depressed by the beak of a sound); a slender forceps is carried along the blade into the bladder, the knife removed and the channel dilated by separation of the branches of the forceps for the introduction of the drainage tube. This incision opens and drains the prostatic utricle—which appears to be an important factor in prostato-cystitis from any cause. I have used this method of drainage in two cases with entire satisfaction. The perfection of such drainage was well shown in a third case, operated by Dr. Wishard, of Indianapolis, concerning which the writer was consulted. To prevent urinary contamination of a plastic operation for remedying a complete epispadias in a man 22 years old who had absolutely no vesical sphincter and consequently complete incontinence, a soft catheter was introduced through this incision. The bladder was kept so thoroughly empty that the flaps ingeniously made to cover the deep urethra healed by primary union.

THREE CASES OF CARCINOMA DEVELOPED ON LUPUS VULGARIS.

Read before the Chicago Pathological Society Feb. 13, 1894.

BY EMANUEL FRIEND, M.D.

CHICAGO.

CHIEF ATTENDING PHYSICIAN TO DEPARTMENT OF SKIN AND GENITO-URINARY DISEASES UNITED HEBREW CHARITY DISPENSARY; ATTENDING PHYSICIAN TO CENTRAL FREE DISPENSARY.

It is a well-known fact that when two or more ulcerating affections of the external skin of different etiologic relations, involve the same region, they often give rise to great difficulty in making a diagnosis.

Such cases, for instance, as the combination of syphilis and carcinoma reported by Lang and Doutrelepont; others again as lupus and carcinoma first reported by O. Weber in 1859, and following him came Esmark, Hebra, Lang and numerous others.

Having been afforded during my last year's stay in Vienna, of seeing at least three cases of carcinoma developed upon the site of lupus vulgaris of the face, I take the liberty of giving you a brief *résumé* of the scanty literature of the subject, and at the same time demonstrating a few histologic specimens relating to the subject. The one which I have at present under the microscope, having been used by Prof. Kaposi while lecturing on this subject last winter; the others I prepared since my return home.

Ziegler, *Allegemeine und Specielle Pathologische Anatomie*, page 465, under "Epithelial New Growths" states: "The epithelial hyperplasia may take place in the epidermis, as well as the epithelium of the sebaceous glands and the hair follicles, probably also the sweat glands."

In the epithelial papillæ of many of the cancers involving the skin, there are found lamellated nodules of horny epithelium, and in consequence they have received the name of horn cancers. Occasionally calcification takes place in such cancers.

Page 466: "The epithelial cancers, that is those growing out from the rète malphigii, develop with preference at the junction of the external skin and the mucous membranes, on the lower lip, nose, eyelids, preputium, anus, external female genitals, etc. Sometimes they start from warts, cornu cutanæ, scars, pustules and ulcers, and arise not seldom upon the base of a lupus ulcer or scar."

Neisser, *Ziemssen Pathologie and Therapy*, Vol. xiv, page 606, in his "Differential Diagnosis" between lupus vulgaris and carcinoma, says, "one ought not to forget that complications of carcinoma and lupus occur, and in these cases owing to lack of resistance, in part, of the lupus tissue against the encroaching cancer papillæ, it is advisable to adopt early therapeutic measures."

Lesser, *Lehrbuch der Haut und geschlects Krankheiten*, page 201, states: "Occasionally pathologic changes in tissue are the seat of epithelial carcinoma, which are in no way directly responsible for the origin of same, such as ulcers of foot, syphilitic ulcerations, lupus, etc."

The probabilities are that the pathologic epithelial proliferations in connection with the diminished resistance of the connective tissue are responsible for this atypical hyperplasia, the formation of cancer.

The technique of preparation of the specimens was as follows: The excised piece of tissue was hardened in alcohol, beginning at 60 per cent. and increasing gradually to absolute alcohol. Then put in equal parts of ether and alcohol for two or three days and, finally, from a thin solution of celloidin to a thicker one and then mounted and cut; the sections being about fifteen micromill. thick. Hamatoxylin and eosin used as stains. A number of sections I stained by both Ziehl and Kühne's method for tubercle bacilli with negative results, which did not surprise me, as you all know how rarely the bacillus is found in lupus tissue, possibly once in 90 or 100 sections; and on this very ground is largely based the argument for the non-tuberculous nature of lupus vulgaris, by a few of the leading dermatologists and pathologists of Europe.

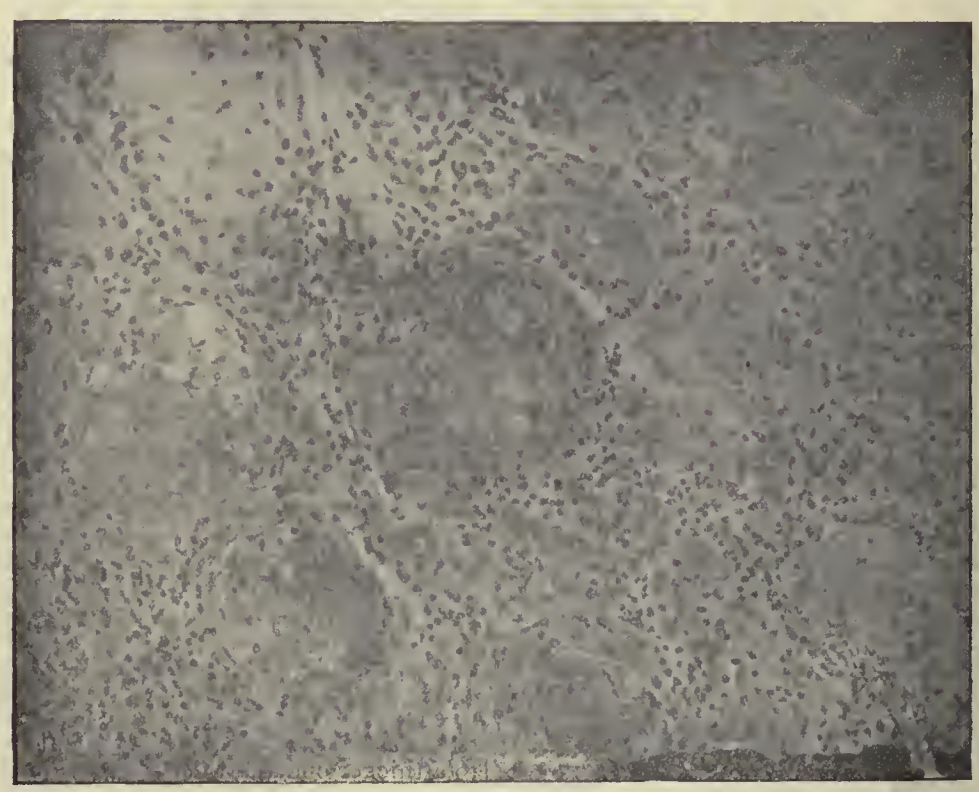
Microscopic Picture.—Zeiss A. Ocular No. 3. One sees deep in the corium, isolated tissue masses called by Leloir, "Lupome." They lie irregularly and at different depths in the corium, while the upper and papillary layer, and rète malphigii appear normal; and at the same time one sees, below and interspersed in these so-called lupome nodules, are some round, others elliptical bodies, which have taken the eosin stain more readily than the surrounding tissue; the extreme vascularity of the part is very noticeable.

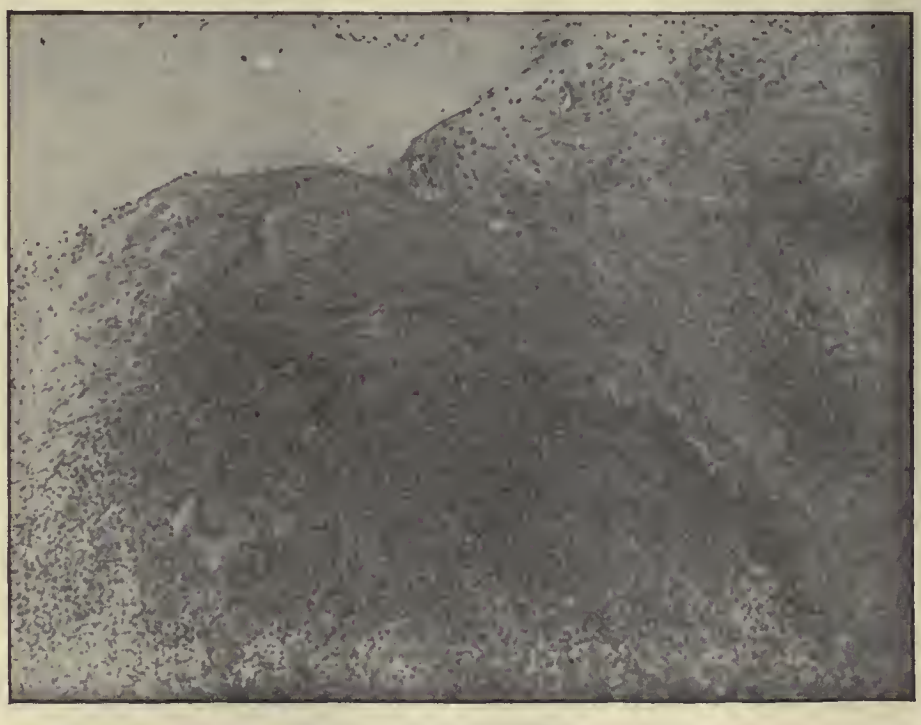
Zeiss E. Ocular 3, shows how well defined the borders of the lupus nodules are from the surrounding connective tissue; although slightly more irregular in their arrangement they are made up of the same constituents as the miliary tubercle, namely granulation tissue, epitheloid and giant cells. The main difference between the lupus nodule and the tubercle, being the retrograde metamorphosis which they undergo; while in the tubercle we get a typical cheesy degeneration in the lupus nodule we get more an atypical or fatty degeneration, while the interstitial connective tissue becomes hyperplastic and contracts.

The difference in the retrograde metamorphosis is said by some to be due to the vascularity of lupus in contra-distinction to the tubercle; while others again believe the relative number of tubercle bacilli responsible for the difference.

undergone a kerato-hyaline degeneration. These are undoubtedly epithelial nests; some cut diagonally, others cut square across.

In the three cases, which I saw in Prof. Kaposi's wards, the face was the seat of the affection; whether





The round and elliptical bodies previously mentioned are now seen to be made up of concentric layers of cells, with few nuclei, the whole or rather the more central parts with the appearance of having

or not this is the most common seat, I have been unable to determine, but judging from the fact that the face is the most common seat of lupus vulgaris, it would be plausible to consider the face as the most

common seat of this complication, with carcinoma. In conclusion, I wish to thank Prof. Paltauf, as well as Docent Riehl for their liberality in supplying me with material, as well as for the many other kind favors shown me during my studies in Vienna.

PRACTICAL POINTS IN TREATING DISEASES OF THE EYE, EAR, NOSE AND THROAT.

Read before the Dauphin County, Pennsylvania, Medical Society, March 6, 1894.

BY J. WALTER PARK, M.D.

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The professional relationship existing between the general practitioner and the one who confines himself to special branches of medicine, is one of such a character that the constant interchanging of views upon practical points, gained by experience in the various branches of medicine, is of so much importance that I will endeavor to present for your consideration to-day, a few practical points, of such a character as will interest the general profession more than it will my esteemed colleagues, who limit their work the same as I do. We will consider them in the following order: 1, the eye; 2, the ear; 3, the nose; 4, the pharynx and larynx.

1. *The Eye.*—It is well that there should be some methodical way in examining a patient when he presents himself for examination; it is therefore your first duty to take a general view of the eyes to be examined, observing the movability of the eyeballs in their various meridians; to see with what freedom and to what extent he can move the various recti muscles in all directions, the condition of the eyelids, lachrymal puncta, ocular and palpebral conjunctivæ, the transparency of the cornea and the movability of the iris. In an inflamed eye always be sure to look for a foreign body, either in the cornea or under the lids; this can not well be done without the aid of a lens to concentrate the rays of light upon the parts to be examined by artificial light and an ophthalmoscope. The latter are often imperative to examine the movability of the iris. Occasionally you will find a short, inverted, white cilia on the upper or lower lid near the inner canthus, and seemingly prodding into the caruncle, which if removed will remedy the entire inflammatory condition. Next of importance to foreign bodies in the eye, is the movability of the pupillary border of the iris. Generally you will find a change in its color when any inflammatory condition exists, but quite frequently in the early stages this change has not taken place sufficiently to be visible to the eye, hence the necessity of depending entirely upon the contraction and dilatation of the pupil by artificial light concentrated upon the cornea, by the aid of which you can readily discern its movability. If immobile, or acting sluggishly, you should instill a mydriatic at once to cause dilatation and prevent adhesions of the iris to the anterior capsule of the lense, for once permanent adhesions form, your chances for good vision are very few indeed. To know when and how long to skilfully use a mydriatic, can only be acquired by a long and continued use of the same in diseases of the iris. A safe rule to be governed by in the use of atropin, is to never use it in adults over 40 years of age, except in inflammatory diseases of the iris, and then carefully watch the tension of the eyeball for fear that much dreaded disease, glaucoma, may be brought on by its use. Use it sparingly and only long enough to keep your pupil dilated.

One of the most serious diseases of the eyes to which I can call your attention, is ophthalmia neonatorum. When called to see a case of this kind, or one simulating it, the first step taken in examining your case is the most important, that is to examine the child's eyes carefully so as to see the exact condition of the cornea. Do not be satisfied with merely *trying* to see its cornea, but be sure you do see it. Every physician should have a pair of small lid retractors, for without them you can not get a good view, on account of the severe blepharospasm, and the cornea always rolling up under the lids, out of sight. Thorough antisepsis in every particular is necessary. A detailed account of its treatment in this paper would consume too much of your time, but a few words as regards the use of atropin, I think, are necessary. Atropin should always be used if you have an ulcer in the center of the cornea, and eserin in its stead for the marginal ring ulcer. This ulcer often starts at the sclero-corneal junction, and in forty-eight hours has traversed the entire border of the cornea. The eserin contracts the pupil, and by its tension on the iris prevents prolapse into the perforating ulcer, while a *similar condition* is prevented, by *dilatation* of the pupil, when the ulcer is central. Phlyctenular keratitis, or the small and multiple ulcer of the cornea is another frequent disease of children, and one of the most common diseases of childhood. Photophobia, the almost constant and contracted condition of the eyelids, often a papular eruption around the eyes, and an acute or chronic rhinitis are its chief symptoms. Note this fact, that most cases are preceded by a running nose, or in other words, an acute or chronic rhinitis, bad sanitary condition of their habitations, an insufficiency of the proper kind of food; and that if you treat the nose, administer good food, the daily bath, etc., in *conjunction* with the treatment of the eyes; your patient will get well in half the time that is required if you only treat the eyes, and neglect the nasal complication.

If you only treat the eyes, and neglect the nose, you will generally have successive crops of phlyctenular ulcers return, and the result will be that you have your patients on your hands for a long time, and perhaps lose them, by their getting into other hands.

Atropin and yellow oxide of mercury are the best remedies for these cases. Boracic acid solution injected into the nostrils will generally remedy the rhinitis in children. Persistent treatment, however, must be enjoined upon the patients even after they are seemingly well. The general health, as well, must be attended to in all cases, as a rule.

2. *The Ear.*—Next of importance is the organ of hearing. Quite an advancement in the treatment of diseases of the ear has been made within the past five to ten years. The most satisfactory, however, has been the removal of the ossicles and tympanic membrane for chronic suppuration of the middle ear. Where there are no mastoid complications, eight out of every ten cases of from six months' to three years' standing, that have resisted all other forms of treatment, get well after this operation, if it

is well and properly done. The removal of the stapes is rarely required. Quite frequently, in old or chronic cases, there are no ossicles to be found, they having been entirely destroyed by suppurative processes. Where the hearing in suppurative cases is defective, about 50 per cent. of the cases are improved. Tinnitus aurium is also most always greatly relieved and generally entirely stopped.

I have lately been using Dr. Doench's middle ear apparatus for the purpose of applying medicated vapors in the middle ear for chronic catarrhal deafness, and find that when menthol vapor is thus introduced through the Eustachian catheter, I can invariably improve cases of from six months' to two years' standing, who hear the tick of an ordinary loud ticking watch at three inches, to fifteen and twenty inches by actual measurement. The tinnitus aurium is also almost entirely relieved in a majority of the cases. The operation for the removal of the ossicles is very simple, and usually does not confine your patient to bed over forty-eight hours, almost *always* unattended with any danger, and usually in four or five days is attending to business again. When you have a chronic, fetid suppurating ear, with tenderness over the mastoid process, there is generally mastoid complication, and the earlier you establish free drainage by either openiug it up through the attic of the tympanic cavity, or the mastoid process, the sooner your patient will get well. Chronic suppurating ears, sooner or later, become dangerous to the patient, and contrary to the advice of some physicians, should not be encouraged, but stopped as soon as possible. In all acute and chronic suppurating ears, pyoktannin will often arrest the discharge quicker than boracic acid if it is always used in fresh solutions, not over three to five days old. I use it in 1 to 500 strength solutions, and find it to have a more *lasting effect* in the destruction of pus germs, than peroxid of hydrogen. Wherever there are unhealthy granulations, or symptoms of polypi, there is nothing so efficacious as the curette, followed by equal parts of iodoform and boracic acid blown into the ear twice daily. In all acute or chronic suppurating ears, never forget that in *a majority of the cases*, they originate from some acute or chronic pharyngeal or nasal inflammation, that they need watching, and in most instances treatment, before the ear complication will get well. Furuncle of the meatus is a very painful and often stubborn disease to treat. There is very frequently a tendency to recurrence, and my experience has been that a 40 grain to the ounce solution of menthol in olive oil, generally prevents the recurrence of a second one.

3. *The Nose.*—There is no doubt that the nose is one of the most abused organs of the human body. Its functions of breathing, smelling, warming and sifting the respiratory air from microörganisms previous to its entering the lungs is very frequently interfered with and imperfectly performed owing to the few *perfectly* formed noses, as well as the *few* which are not diseased in some manner. Always be sure to make a careful examination before expressing an opinion. In the so-called "mouth breathers," you will generally find one of the five following causes for this defect, viz: Hypertrophied tonsils, adenoid vegetations in the vault of the pharynx, hypertrophy of Luschka's tonsil, hypertrophy of the turbinated bodies, or nasal polypi. If either of these defects exist, the earlier you remedy the cause, the sooner you relieve your patient, and save many complications which may arise by continuous delay. The relationship existing between aural and nasal diseases are such that I never think of examining the one without the other. Influenzas and catarrhal diseases of the nose and naso-pharynx are the causes of three-fourths of all aural diseases.

Stenosis of either nostril, when due to hypertrophied conditions of the turbinated bodies, to exostoses or enchondromas, should always be remedied by operative measures, for it is the only sure way to remedy such defects, restore the natural respiratory functions of the nose, and thereby save many laryngeal and pharyngeal complications which are sooner or later sure to occur. Thorough cleanliness of the nose and naso-pharynx, the early recognition and treatment of acute and chronic rhinitis, will generally prevent the hypertrophic conditions, as well as all the aural complications, of which there are so many. The early treatment of the hypertrophic form, generally prevents the atrophic variety, which so often follows if this is not done; and once this form is thoroughly established, prevention of its further progress is all that can be done in the way of treatment. To even remedy the stench that accompanies atrophic rhinitis requires the constant and close attention of the physician, as well as the patient. Of all the various cleansing lotions which I have tried, the boracic acid, sodium chlorid, acid carb. and water solution is the best. This should be used in all fetid catarrhal conditions, as well as acute and chronic rhinitis, by spraying the nose and naso-pharynx, both anteriorly through the nose and posteriorly through the mouth. Fluid petroleum, combined with the various antiseptics, are excellent for the prevention of crust formations, and to allay the stench in most all cases. My experience has been that the fluid petroleum for constant use is better adapted for the mucous membrane of the nose than albolene or benzoinol. The two latter, after long and continued use, seem to leave a dry condition of the mucous membrane, which the former does not do so much after its discontinued use. The fluid petroleum and its combinations should always be used after the cleansing lotion has been used. Nasal polypi should always be removed by the snare, and *not* twisted off as is so frequently done. After their removal the bases of each one should be thoroughly cauterized, and quite frequently you will not have any return of them; if not done, they will be sure to grow again.

Dull headaches and pains in the region of the frontal sinuses, especially when accompanied by dullness of the mental faculties, are generally caused by an extension of the inflammatory conditions in the nose to the frontal sinuses. By treating the nasal cavities and establishing free drainage through the ethmoid cells you remedy all the pains, and restore the stunted memory. I remember two cases of that nature, whose minds were bordering on insanity, entirely restored by relieving the pent up secretion in the frontal sinuses, caused by immense hypertrophies of the superior and inferior turbinated bodies. *Remember*, that a constant dull pain at the base of the nose, and a stunted memory are its chief symptoms. If you are not careful you will attribute this pain to some ocular trouble, when in fact it is entirely nasal. I have had cases referred to me quite frequently to treat the ocular trouble, when I found it nasal.

4. *Pharynx and Larynx.*—In examining the pharynx and larynx, considerable skill and dexterity in the manipulation of instruments is required, in order to see and examine the parts well. Practice alone, will bring about these results. There are plenty of ordinary cases which would never get into the hands of the specialist if you were to devote more time to skilfully handling the laryngoscope and post nasal mirrors. A chronic follicular disease of the tonsils, which is generally recognized by small, white, cheesy masses imbedded or protruding from the follicles of the tonsils, and which invariably taints the breath, is best remedied by puncturing each follicle with the galvano-cautery point. There is no other treatment so effectual as this. Where hemophilia exists, the treatment of hypertrophy of the tonsils is also best done by the galvano-cautery point. It is really dangerous to practice excision in such cases, while in others where no idiosyncrasy exists, it is the quickest, and equally as effective as the galvano-cautery point. In all so-called "mouth breathers," look for enlarged tonsils, and adenoid vegetations in the vault of the pharynx. Specific ulcers of the tonsils, arches of the palate or the walls of the pharynx, yield best to applications of chromic acid, in conjunction with your constitutional treatment.

I have used various cauterizing applications, but find none so efficacious as chromic acid. In acute and chronic pharyngitis a solution of from 20 to 60 grains to the ounce of nitrate of silver applied twice a week, for awhile, acts admirably. Do not be afraid to use strong solutions, for they are generally well borne, and you accomplish in a week's time what would otherwise require a month's treatment. In tubercular ulcerations of the pharynx and larynx, the application of the curette and lactic acid, when applied in the early stages of the disease, prolong the life of your patient materially, and in quite a number of cases the ulcerations will heal up, and when your patient dies it is generally by the lung complications, which exist in almost all of these cases.

Acute and chronic laryngitis are among our most frequent diseases of the larynx, and are generally concomitant with, or a sequela of, a severe influenza. In acute laryngitis, inhalations of hot steam impregnated with comp. tr. benzoin, eucalyptol and camphor, are very soothing to the inflamed parts, and promote resolution and free expectoration quicker than any other remedy I know. In all such cases, remember to keep the secretions open, especially free diaphoresis. After the stage of resolution has set in, expectorant treatment accompanied by inhalations of the vapor of terebene, eucalyptol, and camphor will soon get your patient well. You must also not forget to treat any existing laryngeal or nasal complications at the same time. Counter-irritants are generally condemned, but I have found them act very well in the majority of cases. Inhalations of menthol will ease the pain and dysphagia accompanying the acute stages, and should be used through a curved glass inhaler. In chronic laryngitis, I have obtained the best results from direct applications of nitrate of silver, mentholin oil, and creosote inhalations. The creosote should be used in hot water at a temperature of from 140 to 160 degrees. The aphonia which so often accompanies slight attacks of acute or subacute laryngitis, caused by a congested condition of the vocal cords, generally yield nicely to a 10 grain solution of alum or sulpho carbolate of zinc sprayed into the larynx. All applications of whatever character must be prolonged, and applied regularly to get good results. In most pharyngeal and laryngeal diseases do not depend too much on your patients to carry out your instructions, for all those cases requiring direct applications to the diseased parts *must* be done by yourself. If you do not do it yourself, you will very often fail in accomplishing the good results you desire.

In the preceding remarks I have confined myself entirely to practical points, gained by personal experience, and have only touched upon those which I considered most important, and such as you meet in your daily routine of practice. If I have mentioned but one point which may in the future be of some service to you in relieving suffering humanity, I shall feel as though I have accomplished *some good.*

32 North Second Street.

THE PSYCHO-PHYSICAL RELATIONS OF MAN, CONSIDERED FROM THE STANDPOINT OF A PRACTITIONER OF MEDICINE.

Read before the Binghamton Academy of Medicine Oct. 19, 1893.

BY JOHN M. FARRINGTON, M.D.

BINGHAMTON, N.Y.

(*Continued from page 450*).

Excessive fright has often been productive of grave results, and in many instances, of sudden death. Among the grave diseases induced by fright are mentioned typhus, epilepsy and apoplexy. Fear excites especially enuresis, diarrhea and generally produces a relaxation of the sphincters of the mucous passages, causes abortion and predisposes to attacks of contagious and miasmatic disease, while it aggravates every disorder and often renders them fatal. We might, if time would permit, refer to many recorded cases of positive and even fatal illness being induced by the imagination only, but one instance or illustration must suffice. Lord Stanhope relates the following: "An English physician while walking with a friend and conversing with him upon the power of the imagination in its effect upon the health observed a robust and healthy laborer approaching; to prove to his friend the truth of his opinion he accosted the man and inquired after his health, to which he gave satisfactory answers, which seemed to excite much surprise to the physician, and the laborer was gravely and with a sort of affectionate interest told that he was certainly in a state of disease which required great care. The laborer immediately returned home and went to bed declaring that he was really ill. As soon as the physician learned the ill effects of his experiment he called on the man and apologized, assuring him that he was in perfect health, and that what he had previously said to him was merely to show the influence of the imagination. Nothing that he could urge was of any avail. The laborer persisted that he was very sick, refused to leave his bed and died in a few days."

But fear has been used with curative effect. Various imitative diseases have been arrested by the use of it. Boerhave tells us that he once had several patients with epileptiform convulsions from sympathy with a person who fell down before them in an epileptic fit. He was puzzled at first how to act, but reflecting that the attacks were produced by a mental impression, he resolved to try the effect of a still stronger impression to check them. He ordered, in the hearing of the patients, hot irons to be prepared

and applied to the first person who was seized with a convulsion. The consequence was that no more fits occurred afterward. Instances are recorded of a prompt cure of gout, asthma and hysteria being accomplished by sudden fright. Hildanus relates that a man disguised as a ghost took another laboring under severe gout, carried him down stairs and then left him. The terrified invalid quickly found his way up stairs and never afterward was troubled with gout. Violent agitation of the mind from indignation, vexation or mortification has a decided effect upon the organism. The former inducing at first an excitation of the circulation, while if protracted it has an undermining effect upon all the functions. While vexation and mortification induce an interference with the digestive function, nausea and vertigo. The effects of melancholy are strikingly exhibited in those who suffer from loneliness or from great misfortune; a general derangement and languid condition of the functions are produced, thus causing a wasting of the tissues. But the most obvious effect of a psychical cause is the sudden changing of the color of the hair from dark or gray to white induced by sudden fright or extreme grief. "It indicates," says one author, "an extreme sinking in the process of vegetation, because by the perishing of the vascular rète, nothing but the gray or white outer covering remains." Terror will cause the hair to stand on end. A state of mind or feeling continually acting upon the body will, usually, in the course of time induce a characteristic change or effect upon the individual's form, gait or expression. So marked are these effects we are continually making use of them to aid us in diagnosticating the character and disposition of every person we meet. They are signs hung as it were about a man by nature, through the silent yet certain operations of the mind upon the organism.

On this influence of the thoughts affecting the features and the character of the expression rest, we believe, the science or art of physiognomy. A person who is ever absorbed in mathematical calculations will eventually have traced upon his features an expression indicative of his mind's pursuit. One constantly depressed in spirits will wear a "long face" as foreign to mirthfulness as warmth is to an iceberg; his features in time will become so fixed that he will ever exhibit a melancholic air, no matter how much his feelings may change. The lineaments of care are indelible. We might, did time permit, multiply instances of the same certain results, but it is unnecessary to dwell upon the illustrations to prove that which we every day may witness. We are ever making a practical application of the knowledge we have obtained by personal observation, by affixing a character to every face we meet, from the sharp visage of the miser, to the broad benevolent features of the philanthropist; from the bright and cheerful countenance of the contented man to the careworn features of one whose life has been a struggle with misfortune; from the empty expression of the thoughtless to the sedate and thoughtful brow of the philosopher.

The passions have a marked effect upon the functions, especially upon the secretions, rendering them greater or less in quantity and of an irritative or perverted character. Thus fits of anger in the mother are said to produce a very irritating milk, followed by griping in the infant and green stools, and Dr. Van Ammon relates the case of a woman who, while furious from excitement, put her child to the breast and by so doing caused its sudden death; it sank lifeless upon her bosom in a few moments. Rage is believed by many physiologists to be capable of generating a most virulent poison in the saliva. The effect of anger upon the physical system is most apparent. The violent tension of the muscles, and the disordered breathing, disturbing the free circulation of the blood causes it to be thrown back upon the heart and this organ labors with inordinate force to propel it onward. Hence a rupture of the heart or large blood vessels sometimes occurs in a fit of anger. John Hunter attributed the commencement of his heart disease to a fit of passion. Jealousy is thought to act upon the biliary secretion and no doubt does indirectly, by first inducing a disordered condition of the digestive function. A variety of colors, present in the different cachexia are attributed to the influence of the passions; thus we have "yellow envy, pale unhappy love and black insatiate hate." A frequent or intense fixation of the attention upon some tragic event described by another may induce the same excitement or agitation of the system as though the tragedy were really witnessed. The frequent imitation of the manifestations of certain passions, or the feigning of them may give rise to the real presence of the sensations they were intended to counterfeit. Thus actors have died upon the stage, and we once saw an actress brought home from a theatrical rehearsal at which she had swooned, and after her return to consciousness she remained for some time in a high state of nervous excitement and agitation.

Perception, as we have heretofore noticed, comes originally from the senses; from the latter as from a starting point or alphabet do the thoughts and fancy branch out, as it were, and incessantly form new data and increased sources of thought, of imagination and perception, which also are subject to corporeal conditions. Should the senses be unduly exercised, the organs thus overworked become weakened and injured, and through them the whole system suffers. The strain produces an over excitement and perhaps a degree of inflammation of the organs involved, followed by disturbance of the general system. Too little employment of the senses, by not assisting the vital process of innervation, occasions a state of general weakness and imbecility. Excess of imagination produces the same result as a strain upon the senses only in a higher degree. It causes an excitement which is followed by a corresponding depression of all the functions of somatic life. Too little exercise of the imagination, like too little use of the senses, induces a low state of the general system and of innervation. The same may be said of the redundant or inadequate exercise of the thinking powers. Thought has an influence over the vital processes, because of the use it makes of the vital power in its operations and manifestations; its excessive action interferes with the organic functions by abstracting too much of the vital power from the bodily organs, which in consequence of this deprivation are unable to perform properly their functions. As thought impedes digestion so as before stated does digestion impede thought. This applies with special force to abstract or continued meditation after a meal, or a moderate intensity of thought with a "plenus venter." We have previously alluded to the influence that dyspepsia has upon the mental

condition; we will now notice how the latter may produce the former. It is a well-known fact that a large class of dyspeptics are individuals who are giving more or less attention to intellectual pursuits. Two reasons have been assigned why such persons are most subject to this disease:

1. Because of the sedentary habits which these pursuits or occupations usually involve.

2. On account of the well-known sympathy existing between the stomach and the brain.

Here, then, is an important point leading to therapeutics or the treatment of the disease in question. If dyspepsia has been induced through the operation of mental causes, the mind is the chief channel for the induction of remedies. The physician here must exercise tact to determine the cause of the functional derangement and then with a nice discrimination select the proper course of procedure to remove it. It is unfortunately too common for medical men to pay but little regard to the mental aberrations peculiar to this disease. To examine them with attention and, if possible, to afford relief, should be embraced within that philanthropy which ought to be inseparable from our profession. The medical adviser should recommend such stimuli to the patient's intellectual and moral powers as seem most demanded to excite a healthy influence upon the organism. Profound thought impedes the action of the senses. A person may be so buried in his own thoughts as to be, as it were, dead to surrounding stimuli, and utterly unconscious of what is passing about him; thus Archimedes at the storming of Syracuse, remained absorbed in thought, and thus do we observe results often extremely ludicrous from absence of mind; the mind being intent upon something abstract or remote, is not cognizant of corporeal acts. Maniacs in their ravings will often inflict ghastly wounds upon themselves without feeling them; the soldier, when comes the "tug of war," is unconscious of his wounds, and the brutal pugilist will bear a multitude of tremendous blows when in the ring but afterwards, when put to bed, becomes sorely conscious of his thumpings and bruises and gives way to groans of agony and exhibits the weakness of a child. The power of the prepared mind to resist impressions upon the body is a well-known fact. The most courageous man is a coward when taken by surprise, and the bold Indian who laughs at fear, will start like an antelope at a sudden sound.

This mental power over bodily pain is also an observed fact; let the mind be prepared for the occurrence and the body is as it were insensible to injury as a marble bust. This we have seen in the flagellation of proud-hearted school boys who received the blows from the pedagogue with perfect indifference, or, better still, in the operations at our hospitals, where enfeebled sufferers will sometimes endure a severe operation without a groan. The influence of attention upon the bodily organs has been carefully noted by many physicians. Dr. Brigham in his work on the brain, published in 1840, alluded to this subject. He asserts that he has seen tumors, ulcers and eruptive diseases increased and perpetuated by mental attention directed to the diseased part. In fact there is scarcely a disease but that may be aggravated by constant anxious thought in reference to it. But the important fact to draw from the phenomenon is that not only will mental attention aggravate disease but it will also relieve it. Kant was able to forget by the strength of thought, the pain of gout and other diseases, and it is a well-observed fact that calling off the attention of the patient from his disease and fixing it intently upon other matters will have the effect of greatly relieving the suffering from a disordered organism. We see frequently, the effects of mental influence in preventing or removing the feeling of fatigue. Dr. Darwin happily illustrates this influence by reminding us of what we often witness in the child. Although heartily tired we have only to give the little fellow our walking stick; he straightway plants it between his legs and rides off as merry as a lark. The *modus operandi* of the mind in this case is explained as follows: A temporary energy is imparted by the mere effort of the will to the nervous system, and the immediate effect of this is to invigorate the exercise of the respiratory and circulatory systems on the state of which the feeling of fatigue so much depends. Many instances are on record where a complete cure has been effected by the influence of mental impressions. A humorous anecdote is related of Lord Chief Justice Holt which will illustrate the point under consideration: When a young man, Holt was a wild fellow full of jokes and humor. On one occasion, with some companions he stopped at an inn in the country where they contracted a debt of such an amount that they were unable to defray it. In this dilemma they appealed to Holt to get them out of the scrape. Holt observed that the innkeeper's daughter looked remarkably ill and was told by her father that she had the ague. Hereupon he gathered several plants and mixed them together with a great deal of ceremony, afterward wrapping them in a piece of parchment upon which he had scrawled certain letters and marks. He then hung the ball around the young woman's neck and the ague did not return. After this, Holt offered to discharge the bill, but the gratitude of the landlord refused any remuneration and the company left. When he became Lord Chief Justice a woman was brought before him accused of being a witch. She was the last person tried in England for witchcraft. She made no other defense than that she was in possession of a ball which infallibly cured ague. The ball was handed to the Judge who found it to be the very one which he had made years before to cure the landlord's daughter and to pay his own bill.

I presume every physician present might relate a parallel instance of cases that have come under his own observation, or that of some of his friends, where the mental attention alone upon physical ailments has wrought remarkable results. This influence is one of exceeding interest, for by it are we able to explain many phenomena otherwise inexplicable. To this is due the apparent success of the legions of charlatans who pose under many different titles such as Faith Curers, Christian Scientists, Spiritualists, etc., and perform such "miraculous cures." They impress the ignorant or superstitious with the fullest and most confident expectation of certain results taking place within their organism, and the power of mental attention thus directed often induces the anticipated result or some approximation to it. To our mind this is the true explanation of most of the phenomena produced by animal magnetism. The subject must be one of nervous temperament or one who has confidence in the power of the manipulator to induce the mesmeric state or hypnotism,

else the operator fails. This power of expectant attention is one that might be used with advantage by physicians in the treatment of disease, and not be left in the hands of the ignorant and the knavish to prey upon and delude those whose ignorance or superstition render them fit victims for this class of mountebanks. We all have recognized the effect of expectant attention in some subjects over the action of medicine, so that it is the custom of many physicians to tell the patient what result is expected from the remedy administered. We have read of instances where emesis, purgation, diuresis, etc., have been produced by bread pills, the respective patients having been told in advance that the medicine would operate thus. The power of expectant attention will induce phenomena without the subject being aware of any voluntary effort to cause their production. It is to us a source of satisfaction to know the power that produces the otherwise mysterious phenomena, yet in what manner that influence operates upon the corporeal system we can not tell. It is but another of the manifestations of the psycho-physical relations of man; it is a proximate fact, and we can not as yet go further. We have previously in this paper referred to the influence of the passions upon the secretions, but there are other mental states that affect the action of the secretory glands, e. g., the thought of a luscious fruit or of food may be sufficient to excite an abundant flow of saliva; the maternal affection of the mother for her babe induces a prompt and copious flow of milk at the time of nursing, and excessive feelings of joy or sorrow excite a flow of tears. Having thus briefly considered some of the psycho-physical relations, it remains for us to make the same remark which we previously did in reference to the physico-physical relations, to-wit: That they do not manifest themselves alike in all individuals. They exhibit themselves most in tender and pliable nervous systems. Sex, age and education all have an influence. The woman, the child and the prematurely developed are the best subjects for their manifestations. Premature development and premature education are the causes of a train of both mental and physical diseases. As the relations of the mind and the body are affected by too early development of the one and the too early culture of the other, so will they be affected by retarded development of the body and delayed training of the mind. Likewise will these relations be disturbed and abnormal where culture of the mind or exercise of the body or both be inordinate or excessive, or if either or both be neglected.

Here enter the principles of hygienics, and we are led to appreciate the influence of study and exercise or their opposite, indolence, upon the health of the individual.

As before observed we are the subjects of a higher and lower existence—spiritual and animal; two systems of perceptive faculties, one of the body, the other of the mind. As we have seen a reciprocal relation exists between them, and our highest happiness in this life will be to so develop the one by exercise and the other by culture as to produce the most perfect state of the intellectual and moral powers that the corporeal frame will permit, without injury to itself, either by inducing disease or shortening life. Harmony of the development of the body and mind is essential to harmony of their mutual relations. It is a matter of deep regret and humiliating to our civilization to witness the unequal development of these two systems in the inhabitants of our country. While some overtax the mind, others overwork the body. How sadly the physico-psychical relations are ignored, not only by many parents and teachers in the education of the child, but by adults in their own conduct. The body is left to care for itself while the mind is spurred on as long as the poor, pale mortal frame can endure the strain, when death comes to claim the victim of a parent's folly and to lessen the number of the sickly "pale faces" of the nineteenth century. Surely we have well earned the title which the Indians gave to our forefathers.

"If the mind be overworked by excessive culture, while Nature is engaged in perfecting the body, the demand upon the energies of the system is too great; the one becomes exhausted, while the other is stinted of its fair proportions and dies." We are not, however, one of those who consider that studious habits and intellectual pursuits tend necessarily to injure the health or abbreviate the term of life—that mental labors are ever prosecuted at the expense of the body and must consequently hasten its decay. Such a result need not occur if attention be given to the welfare of the corporeal system and the mind be not exerted to an injudicious and excessive extent. We have numerous instances of men who have attained great intellectual prominence, and distinguished themselves by the profundity and multiplicity of their mental achievements who by temperate habits and systematic exercise have enjoyed firm health and attained a protracted existence, of which number Wm. E. Gladstone furnishes us to-day a notable example. Yet the inclination of ambitious and intellectual minds is to carry their mental labors to an inordinate and injudicious extent, so that those who possess the highest powers of mind seldom attain great age. Sinclair, in his "Code of Health and Longevity," states that in the long list of persons who had lived above a century there is but one individual, Fontanelle (who lived to within a few days of 100 years) at all distinguished for his intellectual powers, while there are above 1,700 others remarkable for little else than the number of their years. A well-developed and properly exercised body is especially adapted for the proper performance of the mental functions; at the same time a mind duly occupied is essential to the highest enjoyment of health. Great advantage accrues from varying the kind of mental exercise so that the mind does not become wearied with any subject and thus render its further pursuit irksome. To what extent the mind may be exercised without an ill effect upon the body is a question difficult of solution, and each individual must estimate this point as well as he can from his own experience We have thought very much upon this topic, especially during our student life, and wished that we were able to draw the proper estimate of physical and mental exercise so as to secure harmony of the relations existing between the body and mind and thus obtain the most perfect development of the one, with the highest possible culture of the other. We can most feelingly quote Baron Von Swieten (1776) on this subject who says: "There is no state on all sides happy; for of all men, those who give themselves up to the study of wisdom might live the most happy if they were not obnoxious to disease from

that very cause. Happy are they who can so conduct the healthy exercise of the body together with the improvement of the mind!"

"'Tis the great art of life to manage well
The restless mind."

"At no time," remarks Dr. Bell, of Philadelphia, "before or since, has the salutary union between mental and bodily exercise been so fully recognized as in ancient Greece and Rome, where the gymnasiæ and baths were resorted to alike by the philosopher, and the soldier, the youthful aspirant for fame and the staid citizen. Often the same person might be seen passing from the instructions of the professed athletæ to the lessons of the sages and orators in the lyceum and the academy; thus while they secured to themselves health and bodily vigor, which should enhance their personal enjoyments and civic usefulness as defenders of the state, they acquired also those accomplishments that give virtue and dignity to the individual, and by reflection to his country and his age. However much we may choose to overlook this connection between mental and bodily purity and health, it is not less a portion of natural law; and if true of the one is equally so of the many, and if true in private it is *à futuri*, more valid still in public hygiene. When the historian speaks of fermentation among the masses, the poor, the dissolute and the reckless in a city or state, his language is scarcely figurative and he may very appropriately add that this tendency to outbreak and disorder is kept up, if it be not in a great degree produced, by physical deterioration and taint; by impure air causing bad blood and disordered brain; added to filth and bad food continually irritating the nervous system and giving rise to a host of abnormal sensations. It is no straining in causation to say that sickness or disorder in the body politic is often the manifestation, as it is the effect, of a neglect of public hygiene. So, also, beyond all doubt, have nations been driven into war, with its ever attendant horrors and atrocities, owing to the dyspeptic condition or splenetic humors of princes and ministers of state."

We have already given many illustrations of the influence of the interior life upon the body, and though we may be charged with repetition we can not close our remarks on this influence better than in the words of Newnham: "Witness the suffusion of the countenance in blushing; the shrunk features and the pale gooseskin produced by alarm; the chattering of the teeth under fear; the increase of various secretions under mental emotions, as of the tears in sorrow or the bile in anger; the palpitation of the heart under almost every sudden emotion; the short and quickened breathing of expectation; the oppressed and stifled respiration of intense and harrowing emotion; the arrested and almost imperceptible action of breathless anxiety and expectancy; the influence upon the muscles of expression of the countenance, alternately lighted up with joy or worn with anxiety and suffering, and the thousand varied emotions which they are capable of expressing; the plump portliness of the man at ease and the extreme thinness of the victim of deep disappointment, or of any long continued devouring passion; so that to be dried by grief, to be devoured by remorse, to be consumed by sorrow are not only common expressions but literal representations of actual bodily conditions."

We have yet to speak of the psycho-physical relations in the solemn moment of death. The phenomena which occur differ with different individuals, depending as they do upon the direct cause of, and the parts or organs which are first affected by death. Bichât has stated that death commences from the heart, the lungs or the brain. In the first case, the psychical functions would be the latest and slowest in ceasing their manifestations. In the second case, the functions of the brain are early impeded and the mind would the more quickly cease to manifest itself, while in the third case the nervous center being primarily affected, a cessation of mental manifestations are the first to occur, consciousness being lost several hours before somatic death occurs. Of the senses, observation proves that hearing is the last to expire. Again, the mental operations at the hour of death vary in different individuals, seeming often to partake of the quality of those that were most prominent during life and often as has been remarked, "the ruling passion is strong in death."

But however much these relations of body and mind may be modified in the solemn hour of death, here our investigation must cease; the subject of them no longer exists; the relations are sundered; the body is no longer sensible to the excitement of the mind and our eyes are veiled from the spirit's departure, and we are to seek further knowledge of its relations elsewhere than in this life. "If no *mortal* lifts the veil we must seek to be immortal."[2]

We have thus far considered our subject sufficiently, we trust, to prove it not only to be one of profound interest to every thoughtful individual, but of much practical importance to the physician. By a knowledge of these relations he may frequently be greatly aided, not only in making a correct diagnosis, but fitted for a more successful treatment of disease. From physical signs he may determine psychical causes and from psychical may infer somewhat of somatic. Though a single sign may be of little import taken alone, yet if it coincides with others it is often of great value in determining the character of a disease. Constitutions differ so materially that we can not mark out an invariable law that will govern all cases, but can only make an approximation in our description of what may be expected from certain psychical or somatic conditions. In lively active individuals we may expect a replete and brisk action of the vessels, while in phlegmatic persons the contrary conditions will be present. Intense anxiety and melancholy will indicate, with other symptoms, organic disease of the heart or large vessels: Thus we might present a long list of psychical or physical signs which are of special interest to the medical practitioner but our limits forbid. The physiognomy of the human countenance in sickness is an open book to the medical attendant; to his eye is presented a mirror of many morbid conditions as the countenance changes with the varying stages of the malady, assuming every shade of expression from that indicative of trifling functional derangement, to that which characterizes grave disease. The positions that we have taken we do not assume or affirm

[2] Origin of man and of life.—Gen. II, 7. "And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul."

The decree of punishment.—Gen. III, 19. "In the sweat of thy face shalt thou eat bread, till thou return unto the ground; for out of it wast thou taken; for dust thou art and unto dust shalt thou return."

Man's final separation of body and soul.—Ecc. XII, 7. "Then shall the dust return to the earth as it was; and the spirit shall return unto God who gave it."

to be immutable laws; they are but general principles founded upon the observation and experience of many writers.

Our paper has acquired great length, although we have only taken a very brief survey of this important subject. These facts we are to use as points collected for our study, test, and possibly modification, and also as nuclei around which we are to add others as our careful observation or experience shall enable us to do. And in our investigations we should remember,as Dr. Feuchtersleben has wisely remarked, that, "in all human research and endeavors, it is indispensably necessary carefully to avoid every partial mode of consideration, to hold fast every problem as an enlightening point of instruction; the radii are to be sought and traced everywhere to their origin, but that this process is most especially to be held sacred in our profession, which in every concrete instance presents a countless number of circumstances all equally worthy of attention to every one who has learned, not merely to spell, but to read the book of life." Would time permit we might next consider the changes in the psycho-physical relations which occur in the phenomena of somnambulism and delirium. It would also be interesting to sum up the diseases in which these relations specially depart from their normal action. Proceeding with our investigations into the pathology of the psycho-physical relations we would next consider the various forms of insanity and amentia, but this is a subject too extensive to allow us to examine at this time. As we have found many diseases to be more or less compound, neither purely somatic or purely psychical, but in which both body and mind are more or less involved, we at once appreciate how important a knowledge of the physiology, pathology and therapeutics of the psycho-physical relations are to the physician in the practice of his profession, especially in treating the various psychopathies. The psychological physician should possess in a high degree the quality of self-command, and must be able by his personal demeanor to obtain influence over the minds of others. He is to be the physician not only, but combine in his person the physician, remedy and vehicle. Remedies may be applied through the senses, especially sight and hearing. "Light acts as an excitant, twilight as a calmant; darkness according to circumstances acts as both. The positive colors act as stimulants, the negative as sedatives."

The mind may be excited by noise, soothed by silence, and cheered by harmony and melody. The effect of music is exceedingly pleasant in some cases. Bishop Beveridge makes the following observation descriptive of its effects upon him: "It calls in my spirit, composes my thoughts, delights my ear, recreates my mind, and so not only fits me for after business, but fills my heart at the present with pure and useful thoughts, so that when the music sounds the sweetest in my ears, truth commonly flows the clearest into my mind, and hence it is that I find my soul is become more harmonious by being accustomed so much to harmony." But an enthusiastic pursuit of the study of music has induced insanity, and it is said that mad musicians are the maddest of the mad.

Hope is a most important coefficient to the physician. He is often an observer of its guardian power in sustaining the victim during the ravages of dire disease. It is a power that every physician should avail himself of, if possible, though it should be used wisely and with a strict adherence to truth, else the confidence that was reposed in him will be lost, and the confidence of the patient in his physician and the remedies employed are as essential to his recovery as hope itself, and even more so, for it can not be inspired if the power be wanting. The patient must not be deceived if his illness is to have a fatal termination. The rule being, "to speak the truth yet cheer the sufferer." The affections are to be acted upon; the physician should seek to obtain not only the respect but the affections of his patients by bestowing his with a warm and generous heart.

In closing my remarks upon the psycho-physical relations of man, I have to regret my inability to do justice to this most momentous subject. Yet I trust, however, that my feeble attempt to impress its importance has not been entirely unsuccessful. I have tried to illustrate these relations from a medical point of view, and to show that to no one is a true understanding of these relations more valuable and necessary than to the physician, while fortunately to him are presented the most ample opportunities for their study. Not a day passes but that he is called to witness illustrations of these reciprocal relations of mind and body. No age is exempt from their influence, no profession can fully hide them. A fit of indigestion or an aching tooth levels the philosopher with the common herd of mankind. All the passions, thoughts, and emotions are at work in a greater or less degree in modifying the physical condition; while every derangement of function or abnormal condition of the bodily organs is exerting an influence upon the mental state.

But the interest of the subject does not stop here. The fact of man's spiritual nature being involved in all his conditions, whether they be healthy or diseased, gives, as we have before stated, sublimity to our science. The accomplished physician has a *medecina mentis* as well as a *medecina corporis*. His mission is higher than that of a mere prescriber of the articles of the materia medica. To him, alone, does the province belong to treat the entire man. The body is not the only object of his care. Mind and matter are in man too intimately connected to be studied or treated apart. What more need be said of the ennobling influence of the study and practice of medicine? And what is there that gives it such an interest and moral grandeur, unless it be the Psycho-Physical Relation of Man!

CLINICAL HISTORY OF THE CASE OF PRESIDENT JAMES ABRAM GARFIELD.

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(*Continued from page 417*).

III.

July 24, 8 A.M. The President's skin is drenched with a profuse perspiration. His skin is cool, with a somewhat anxious expression of countenance. An examination of the wound was made by the consulting and attending surgeons, and a small pus sac was found about three inches from the external wound (in a downward direction). After consultation it was deemed advisable to make a counter opening three inches below the wound for the purpose of drainage.

The skin was sprayed with sulphuric ether to diminish the sensibility of the parts, and the opening was made by Dr. Agnew assisted by Dr. Hamilton. A large drainage tube was tied in communicating with both openings. The wound was then dressed, and he was given one ounce of Liebig's extract of beef, and afterwards three ounces of milk and one teaspoonful of rum.

July 24, 12 M. The President feels much more comfortable since the operation. His skin is much more natural in hue. He is still sweating profusely but there is no evidence of rigors. He has vomited once slightly this morning, but has taken and retained some nourishment.

July 24, 12 M. Temperature 99.8; pulse 118; respirations 24. July 24, 7 P.M. Temperature 99.2; pulse 104; respirations 23. July 24, 5 P.M.. The President is much more comfortable to-day than yesterday. He has slept a good deal at intervals during the day, and has retained all the beef essence given. To-day Professors Bell and Newcomb came to the President's room with Mr. Tainter and demonstrated the use of the induction balance for discovering bullets in the human body. Professor Agnew returned to Philadelphia in the 5:40 P.M. train, but Professor Hamilton remained over during the night in Washington. July 24, 6 P.M. The wound was dressed, and thoroughly washed out with a weak solution of carbolic acid (one-fourth of 1 per cent). He received a hypodermatic injection of one-eighth of a grain of sulphate of morphia at 7 P.M., and slept tolerably well during the early part of the night. He vomited once at about 10:30 P.M. He took small quantities of beef juice and milk during the night. At 3:30 A.M. he had a profuse sweat. He was rubbed off with a solution of alum and then with alcohol.

July 25, 8 A.M. The President seems quite cheerful this morning, and takes his liquid food freely and with relish. He passed a comfortable night, and has had no rigor since yesterday. July 25, 8:39 A.M. Temperature 98.4; pulse 96; respirations 18. July 25, 12 M. Temperature 98.4; pulse 106; respirations 20. July 25,7 P.M. Temperature 101.8; pulse 110; respirations 24. At 12 M. he took six grains of quinia (bisulphate) and at 3:30 P.M. he complained of feeling cold. Bottles of hot water were placed at his feet, and he was well rubbed. He vomited once, and after the vomiting he had a profuse sweat. He was quiet but did not take much nourishment during the day with the exception of beef essence. He had a hypodermatic injection of one-eighth of a grain of morphia at 7 P.M. He slept for an hour or two, and at 11:30 P.M. had another slight rigor. He complained of chilliness which was followed by fever and sweat during the night. Professor Agnew arrived at 12 (midnight). The President was somewhat restless during the night, and the fever which had subsided during the evening rose again about midnight, and continued until 3 A.M. after which it again subsided.

July 26, 8:30 A.M. Temperature 98.4; pulse 102; respirations 18. July 26, 12 M. Temperature 98.4; pulse 106; respirations 19. July 26, 7 P.M. Temperature 100.7; pulse 104; respirations 22. July 26, 8 A.M. The President is quiet and does not complain of pain.

July 26, 8 A.M. The wound was dressed, and Dr. Agnew enlarged the opening over the rib, and extracted therefrom a fragment of bone, which had been driven in by the bullet, and was lying loose in the inner track of the wound. Some fragments of muscle and connective tissue were also removed. The largest piece of bone removed was about an inch in length. There were also small particles of bone taken out. The wound was well irrigated with the quarter per cent. solution of carbolic acid, and two drainage tubes were fastened in the lower wound, one entering the cavity, and one draining the lower opening of the wound. The President bore the operation remarkably well, and in fact his condition seemed much more comfortable after the dressing and operation than it was before.

July 26, 12 M. He took six grains of bisulphate of quinia. During the afternoon he had several good naps, and took liquid nourishment quite freely. At 3:39 P.M. the President had a slight sweat. 5:30 P.M. He was given six grains of bisulphate of quinia. 11 P.M. The President had his hypodermatic injection of one-quarter of a grain of sulphate of morphia at 7:30 P.M.; after a short time he went to sleep and slept until 11 P.M. when he awoke, and after a little while he went to sleep again, and slept soundly until 5 A.M.

July 27, 7:30 A.M. This morning he took beef essence, and four ounces of koumiss. July 27, 8 A.M. Temperature 98.4; pulse 94; respirations 18. July 27, 12:30 P.M. Temperature 98.4; pulse 90; respirations 18. July 27, 7 P.M. Temperature 98.8; pulse 96; respirations 20.

July 27, 8:30 A.M. The President's wound was dressed and looked well. There were no rigors nor febrile rise of temperature during the day. He took his liquid nourishment freely and without any apparent disorder of the stomach. He received his hypodermatic injection of one-fourth of a grain of sulphate of morphia at 7:40 P.M. and slept well during the night, sleeping at one time three hours without interruption.

July 28, 8 A.M. The President was very cheerful this morning, and seemed to feel comfortable. July 28, 8 A.M. Temperature 98.4; pulse 92; respirations 18. July 28, 12:30 P.M. Temperature 98.5; pulse 94; respirations 18. July 28, 7 P.M. Temperature 100.5; pulse 104; respirations 20.

Professor Hamilton was present at the morning dressing of the wound. During the morning the patient took bouillon, beef juice, milk, with an egg beaten up in it, and one teaspoonful of rum. At 10:18 A.M. he took six grains of bisulphate of quinia. During the morning the President's room was thoroughly aired and cleaned, and all the carpets and upholstered furniture were removed. He took a good deal of liquid food to-day, and had no febrile rise until 4 P.M. when he complained of feeling a little feverish. The wound was again dressed at 6 P.M. and the drainage tube being found to be obstructed was removed, and a larger tube inserted. At 7:40 P.M. he received a hypodermatic injection of one-eighth of a grain of sulphate of morphia, and went to sleep at 9 P.M. At 10:30 P.M. he complained of a sharp pain over the region of the bladder; this was relieved by hot fomentations and he went to sleep again at 11:30 P.M. At 11:30 P.M. his temperature was 99.8; pulse 98; respirations 19.

July 29, 7 A.M. The President slept well, and awoke feeling refreshed. The wound was dressed at 8:15 A.M. and was found to be in an excellent condition. He is still taking liquid food only, consisting of milk and egg with a little rum alternating with

koumiss and beef juice. July 29, 8:30 A.M. Temperature 98.4; pulse 92; respirations 18. July 29, 12;30 P.M. Temperature 98.4; pulse 98; respirations 19. July 29, 7 P.M. Temperature 100; pulse 98; respirations 20.

July 29, 8:30 A.M. Immediately after the evening dressing yesterday the President's afternoon fever began to subside. He bore the dressing of his wound well, and exhibited very little fatigue after its completion. 7 P.M. The President has been cheerful during the day. His wound was dressed the second time at 1:30 P.M. The febrile rise came on later and was not so marked as yesterday. He received his usual hypodermatic injection of one-eighth of a grain of sulphate of morphia about 8 P.M. and slept well during the night taking liquid nourishment at 1, 3 and 6 A.M.

July 30 8:30 A.M. The slight febrile rise of yesterday afternoon had subsided by midnight, and this morning his temperature is again normal. July 30, 8:30 A.M. Temperature 98.5; pulse 92; respirations 18. July 30, 1 P.M. Temperature 98.5; pulse 98; respirations 20. July 30, 7 P.M. Temperature 100.2; pulse 104; respirations 20.

July 30, 8:30 A.M. The President slept well until 8:40 A.M. His wound was then dressed, and found to be discharging freely. At 9:10 A.M. he took some rare beefsteak and scraped beef for breakfast, following this with six ounces of koumiss. At 10 A.M. he took six grains of bisulphate of quinia. During the day he received a good share of liquid food, had several naps, and expressed himself as feeling quite comfortable. A head rest elevating the upper portion of his body was placed under the mattress of his bed, by means of which his head and shoulders have been somewhat raised, and he expressed himself as much pleased by the change of position. The afternoon rise of temperature was moderate and did not commence until 5 P.M. Professor Agnew arrived to-day, and was present at the evening dressing along with Professor Hamilton. (Professor Hamilton has remained continuously on duty with the attending surgeons since July 27). A small drainage tube was passed farther into the cavity of the wound than heretofore, and the wound was thoroughly washed out with the quarter per cent. solution of carbolic acid. He received a hypodermatic injection of one-twelfth of a grain of sulphate of morphia, and went to sleep at 8:15 P.M.

July 31, 8:39 A.M. The President slept well during the night, and expressed a desire for solid food. After his wound was dressed he took a lamb chop for breakfast. Professor Hamilton returned to New York this morning while Professor Agnew remained in Washington. The afternoon fever of yesterday subsided earlier than the night before, and had quite disappeared by 10 P.M.

July 31, 8:30 A.M. Temperature 98.4; pulse 94; respirations 19. July 31, 12:30 P.M. Temperature 98.5; pulse 94; respirations 19. July 31, 7 P.M. Temperature 99; pulse 104; respirations 20.

The President bore the morning dressing of his wound well. He took and retained an ample supply of nourishment to-day, and seems to improve in his general condition. An enema was given him this afternoon. The wound looks well, and the secretion from it is quite abundant. The wound was dressed the second time at 6 P.M. At 7:30 P.M. he received his hypodermatic injection of one-twelfth of a grain of sulphate of morphia, and slept well during the night.

August 1, 8 A.M. The President awoke quite refreshed this morning and said he had spent the best night since his injury. His wound was dressed at 8:35 A.M. and quite a free flow of pus came from it. After the dressing Professor A. G. Bell and Mr. Tainter tried for the second time the induction balance, for the purpose of endeavoring to locate the bullet in the President's body. This was an apparatus composed of a series of induction coils, so arranged that on being brought near a metallic body the electric balance would be disturbed, and a sound produced. Both Professor Bell and Mr. Tainter from these experiments located the ball in a space about two inches in diameter, somewhat to the right, and four and a half inches below the umbilicus. As will be seen hereafter this localization of the bullet was an error, and aided in confirming the erroneous diagnosis, which had been previously made by the consulting and attending surgeons as to the location of the bullet. The pus from the wound (though it was thoroughly washed out twice, and sometimes three times a day, and allowed free exit by means of drainage tubes) gradually formed a sinus or false passage in a downward direction from the wound. The transverse wound through the body of the first lumbar vertebra, from its irregular and rough character entirely prevented the passage of any probe in that direction; hence from all the means of information at our disposal, we were led to the belief that the bullet was located in the right side of the abdomen below the point of entrance. After the testing of the induction balance the President took some beefsteak, toast and gravy and a cup of coffee. At 11 A.M. he was given six grains of bisulphate of quinia, and this dose was repeated at 4:30 P.M. During the day the President seemed somewhat tired, and took several naps. He was given the usual amount of liquid food including koumiss. He complained during the afternoon that the koumiss had seemed to disagree with his stomach. Food was withheld from him for a short time with the effect of relieving him.

August 1, 8:30 A.M. After the slight rise of temperature yesterday afternoon it became normal early in the evening, and so continued during the greater part of the day. August 1, 8:30 A.M. Temperature 984; pulse 94; respirations 18. August 1, 12:30 P.M. Temperature 98.4; pulse 100; respirations 19. August 1, 7 P.M. Temperature 99.5; pulse 104; respirations 20. August 1, 7:45 P.M. He received one-eighth of a grain of sulphate of morphia hypodermatically, and slept well during the night.

August 2, A.M. The President slept well until 8 A.M., when his wound was dressed as usual. A new soft long catheter (No. 8) was passed into the opening of the eleventh rib, and passed downward into the abdominal cavity between three and one-half and four inches, and allowed to remain. Another drainage tube was put into the external lower wound (the one made by the incision) and both were kept in place by strips of adhesive plaster. Discharge of pus from wound was free.

August 2, 8:30 A.M. Temperature 98.4; pulse 94; respirations 18. August 2, 12:30 P.M. Temperature 98.4; pulse 99; respirations 19. August 8, 7 P.M. Temperature 100; pulse 104; respirations 20.

August 2. The President had an enema at 2:30 P.M. The wound was dressed at 6 P.M. and he complained of darting pains during the evening radiat-

ing from wound. The discharge from the wound was quite profuse. He had at 7:45 P.M. one-eighth of a grain of sulphate of morphia hypodermatically, and slept well during the night.

August 3, 8 A.M. The President passed a comfortable night and this morning the long, soft rubber tube was removed from the wound (it seeming to cause irritation), and a short, wide drainage tube was inserted in its place. Dilute solution of permanganate of potash was used to wash out the wound instead of the dilute solution of carbolic acid. The strength of the solution of permanganate used was eight grains to two pints of water at the temperature of 100 F. Professor Agnew (who had been on duty with the attending surgeons since July 30) returned to Philadelphia at 9:30 A.M. At 5:30 A.M. the President took six ounces of koumiss, at 7:30 four ounces of bouillon and two teaspoonfuls of beef juice, and at 9 A.M. six ounces of milk and two teaspoonfuls of rum. He went to sleep at 9:45 A.M. and slept until 10:45 A.M. when he took six grains of bisulphate of quinia, and the same dose at 5:40 P.M. At 11:30 A.M. he breakfasted and took a little steak, toast and potato. He passed a very comfortable day. The discharge from the wound was profuse and laudable in character. During the afternoon he had scarcely any pain, and his temperature remained normal until the evening, when it was one degree above. During the day he took a good supply of liquid food.

August 3, 8:30 A.M. Temperature 98.4; pulse 96; respirations 18. August 3, 12:39 P.M. Temperature 98.4; pulse 100; respirations 19. August 3, 7 P.M. Temperature 99.4; pulse 102; respirations 19.

He received his hypodermatic injection of one-sixteenth of a grain of sulphate of morphia at 8 P.M. and went to sleep at 9 P.M. He slept well during the night, waking at 3 A.M. for a short time. He then slept until 8 A.M. of August 4. Professor Hamilton arrived last night (August 3) and will remain until Professor Agnew returns. August 4. Wound was dressed at 8 A.M. The drainage tube was removed and a smaller tube inserted. Diet the same as yesterday. 12:30 P.M. He was given six grains of bisulphate of quinia. At 12 M. Professor Hamilton made a careful examination of the President, and found a small point of induration, one and a quarter inches to the left of anterior superior spinous of right ilium, and about the center of a line drawn from one anterior superior spinous process to the other. The President had an enema at 4 P.M. and at 6 P.M. he took six grains of bisulphate of quinia.

August 4, 8:30 A.M. Temperature 98.4; pulse 90; respirations 18. August 4, 7 P.M. Temperature 100.2; pulse 102; respirations 19.

The President passed a good day without drawbacks of any kind. He took his nourishment well, and has shown little fatigue after his dressings, and changes of position. The wound looks well. The President took a fair amount of liquid food during the day, and went to sleep at 9 P.M. and slept well during the night. He received no morphia at bedtime to-night.

August 5, 8:30 A.M. The President slept naturally during the greater part of the night, though he has taken no morphia for the past twenty-four hours. His improved condition warranted several days ago a diminution in the quantity of morphia administered hypodermatically at bedtime, and it was reduced at first to one-twelfth, and then to one-sixteenth of a grain in the twenty-four hours without any unpleasant results, and finally has been altogether dispensed with. Yesterday and to-day only two bulletins have been issued, in place of three as heretofore. August 5, 8:30 A.M.. Temperature 98.4; pulse 88; respirations 18. August 5, 7 P.M. Temperature 100.4; pulse 102; respirations 19. August 5, 6 A.M. He took seven ounces of koumiss. At 9:10 A.M. seven ounces of milk with two teaspoonfuls of rum. At 11:40 A.M. he breakfasted on toast, beefsteak and potatoes in small quantities. At 9:30 A.M. he was given six grains of bisulphate of quinia. At 12 M. he took four ounces of koumiss. At 1 P.M. he took six ounces of milk and two teaspoonfuls of rum. At 3:10 P.M. he had three and a half ounces of chicken jelly. At 5 P.M. he took beef juice and bouillon, and at 7:30 P.M. he took six ounces of milk and two teaspoonfuls of rum. Wound was dressed at 6 P.M. and the discharge was abundant. No hypodermatic injection of morphia was given this evening. The President did not get to sleep until after 9 P.M. and awoke at 11:15 P.M. for a short time and then slept through the night until 6:30 A.M. August 6.

August 6, 3 A.M. The President took three ounces of Valentine beef juice, and two and a half ounces of bouillon. At 7 A.M. he took six ounces of milk with two teaspoonfuls of rum. 8 A.M. Dressed the wound as usual. The cavity of the wound was measured and found to contain two ounces of fluid. To-day it was deemed best to suspend the administration of the bisulphate of quinia, and to give instead two teaspoonfuls of compound tincture of gentian three times a day. Claret was also directed to be given as a beverage. He took during the morning four ounces of the claret. Breakfast consisted of a small quantity of steak, toast and potatoes.

August 6, 8:30 A.M. Temperature 98.4; pulse 92; respirations 18. August 6, 12:30 P.M. Temperature 98.5; pulse 100; respirations 19.

The President passed a comfortable morning but towards the afternoon he complained very much of exhaustion from the excessive heat. The external temperature was such that it was found impossible to keep the temperature of his room below 90 degrees F. without closing the doors and windows, which was not thought prudent. During the day the President took a good deal of liquid, but scarcely any solid food. Towards the afternoon his febrile symptoms seemed to become more aggravated, and he was greatly exhausted by the evening dressing. No quinia was given to-day, and his tongue seemed to clear off. At 8 P.M. Professor Agnew arrived. At 10 P.M. the President took seven ounces of milk with three teaspoonfuls of rum. He soon afterwards went to sleep, and slept the greater part of the night

August 7. From 1 to 5 A.M. the President had a slight febrile rise which passed off by 8 A.M. At that hour his temperature was 98.7. At 6 A.M. he took six ounces of koumiss, at 8:15 six ounces of milk, and two teaspoonfuls of rum. At 11 A.M. he breakfasted on a little steak, toast and potatoes. At 11:15 A.M. he had four ounces of koumiss. At 1 P.M. he had seven ounces of milk. At 3:20 P.M. he took four ounces of claret. The President complained so much of the compound tincture of gentian that it was stopped, and six grains of bisulphate of quinia given instead. The President complained to-day of slight chilliness, and of pain in the region of the wound and in the limbs.

August 7, 8:30 A.M. Temperature 98.7; pulse 96; respirations 18. August 7, 12 M. Temperature 100; pulse 104; respirations 20. August 7, 7 P.M. Temperature 101.2; pulse 104; respirations 20.

August 7. The President was fairly comfortable during the day, although his temperature began to rise earlier than yesterday, and rose almost as high. At the morning dressing it was found that the entrance of wound through the eleventh rib was apparently obstructed by the drainage tube with accumulation of pus in the cavity of the wound. At 6 P.M. the wound was dressed as usual. The drainage tube was temporarily removed, and the President was placed on his right side for the purpose of promoting drainage from the wound, for about an hour during the afternoon and evening. The President passed a quiet night, and slept well without the use of any anodyne. The rise of temperature of the afternoon subsided during the evening and did not recur at any time in the night.

(To be continued.)

Report of the Committee on Revision of Constitution, By-Laws and Code of Ethics of the American Medical Association, with Amendments.

To the President and Members of the American Medical Association:

Gentlemen: Your Committee, to which was committed the task of studying the Constitution and By-Laws of the American Medical Association, with a view of determining whether they could be changed in any manner so as better to promote the development of the Association, and better to advance the interests which it represents, have had the same under most careful consideration, and submit the following, which has already been published in the Journal of the Association and other medical periodicals.

AMERICAN MEDICAL ASSOCIATION.

CONSTITUTION AND BY-LAWS.

HISTORY.

In May, 1846, a medical convention was held in the city of New York to consider measures for the elevation of the medical profession in all its constituent elements, and for the promotion of its organic unity. After much discussion this convention declared that a National organization of every State and interest was demanded. Committees were appointed to draft a Constitution, By-Laws and a Code of Ethics, and to report at a meeting to be held the following year. Accordingly, in May, 1847, representatives of the profession of the United States met in Philadelphia, heard and discussed reports of the committees, organized under the name of the American Medical Association, and adopted a Code of Ethics, a Constitution and By-laws, which, with slight alterations, have continued to direct the organized movements of the profession until the present time. In compliance with the instruction of the Association in June, 1892, the following Constitution and By-Laws, are formulated for the purpose of promoting the best activity of a general medical organization of the profession in North America:

CONSTITUTION.

Name.—This organization shall be known as The American Medical Association.

MEMBERS.

Members.—Membership shall be limited to the members of the several affiliated State medical societies recognized thereby or represented therein. As membership in these societies is open to all reputable practitioners in each State, the membership in the American Medical Association is open to all reputable physicians in North America.

All persons now members of the Association shall continue such so long as they remain in good standing in their State society, and pay their annual dues. If they desire to participate in any annual meeting, they shall present to the Committee of Arrangements of said meeting a certificate from the officers of their State or local society to the effect that their standing is good, and one from the Treasurer of the Association showing that all dues are fully paid. To all presenting such certificates, the Committee of Arrangements shall issue the credentials necessary for active participation in the annual meeting.

All members of recognized State or local medical societies may become members of the Association by presenting to the Committee of Arrangements at any annual meeting a certificate from the officers of their society showing that they are in good standing therein, and a certificate from the Treasurer of this Association showing that they have paid their annual dues.

All members of the recognized State or local medical societies who are unable to attend the annual meeting may become members of the Association by sending to its Treasurer, at any time, a certificate from the officers of their society of their good standing, and remitting the annual dues.

All members who have fulfilled these two conditions shall have equal rights and equal responsibilities in the Association, and shall regularly receive the Association Journal.

All State medical societies, with their constituent local societies, shall be recognized by the American Medical Association if they accept its Code of Ethics.

Members of Canadian and Mexican medical societies shall be admitted to membership upon the same terms as those in the United States. The regular graduates of such schools and colleges of dentistry as require of their students a standard of general education and a term of professional study equal to those of the best class of medical colleges in this country, and embrace in their curriculum all the fundamental branches of medicine, differing chiefly by submitting practical and clinical instruction in oral and dental surgery in place of practical and clinical instruction in general medicine and surgery, shall be recognized as members of the regular profession, and shall be eligible to membership upon the same terms as other members.

No persons shall be permitted to take part in any annual meeting until they have completed the conditions of membership at that meeting, and can exhibit certificates to this effect from the Committee of Arrangements. But suitable persons may be introduced as guests either at the general session or the Section sessions, and be invited to engage in the scientific and social exercises of the meeting without taking part in the transaction of business.

MEETINGS.

Meetings.—The regular meetings shall be held an-

nually at such time and place as may be advised by the Business Committee and ordered by the Association. The details of these meetings are stated in the By-Laws.

OFFICERS.

Officers.—The officers of this Association shall be a President, four Vice-Presidents, one Secretary, one Assistant Secretary, a Treasurer and a Librarian. These officers shall hold office during one year or until their successors are elected, and shall enter upon their duties immediately after election.

The President shall preside at the meetings, preserve order and decorum in debate, giving a casting vote when necessary, and perform all the other duties that custom and parliamentary usage may require. At the opening session he shall deliver an address to the general meeting, not to exceed thirty minutes in length.

The Vice-Presidents may be called upon to assist the President in the performance of his duties, and during his absence, or at the request of the President, one of them shall officiate in his place.

The Secretary shall record the minutes of the general sessions and authenticate the proceedings; give due notice of the time and place of the next annual meeting; notify all members of committees of their appointment and the duties assigned to them; hold correspondence with other organized medical societies, both domestic and foreign, and carefully preserve the archives and unpublished transactions of the Association.

For his personal expenses in attending the annual meetings the Secretary shall draw upon the Treasurer of the Association.

The Assistant Secretary shall aid in recording and authenticating the proceedings of the Association; serve as a member of the Committee of Arrangements, and perform all the duties of the Secretary temporarily, whenever that office shall be vacant by death, resignation or removal.

The Treasurer shall have the charge and management of the funds of the Association. He shall give the Board of Trustees bonds for the safe keeping and proper use and disposal of his trust. Through the same Board he shall present his accounts, duly authenticated, at each regular meeting. He shall each month furnish the President of the Board of Trustees with a statement of accounts for the guidance of the Board in its expenditures. For his personal expenses in attending the annual meetings, he shall draw upon the treasury through the President of the Board of Trustees.

The Librarian shall receive and preserve all property in books, pamphlets, journals and manuscripts presented to or acquired by the Association, record their titles in a book prepared for this purpose, and acknowledge the receipt of the same. He shall deposit these documents in such place and manner as the Association may direct, after advising with the Board of Trustees.

STANDING COMMITTEES.

The Committee of Arrangements shall be composed of at least seven members, of whom the Assistant Secretary shall be one, all residing in the place at which the Association is to hold its next annual meeting. It shall provide suitable accommodations for the meeting; shall verify and report upon the credentials of membership; shall issue credentials of membership to such as fulfill the conditions; shall publish the rules governing the reading and discussion of papers and the order to be observed in the business of the general and sectional meetings; shall receive and announce all papers communicated, and, with the several Section Secretaries determine the order in which the papers shall be read and discussed; shall prepare a list of members present on a separate roll for convenience in calling the ayes and nays, when these are demanded; and shall cause all members to register their names, residences and temporary addresses during the annual meeting, and the name of the Section in which they will severally vote for Section officers. The expenses of a hall for the general meeting, of rooms for the Sections, and of cards of membership, shall be met by the Association. Should the Committee incur other expenses, it must meet them from its own resources.

This Committee shall be nominated by the Business Committee, and elected by the Association.

The Board of Trustees shall consist of nine members, three of whom shall be elected annually on nomination of the Business Committee, and serve for three years. This Board shall manage all matters relating to finance and publication. It must provide for and superintend the publication and distribution of all such proceedings of the Association as may be ordered to be published, in such manner as the Association may direct. In doing this it shall have authority to appoint an editor and such assistants as may be necessary, and to determine their salaries. It shall procure and control such materials as may be necessary for the performing of the duties assigned it. To the Board or its representatives must be delivered, during the annual meeting, or as soon thereafter as is possible, by the Secretary of the Association and by the Section Secretaries or Executive Committees, all records of meetings, papers or discussions, and such other documents as were ordered published by the Association.

All money received by the Board of Trustees or its agents, resulting from the discharge of the duties assigned them, must be paid to the Treasurer of the Association, and all orders for disbursements of money, in any way connected with the work of publication, must be indorsed by the President of the Board of Trustees. It shall further be the duty of the Board of Trustees to hold the official bond of the Treasurer for the faithful execution of his office; to annually audit and authenticate his accounts, and present a statement of the same to the Association. This report must specify the character and cost of all publications of the Association during the year; the number of copies still on hand, and the amount of all other property belonging to the Association, under its control, with such suggestions as it may deem necessary. It shall yearly publish a list of members, their addresses in full, year of admission, the Constitution and By-Laws and Code of Ethics, and such other information as may be deemed useful, for distribution to the members at each meeting.

At the opening of each volume it shall publish a disclaimer by the Association for any responsibility for opinions expressed in the volume.

To this Board must be referred all propositions for the appropriation of money, to be considered and reported upon before the final action on the same by the Association.

The General Business Committee shall be com-

posed of the several Section Executive Committees, selected as hereafter described. It shall hold daily meetings during the sessions of the Association, and such other meetings as may be deemed necessary for the performance of its duties. All matters of business not provided for by the Committee of Arrangements, the Board of Trustees, the Judicial Council and Special Committees, shall be referred to it without debate, for consideration and report to the Association. In general, this Business Committee shall give especial attention to the interests of the Association as a whole, and through these interests shall seek the development of the Sections; it shall consider all matters of business referred to it by the Association, and report upon them at the earliest possible moment, when the Association may accept or reject said report, as it may deem best.

It shall be the duty of this Committee to seek the removal of such obstacles as interfere with the cordial coöperation in the Association of all competent, honest practitioners of rational medicine throughout this continent, and to promote every means by which coöperation shall be effected and maintained.

The General Business Committee shall make and present the nominations for officers of the Association and its Standing Committees, and recommend the time and place of the ensuing meeting. It shall appoint its own officers, and adopt rules for the orderly performance of its duties. Finally, it is expected that it will perform all its duties in the interests of the advancement of scientific medicine.

The Judicial Council shall consist of twenty-one members, whose duty it shall be to take cognizance of and decide all questions of an ethical or judicial character which may arise in connection with the Association, and the Association will accept such decision as final.

Of the twenty-one members first appointed, the first seven named upon the list shall hold office one year, and the second seven two years. With these exceptions, the term of office of the members of the Judicial Council shall be three years, seven being nominated by the Business Committee yearly, and elected by the Association. The Council shall organize by choosing a President and Secretary, and shall keep a permanent record of its proceedings. The decisions of said Council shall be final upon all ethical questions referred to it by the Association, and must be accepted without debate. Such decisions shall be reported to the Association as soon as practicable.

All questions of a personal character, including complaints and protests, and all questions on the ethical standing of medical societies shall be referred at once, when presented to the Association, to the Judicial Council, and without debate.

INCOME AND EXPENSES.

The income of the Association shall be derived from subscriptions to its journal and advertisements therein, from specific publications and voluntary contributions for specific objects.

Its funds may be appropriated for the expenses of halls, for general sessions and Section meetings, and for cards of membership, and such other expenses of the annual meeting as are essential for the conduct of the routine work; for meeting the necessary personal expenses of the Secretary and Treasurer while attending the annual meetings and in conducting the necessary correspondence; for publications; for enabling standing committees to fulfill their respective duties and conduct their correspondence; for the encouragement of scientific investigation by prizes, and for defraying the expenses of scientific investigation under the instruction of the Association, where such investigation has been accompanied with an order upon the Treasurer to supply the funds necessary for carrying it into effect.

AMENDMENT.

No amendment or alteration shall be made in any of these rules except at an annual meeting next subsequent to that at which such amendment or alteration may have been proposed, and then only by the voice of three-fourths of all the members present. Provided, however, that when an amendment is properly under consideration, and an amendment thereto is offered germane to the subject, it shall be in order, and if adopted, shall have the same standing and force as if proposed at the preceding meeting of the Association.

BY-LAWS.

1. Order of Business.—The order of business at the annual meetings of the American Medical Association shall be subject to the vote of three-fourths of all the members in attendance. Until thus altered, except when suspended, it shall be as follows:

1. Calling the meeting to order by the President.
2. The report of the Committee of Arrangements on the credentials of members, after the latter have registered their names and addresses; and on such other matters as it desires to present to the Association.
3. The reception of guests of the Association.
4. The annual address of the President.
5. The reception of reports from all special committees.
6. The reading and consideration of reports of standing committees, the Board of Trustees, Business Committee and Judicial Council.
7. New business and instructions to standing committees.
8. The report of the Business Committee and the election of officers of the Association; the selection of next place of meeting.
9. Reports from the Executive Committees of the Sections.
10. Reading of the minutes by the Secretary.
11. Unfinished and miscellaneous business.
12. Adjournment.

MEETINGS.

The Annual Meetings of the American Medical Association shall be held in May if the place be in the South, and in June if the place be in the North. The day of opening of the general sessions shall be the first Tuesday after the first Monday of the month selected. The hour of opening on the first day shall be 10 A.M., and on the following days 4:30 P.M.

SECTIONS.

The several Sections shall hold their first meeting at 1:30 P.M., on the first day, and at 9 A.M. and 1:30 P.M. thereafter daily.

The several Sections are as follows:

1. Practical Medicine and Physiology.
2. Obstetrics and Diseases of Women.
3. Surgery and Anatomy.
4. Orthopedic Surgery.

5. State Medicine.
6. Ophthalmology.
7. Diseases of Children.
8. Dental and Oral Surgery.
9. Medical Jurisprudence and Neurology.
10. Dermatology and Syphilis.
11. Laryngology and Otology.
12. Materia Medica and Pharmacy.

Officers of Sections.—The officers of each Section shall consist of a Chairman, Secretary and Executive Committee. The Chairman and Secretary shall be elected annually immediately after the Section is called to order on the afternoon of the second day. During the session of the first day, the Chairman shall appoint a Nominating Committee, consisting, if practicable, of ex-chairmen of the Section, to report at the opening of the afternoon session of the second day. Election shall be by ballot.

The Executive Committee of each Section shall, when first appointed, consist of three members from among those who have been in attendance at the sessions of the Section for at least two years, to serve for one, two and three years respectively; and thereafter the retiring Chairman of the Section shall take the place upon the committee of the retiring member. It shall be the duty of the Executive Committee, in conjunction with the Chairman and Secretary, to give special attention to the interests of their own Section. Thus they shall secure the annual republication from the JOURNAL of the work of the Section, its papers and discussions, list of officers, lists of all members of the Section, with their addresses, and rules adopted by the Section for the conduct of its work, securing from the Section the funds needful for the performance of this purpose. They shall carefully edit all publications of the Section, and secure a creditable mechanical execution of the same. They shall also take such measures as in their judgment will secure the cordial coöperation of all reputable workers in their special fields in North America.

The several Executive Committees of the Sections shall meet together and form a General Business Committee of the Association, with powers and duties described under the head of the General Business Committee.

The Chairman of each Section, in addition to his duties as a presiding officer and a member of the Executive Committee, shall read a short address at the opening of the session on the first day. In conjunction with the Secretary, he shall secure from members papers to be read, and arrange for the discussion of the same. This order of Section work he shall communicate to the Chairman of the Committee of Arrangements at least one month before the annual meeting.

No paper read before the Sections shall occupy more than twenty minutes. If it be longer, the writer should make such an abstract as will bring it within the limit, and present it for discussion. No person shall discuss any paper more than once, or speak longer than fifteen minutes without unanimous consent.

No paper shall be read before any Section that is not in such condition as to pass at once from the reader's hands to the Executive Committee of the Section. Within thirty days, said Committee must forward the entire work of the Section to the Board of Trustees, with such recommendations as it deems proper. But no paper shall thus be sent by an Executive Committee that does not fall under one of the following heads:

1. Such as may contain and establish new facts, new modes of practice or new principles of real value.
2. Such as may contain the results of well-devised original experimental research.
3. Such as present so complete a review of the facts on any particular subject as to enable the writer to deduce therefrom legitimate conclusions of importance.

Other papers containing material of more or less value shall be returned to their authors, to be published as they may desire, with the statement that they were read before said Section of the AMERICAN MEDICAL ASSOCIATION.

In general it is expected that each Executive Committee will make every effort te secure for its special Section, papers and discussions which will fairly represent the active workers in their department of medicine, and to promote cordial good will among the several workers therein.

PUBLICATION OF PAPERS AND REPORTS.

All papers and reports must be so prepared as to require no material alteration or addition at the hands of authors. All Section work must be in the hands of the Trustees within thirty days after the annual meeting. Proofs will be sent authors, but they should be returned at the earliest possible moment, and unless returned within two weeks, the paper may be omitted from the JOURNAL. Every paper requiring it shall be illustrated at the expense of the Association, should it accept the same for publication. Every paper accepted is understood to be contributed exclusively to the Association JOURNAL, though brief extracts of the same may be published elsewhere. In case of an article that is of especial value, the result of expensive research or experimentation, the Trustees, at their discretion, may compensate the writer in accord with the usual price of such work.

The Board of Trustees has the power to reject any paper referred to it, unless especially instructed to the contrary by the Association.

DUES.

Each member of the Association shall pay the annual subscription to the JOURNAL of five dollars before receiving from the Committee of Arrangements the membership ticket to the annual meeting. The evidence of this shall be the Treasurer's receipt for the five dollars. Any member failing for one year to pay this subscription shall be dropped from the rolls.

DELEGATES.

The President of the AMERICAN MEDICAL ASSOCIATION is authorized to appoint members, desiring such appointment, as delegates to the several medical and scientific bodies that are in sympathy with the Association.

DUTIES OF MEMBERS.

No members shall be permitted to address the Association unless they shall first have given their name and address, which shall be distinctly announced from the chair. If desirable, the member may be required to go forward and speak from the platform.

Failure to do special committee work shall cause the offender to forfeit a continuance of the same ap-

pointment, or a place upon any other, unless satisfactory excuse is offered.

It is expected that every member will, in every available way, promote the interests of the medical profession as represented in the Association, and will conform to all its regulations in spirit and letter until they may be altered by the action of the body which formulated them.

CONDITIONS EXCLUDING FROM MEMBERSHIP.

All societies that reject the Code of Ethics of the AMERICAN MEDICAL ASSOCIATION, or intentionally violate or disregard any article of the same, are thereby of their own choice debarred from membership.

THE PREVIOUS QUESTION.

When the previous question is demanded, it shall take at least twenty members to second it. When the main question is put under force of the previous question and negatived, the question shall remain under consideration, the same as if the previous question had not been enforced.

NEW BUSINESS.

No new business, or resolutions by members, shall be introduced at the general session of the Association, except on the first and fourth days of the meetings.

ELIGIBILITY TO OFFICE.

In the election of officers and the appointing of committees by the Association and its President, they shall be confined to members present at the meeting, except in the Committee of Arrangements.

MEDICAL AND SURGICAL EXHIBIT.

There shall be no medical and surgical exhibit, under the authority or recognition of the AMERICAN MEDICAL ASSOCIATION, other than that made before the several Sections under the supervision of the Business Committee. All that is new and of value to the scientific or practical physician can thus find an appreciative audience. Experience has shown that all other exhibits detract from the work in Sections, and so lessen the attractiveness of the annual meetings to those whose presence is desirable.

Signed: H. D. HOLTON, *Chairman.*
LEARTUS CONNOR.
DANIEL E. NELSON.
BENJAMIN LEE.

AMENDMENTS PROPOSED BY A MAJORITY OF THE COMMITTEE ON REVISION TO THE REPORT AS MADE BY THEM LAST YEAR AT MILWAUKEE.

Amendment to be inserted between lines 28 and 29.[1]

Any Commissioned Officer of the Medical Staffs of the Army, Navy and Marine-Hospital Service may become a member of the ASSOCIATION by presenting to the Committee of Arrangements at any annual meeting his commission in that branch of service of which he is a member or a certificate that he holds such commission from the Surgeon-General, or officer authorized to act for him, and a receipt from the Treasurer of this ASSOCIATION showing that he has paid the annual dues.

Amendment to be inserted in line 31 after the words "their society."[1]

Or if a member of the Public Service from the Surgeon-General or Officer authorized to act for him of the corps to which he belongs.

Amendment to be inserted in line 134 after the word Committee.[1]

With one person appointed by each of the State Medical Societies, and from each branch of the aforesaid Public Service.

EXPLANATORY NOTE.—It will facilitate understanding the proposed Constitution and By-Laws if the following considerations are kept in mind:

1. The key-note to all the changes suggested is "the advancement of scientific medicine as represented in the Sections." The Sections include all the ASSOCIATION. Hence, the elevation of the Sections to a more active participation in the conduct of affairs simply locates responsibility differently and, it is believed, more satisfactorily. It will be noted that the Sections are given no power to act independently of the ASSOCIATION. No act or recommendation of their representatives becomes binding upon the ASSOCIATION until the general body has so voted. The Business Committee from the Sections simply thinks over the problems committed to it, and advises the ASSOCIATION in accordance therewith. It is believed that this Business Committee is so constituted as to fairly represent the entire ASSOCIATION and the interests of the Sections. The only additional duty imposed upon this Committee beyond that it already possesses is the nominating of the officers of the ASSOCIATION and recommending the place of meeting. The officers and the place of meeting so obviously affect the prosperity of the Sections that it seems wise for them to make recommendations. It is believed that the fact that all questions will hereafter be fully studied by representative committees of such character as to command confidence, will attract to the ASSOCIATION thousands who have hitherto stood aloof; will promote the feeling of fair play between individuals, and give assurance to all that hereafter no ill-considered action will be taken by this great body.

2. Radical changes are made in the conditions of membership. It will be seen that but one kind of members is provided for. To discriminate between the worthy and unworthy has been referred to the several State societies. If these societies or the proper officer of one of the specified Medical Corps indorse an individual as worthy in their several States or respective Medical Corps, then the AMERICAN MEDICAL ASSOCIATION accepts them without question, and enrolls them among its members on their payment of the annual dues. This membership can be retained indefinitely by the annual presenting of a certificate of good standing in the State society of which the individual is a member, and paying the annual dues. Thus it is possible for every member of the profession in the North American continent to become and remain an active member of the ASSOCIATION. No person can become a member of the ASSOCIATION who does not become a member of a State society or Medical Corps and retain his active membership therein. It will be noted that the term, "State society," is made to include the Territories and the District of Columbia. It also includes Mexico and Canada upon the same conditions as the States. Distinguished gentlemen from other countries are cared for as guests either of a Section or the general ASSOCIATION.

3. The general meetings of the ASSOCIATION are reduced to the shortest space possible consistent with the doing of the necessary routine work. On the other hand, the Section meetings are lengthened to the greatest possible extent. The reputation of the ASSOCIATION, its power to advance the bounds of medicine, its attractiveness to the tens of thousands of doctors, must lie in the Section activities. Only here can be obtained adequate compensation for absence from active practice, with its necessary financial losses; for long and tiresome journeys; and for expenditure of a considerable sum from the scanty surplus of the average doctor's income.

Meanwhile, it is believed that the new features provide for the more satisfactory transaction of all business that may come before the ASSOCIATION. By adopting the document as presented, the ASSOCIATION will have provided for the study of every question by experts previous to its consideration by the ASSOCIATION. It thus will be able to act with more tact and wisdom.

It is believed that the adoption of the proposed organic laws will promote the best interests of the ASSOCIATION, of its Sections, of scientific medicine, of the several State societies, and of every intelligent practitioner of medicine, and hasten the organic unity of the profession of the entire North American continent. As such, it is commended to the consideration of the ASSOCIATION.

[1] The numbering of lines is necessarily omitted in the JOURNAL; they will be printed in the official document to be used at the meeting.

CODE OF MEDICAL ETHICS AND ETIQUETTE OF THE AMERICAN MEDICAL ASSOCIATION.

Report of Majority of Committee.

PROEM.

A code may be either penal or ideal. A penal code is an authoritative compilation of laws and is enforced by the infliction of penalties. Such are the civil and criminal codes of national, state and municipal governments.

An ideal code is the crystallization of the best thought and sentiment of any considerable body of men who have for long periods been associated with a common purpose, with reference to the regulation of their conduct in their relations to one another and to society in general.

Such a code forms an ideal standard, to the requirements of which each individual should strive to attain—a lamp to the feet of the young and inexperienced—a mirror into which the more mature, glancing, may be able to judge whether or not they are swerving from the paths of rectitude and honor.

Ethics is that science which treats of human actions and mental affections considered as virtuous or vicious, right or wrong. A code of ethics therefore takes cognizance of, and formulates, rules of action of the most exalted character, founded on eternal principles of justice, as applicable to the special conditions of the class for which and the time at which it is formed. Hence it follows that, from time to time, certain of its non-essential details may be modified without in any way impairing the solidity of its fundamental teaching. Obviously the code adopted by a learned profession must be ideal rather than penal, as it would be beneath the dignity of its members to bind themselves by penal restrictions. On the other hand, those who become obnoxious to the punishment of the penal code of any existing government are *ipso facto*, unworthy of association with the members of such a profession. Medical Ethics, as a science, is well worthy the study of all physicians, and should be included in the curriculum of every medical college. The code which springs from its teachings is based upon the actual experience of the noblest members of the profession, from the earliest times down to the present, and contains the essentials for the successful and honored conduct of a medical career.

Etiquette consists in the observance of a certain form of ceremonial between two or more persons in the conduct of affairs of frequent occurrence. Unlike ethics it involves no distinct question of morals, but, as by due conformity to its requirements the prosecution of affairs is facilitated, friction diminished, misunderstandings obviated and intercourse rendered more agreeable, it can not be neglected by physicians any more than by other classes of society. The peculiarly delicate and personal character of the relations of physicians to their patients naturally involves conditions which call for especial provision in this respect.

PART I.—MEDICAL ETHICS.

Chapter I.

OF THE OBLIGATIONS RESTING UPON PHYSICIANS.

Article I.—*Of the Education of Physicians.*

Of the momentous nature of the responsibilities devolving upon physicians there can be no question. The issues of life and death hang upon the proper performance of their duties. These responsibilities are only the graver and more enduring because there is no tribunal other than their own consciences to adjudge penalties for ignorance or neglect. On this ark none should venture to lay presumptuous hands. Manifestly the first duty of those who assume such responsibilities is to prepare themselves by a long, laborious and faithful course of study for the practice of this difficult and recondite art.

This course of study should be:

1. Preliminary.—This should include the ordinary branches of a liberal education, such as are taught in collegiate institutions which confer degrees in the arts, so-called, among which may be named languages, mathematics, literature, history, philosophy and logic. Not until the memory has been thus stored with essential preparatory knowledge, and the mental faculties have been trained to processes of correct reasoning, will the individual be in a position to comprehend the more abstruse science of medicine in all its branches, and to assimilate and utilize the immense amount of facts thrust upon the mind in the crowded curriculum of a medical school. Not the least among the advantages of such an education in the humanities in preparation for purely technical study, is the ennobling and refining effect of intercourse with the cultured and learned, on the character and manners, by virtue of which that courtesy, propriety and dignity of demeanor, which are essential to the character of the true physician, as depicted in every code that has ever been written, become a second nature, requiring no enforcement by rule.

2. Technical.—This should embrace such earnest and prolonged study of medicine in all its departments as will render the student reasonably familiar, not only theoretically but practically, with the universally recognized fundamental branches of the science and art.

Equipped with this degree of mental furnishment and technical skill, and with nothing short of this, is the physician ready to enter, with a clear conscience and a proper self-confidence, upon the discharge of the responsible duties of a practitioner of medicine.

Article II.—*Of the Duties of Physicians to Their Patients.*

Section 1.—Being thus possessed of the requisite knowledge and skill for the treatment of disease, and also of the sanction of government for their employment, physicians should consider these acquisitions as sacred talents committed to their trust, and should use them diligently, honestly and solely for the benefit of their patients. It should be manifest to all that they do not suffer their own ease, comfort, pleasure, profit, advancement or dignity even, to interfere with the discharge of this primal fundamental duty.

Sec. 2.—The authority of the physician in the sick room is absolute and autocratic. Like all powers its possession carries with it the obligation not to abuse it, but rather to exercise it as gently and unobtrusively as is consistent with the good of the patient.

Sec. 3.—The familiar and confidential intercourse to which physicians are admitted in their professional visits, should be used with discretion and with the most scrupulous regard to fidelity and honor. The obligation of secrecy extends beyond the period of professional services; none of the privacies of personal and domestic life, no infirmity of disposition or flaw of character observed during the professional attendance should ever be divulged by the physician except when he is imperatively required to do so. The force and necessity of this obligation are indeed so great, that professional men have, under certain circumstances been protected in their observance of secrecy by courts of justice. Physicians should discourage as much as possible, however, the needless disclosure of family concerns, the knowledge of which is not essential to successful treatment.

Sec. 4.—Physicians should not be forward to make gloomy prognostications, because they savor of empiricism, by magnifying the importance of their services in the treatment or cure of the disease. Bnt they should not fail on proper occasions, to give to the friends of the patient timely notice of danger when it really occurs; and even to the patient himself if absolutely necessary. This office, however, is so peculiarly alarming when executed by them, that it ought to be declined whenever it can be assigned to any other person of sufficient judgment and delicacy.

Sec. 5.—Physicians ought not to abandon a patient because the case is deemed incurable; for their attendance may continue to be highly useful to the patient, and comforting to the relatives, even in the last period of a fatal malady, by alleviating pain and distress, and by soothing mental anguish.

Article III.—*Circumstances under which Physicians may properly decline to render Their Services.*

Section 1.—While the duties of physicians to their patients are thus imperative, there are, on the other hand, reciprocal obligations of patients to their physicians of so obvious a character, that their studied neglect will justify the latter in declining to continue attendance on a family or a case.

Sec. 3.—Such are: The habitual refusal or neglect, on the part of those who can not plead poverty as an excuse, to remunerate a physician for services rendered; the refusal or studied neglect on the part of a patient, or the family of a patient, to carry out the instructions which the attendant deems essential; the surreptitious use by the patient of remedies not prescribed by, or disapproved of, by the attendant; and the surreptitious introduction of another physician, either as the family adviser, or during the progress of a case.

Chapter II.

of the relation of physicians to the profession and to their colleagues.

Article I.—*Duties for the Support of Professional Character.*

Section 1.—The possession of the privileges and immunities appertaining to membership in the medical profession imposes the obligation to maintain its dignity and honor, to exalt its standing and to extend the bounds of its usefulness. It is incumbent, therefore, upon its members to make themselves familiar with this and similar treatises in which are epitomized the views of the best and noblest of its votaries in all the ages, and to shape their conduct in accordance with the settled principles therein laid down. It must be constantly borne in mind, however, that the profession exists not for the maintenance of its own dignity and honor, but for the benefit of humanity. Its true dignity will therefore be best promoted by an unsullied life and by the strict observance of the requirements of the opening articles of this Code, namely, the acquirement of such an education as shall make its members at least the peers of those of the other learned professions, and single-hearted devotion to the welfare of those who seek their services. Frequent and fulsome allusions to this subject, however, as well as claims of unusual self-sacrifice and beneficence on the part of the profession, especially in print, are in bad taste, and only subject those who make them to the ridicule of thoughtful men.

Sec. 2.—It is derogatory to the dignity of the profession to resort to public advertisements, or private cards or handbills inviting the attention of individuals affected with particular diseases—publicly offering advice and medicine to the poor gratis, or promising cures; or to publish cases and operations in daily prints, or suffer such publications to be made; to invite laymen to be present at operations, to boast of cures and remedies, to adduce certificates of skill and success, or to perform any other similar acts. These are the ordinary practices of empirics, and are highly reprehensible in physicians. It shall not be considered as a violation of the spirit of this section, however, for physicians engaged in the work of medical education, either singly or associated in colleges, or for physicians practicing in hospitals, whether private or public, general or special, to announce the fact or allow it to be announced to the profession in the advertising pages of strictly medical journals, or for physicians devoting special attention to one of the recognized special departments of medical practice to note the fact on their signs or private cards.

Sec. 3.—Equally derogatory to professional character is it for physicians to hold patents for secret nostrums. For, if such nostrums be of real efficacy, any concealment regarding them is inconsistent with beneficence and professional liberality; and if mystery alone give them value and importance, such craft implies either disgraceful ignorance or fraudulent avarice. It is also reprehensible for physicians to give certificates attesting the efficacy of secret remedies.

Article II.—*Of Consultations.*

Section 1.—Consultations should be promoted in difficult or protracted cases as they give rise to confidence, energy and more enlarged views in practice. A request for a consultation by patients or their friends should not be considered as implying distrust of or dissatisfaction with the attendant. Nor should it be assumed that the consultant is called in because he is the superior in knowledge or skill of the attendant, or that it is his function to pass judgment on the treatment which has been pursued. The true ground is simply the benefit which may accrue to the patient by bringing the judgment of two or more minds to bear upon the case.

Sec. 2.—A consultation being requested either by the physician or by the family or patient, it is the right of the former to select the consultant. It is equally the right of the physician thus called upon to decline the consultation, unless in exceptional emergencies where life is immediately at stake. A thorough education, preliminary, scientific and technical, furnishes the only presumptive evidence of professional abilities and acquirements, and ought to be the only acknowledged right of an individual to the exercise and honors of his profession. Nevertheless, as in consultations, the good of the patient is the sole object in view, and as this is often dependent on personal confidence, no intelligent practitioner, who has a license to practice from some medical board of known and acknowledged legal authority, and who is in good moral and professional standing in the place in which he resides, should be refused consultation, when it is requested by the patient.

Sec. 3.—Consultants should observe the most scrupulous regard for the character and standing of practitioners in attendance, carefully avoiding any insinuation which could impair the confidence reposed in them or injure their reputation.

Chapter III.

of special departments in medical practice.

Article I.—*Of the Necessity for Specialties.*

Section 1.—The advantages which have accrued to the science and, in a still more marked degree, to the art of medicine, and hence to humanity, from the division of its practice into a number of departments can not be gainsaid. Differentiation in study and labor of whatever kind is the test of civilization. The field of medical knowledge is now so vast that no one mind can compass it in all its details. Nor can any one hand obtain the dexterity essential for the successful performance of all the delicate and daring operations of modern surgery.

Article II.—*Of the Education of Specialists.*

Section 1.—Specialists should not be something less than general practitioners, but general practitioners and something more. Without omitting one jot or one tittle either of the preliminary or of the technical education insisted upon as essential for the physician, they should superadd to this a period of general practice, and then, upon this broad foundation of theoretical and practical knowledge, should build the superstructure of the special art for which they feel themselves best qualified by natural ability.

Article III.—*Of Specialists as Consultants.*

Section 1.—As a consultation is the conjoint investigation of a case by several practitioners with a view to its conjoint treatment, the responsibility being equally divided between them—they equally sharing the credit of success as well as the blame of failure—the mere introduction of a patient to a specialist by the attendant, with the communication of such facts in regard to the personal or family history as may assist in deciding whether it is for the best interests of the patient that the specialist shall assume entire control and management of the case, does not, in any true sense, constitute a consultation, and should not therefore be subject to the same limitations.

Sec. 2.—It is the obvious duty of general practitioners, when cases come under their care for the successful management of which they have not had the requisite training, or do not possess the necessary facilities and appliances, to recommend and introduce such cases to a competent and reputable specialist, and thus prevent them from drifting into the hands of charlatans.

Chapter IV.

of the compensation of physicians.

Article I.—*Of Fees.*

Section 1.—Under existing conditions, physicians are dependent for their livelihood on fees received from their patients. The attempt to gloss over this fact under the pleasing fiction of the voluntary *honorarium* savors rather of charlatanry than of professional dignity. In justice to themselves and their fellow-practitioners, therefore, physicians should present their claims for remuneration at stated and frequent intervals, and, if payment is refused or unreasonably delayed, should not hesitate to take legal measures to compel the same.

Sec. 2.—A fee-bill may properly be adopted by the physician of any circumscribed locality as a general guide in regard to the standard of charges, but should be considered simply as establishing a *minimum* rate for patients in good circumstances.

Article II.—*Of the Business Relations of Physicians.*

Section 1.—It should never be forgotten, however, that the relation of practitioners of medicine to their patients is not that of tradesmen to their customers. Such competition as is considered honorable in business can not exist between physicians without diminishing their usefulness and lowering the standard of the profession. Equally unprofessional is a resort to the devices of the trades-union and the boycott.

The attempt to obtain the practice of others by underbidding is extremely disreputable. It especially behooves

physicians of large means to be on their guard against the temptation from personal motives, to remit or diminish fees in the case of prosperous patients, as great hardship may thus be worked to their less fortunate brethren. Physicians should exercise care in entering into contracts with corporations, companies or societies, that the compensation agreed upon is such as to elevate rather than depress the local standard of remuneration for similar medical services.

Sec. 2.—As in consultations the conditions are such as involve unusual responsibilities, at least a double fee should be charged by both attendant and consultant.

Sec. 3.—Poverty and professional brotherhood should always be recognized as presenting valid claims for gratuitous services; but neither institutions endowed by the public or by individuals, societies for mutual benefit, for the insurance of lives or for analogous purposes, nor any profession or occupation can be admitted to possess such privileges. Nor can it be justly expected of physicians to furnish certificates of disability to serve on juries, or perform military duty, or to testify to the state of health of persons wishing to insure their lives, to obtain pensions, or the like, without a pecuniary acknowledgment.

Article III.—*Of Fees in Vicarious and Casual Attendance.*

Section 1.—In the event of the enforced absence or disability of physicians for brief periods, their colleagues should cheerfully and gratuitously attend to their practice, and, on their return, should furnish a statement of services rendered in order that they may collect the fees therefor. A physician, however, contemplating a protracted absence can not reasonably expect the extension of such a courtesy.

Sec. 2.—In obstetrical and important surgical cases, which give rise to unusual fatigue, anxiety and responsibility, it is just that the fee should be awarded to the physician who actually renders the service. If, in a case of confinement, the physician who has been engaged arrives after the birth of the child under the management of a casual attendant, but before the delivery of the placenta, the fee should be equally shared by the two physicians.

Chapter V.

OF THE DUTY OF PHYSICIANS TO THE STATE.

Article I.—*Of General Duties.*

Section 1.—As good citizens it is the duty of physicians to be ever vigilant for the welfare of the community, and to bear their part in sustaining its institutions and burdens; they should also be ever ready to give counsel to the public in relation to matters especially pertaining to the profession, as on subjects of medical police, public hygiene and legal medicine.

Sec. 2.—It is their province to enlighten the public in regard to quarantine regulations; the location, arrangement and dietaries of hospitals, asylums, schools, prisons and similar institutions; the protection of water supplies; the medical police of towns; sewerage and drainage; and the prevention of epidemic and contagious diseases. When pestilence prevails, it is their duty to face the danger, and to continue their labors for the alleviation of suffering and saving of life, even at the jeopardy of their own lives.

Article II.—*Of Special Duties of Physicians as Experts.*

Section 1.—Medical men should also be always ready, when called on by the legally constituted authorities, to enlighten coroner's inquests and courts of justice on subjects strictly medical, such as are embraced in the science of medical jurisprudence. But, in these cases, and especially where they are required to make a postmortem, it is just, in consequence of the time, labor and skill required, and the responsibility and risk which they incur, that the public should award them adequate compensation.

Sec. 2.—Physicians have a right to expect pecuniary acknowledgment from the State for the time and labor which they expend in making out returns for sanitary and statistical purposes, but they should not consider the neglect of the State to recognize the justice of this claim a ground for refusing to make this important contribution to the public weal.

PART II.—MEDICAL ETIQUETTE.

Chapter I.

OF COURTESY BETWEEN PHYSICIANS.

Article I.—*Of the Nature of Etiquette.*

Section 1.—The etiquette which should prevail between physicians in their professional intercourse and contact is founded upon the dictates of common sense and the requirements of common courtesy.

Its strict observance will not fail to command the respect and goodwill of other members of the profession, and to promote that sense of mutual confidence and brotherhood which is so eminently desirable.

Article II.—*Of Professional Services of Physicians to Each Other.*

Section 1.—Practitioners of medicine are entitled to the gratuitous services of any one or more of the faculty residing near them whose assistance may be desired.

Physicians when ill are usually incompetent judges of their own cases, and the natural anxiety and solicitude which they experience at the sickness of those who are peculiarly dear to them tend to obscure their judgment, and to produce timidity and irresolution in practice. Under such circumstances, medical men are especially dependent upon each other, and kind offices and professional aid should always be cheerfully afforded, whether to themselves or to those members of their families who are immediately dependent upon them for support.

Sec. 2.—In many instances, however, a substantial recognition of such services may be both offered and accepted without violation of professional courtesy on either side.

Sec. 3.—Physicians should select some one member of the faculty as their family attendant, to whom the same loyalty, confidence and respect should be accorded as they expect from their own patients.

Article III.—*The Etiquette of Consultations.*

Section 1.—A consultation having been decided on, the attendant or a member of the patient's family should convey to the physician selected the request for the meeting, leaving the determination of the hour to the consultant.

Sec. 2.—The attendant should endeavor to reach the house in advance of the consultant in order to prepare the mind of the patient for the ordeal, as well as to receive the consultant and briefly to communicate such salient facts as may save the time of both in the sick room.

Sec. 3.—The attendant should precede the consultant in entering the patient's room, and should briefly examine the case in order to restore confidence to the patient so that questions may be the more intelligently answered, as well as to inform himself of the progress of the case since his last visit. The consultant should then be requested to make a full and satisfactory examination of the case, the attendant calling attention to any noteworthy or perplexing features which may have escaped the notice of the consultant. On the conclusion of the examination, they should retire to a private place for deliberation, the attendant being the last to leave the room.

Sec. 4.—The opinion of the attendant should be delivered first. When there are several consultants they should deliver their opinions in the order in which they have been called. No decision, however, should restrain the attending physician from making such variations in the mode of treatment as any subsequent unexpected change in the character of the case may demand. Such variation and the reason for it should be carefully detailed at the next meeting in consultation. The same privilege and obligation belong also to the consultant if sent for in an emergency, when the regular attendant can not be obtained.

Sec. 5.—The attendant should communicate the directions agreed upon to the patient or his friends. Any opinions which it may be thought proper to express to the family may be communicated by the consultant. But no statement or discussion should take place before the patient or his friends, except in the presence of all the faculty attending, and by their common consent; and no opinions or prognostication; should be delivered which are not the result of previous deliberation and concurrence.

Sec. 6.—In case of the unavoidable delay of one of the parties to a consultation, custom does not require the physician present to wait more than fifteen minutes after the time fixed. At the expiration of that period it will be the duty of the attendant, if present, to see the patient and prescribe; but, under similar circumstances the consultant should retire, unless informed that the condition of the patient is so alarming as to require instant attention, or in case the consultant is at a considerable distance from home, when the patient may be seen, and the immediate emergency met, or such examination made as may be deemed requisite. Information of such action, with a statement of conditions found and opinions arrived at, should be left for the attendant in writing and under seal. Otherwise, the consultant should await another appointment.

Article IV.—*The Etiquette of Occasional and Accidental Attendance.*

Section 1.—The same scrupulous regard for the reputation and feelings of their brethren which is binding in consultations should regulate the conduct of practitioners; when in a sudden emergency or for any reason, professional or otherwise, they are brought into confidential relations with the patients of other physicians.

Sec. 2.—A physician should not take charge of or prescribe for a patient who has recently been under the care of another member of the faculty in the same illness, except in the case of sudden emergency, or when the latter has relinquished the case, or has been formally dismissed and properly compensated.

Sec. 3.—A physician called to an urgent case, because the family attendant is not at hand, should resign the care of the patient immediately on the arrival of the latter.

Sec. 4.—A physician called to the patient of another practitioner in consequence of the sickness or absence of the latter, should on the return or recovery of the regular attendant and with the consent of the patient, surrender the case.

Sec. 5.—When, in the case of sudden illness, or of recent accident, several physicians are simultaneously summoned, the patient or family should indicate which one they prefer. Otherwise, courtesy should assign the patient to the first who arrives, who should select from those present such additional assistance as may be needed. In all such instances, however, the practitioner who assumes the management should insist that the family physician be called, and, unless further attendance be requested should, with the others present, resign the case on the arrival of the latter.

Sec. 6.—A physician called to a case of sudden or accidental death not occurring in his own practice, should direct that the usual attendant be at once informed thereof, in order that the latter may arrange for an autopsy, if advisable, and perform any other professional services required in such circumstances.

Chapter II.

Of differences between physicians.

Article 1.—*Of Avoidance of Misunderstandings.*

Section 1.—A physician should always be slow to suspect a colleague of intentional slight, injury or wrongdoing, inasmuch as a full knowledge of the facts and circumstances may satisfactorily explain conduct which at first seems offensive or selfish.

Article II.—*Of Arbitration.*

Section 1.—Should diversity of opinion or opposition of interest, however, unfortunately lead to disagreement and estrangement between individual members of the profession, the case should not be left to create or to foster prolonged animosity but should be referred at once, privately, to the arbitration of a suitable number of physicians or a court-medical, whose decision should be final.

Section 2.—As, in consequence of the intimate and confidential character of the relation of physicians to their patients there exist numerous points in medical etiquette through which the feelings of medical men may be wounded in their intercourse with each other, which can not be understood or appreciated by general society, neither the subject matter of such differences nor the decision of the arbitrators should be made public.

Article III.—*Of Seniority.*

Section 1.—Seniority among the practitioners of any city, town or district is determined not by age, but by the period of public and acknowledged residence as a practicing physician in the same.

Sec. 2.—At informal meetings and on public occasions, courtesy accords the position of prominence to the senior.

Sec. 3.—Physicians newly establishing themselves in practice in any place should, as soon as practicable, call upon the resident physicians, or otherwise notify them of their arrival, and of their desire to cultivate fraternal relations with them.

Henry D. Holton, Chairman.
Leartus Connor,
Daniel T. Nelson,
Benjamin Lee.

Blank Applications for membership in the Association, at the Journal office.

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

The Third Annual Meeting Held in Chicago, Sept. 12, 13 and 14, 1893.

Augustin H. Goelet, M.D., President.

(*Continued from page 468*).

Afternoon Session—Third Day—September 14.

The meeting was called to order at 2:30 p.m.

Chas. G. Cannaday, M.D., of Roanoke, Va., Member of American Medical Association, American Electro-Therapeutic Association, British Gynecological Association, London, Pan-American Medical Congress, etc., read a paper on

the treatment of subinvolution by electricity.

Sir James Simpson's "Subinvolution", Scanzon's "Chronic Parenchymatous Metritis," Klobs' "Habitual Hyperemia, with Profuse Proliferation of Connective Tissue," Edis' "Metritis," Hodges' "Irritable Uterus," Lisfrancs' "Engorgement," Kiwisch's "Infarctus," and Noeggerath's "Diffuse Interstitial Metritis," or any other name that may describe the enlarged and engorged condition of the uterus only recalls to the practitioner, up to a few years since, the stubborn and unyielding condition he has to treat. To Sir James Simpson we are more indebted than to any other for accurately defining and calling attention to its frequency and treatment. One of the first to describe its macroscopic and microscopic appearance was Snow Beck, in 1851.

Its etiology is interesting in the extreme. Everything that could have been credited with producing a pathologic condition of the pelvic organs has been claimed as an exciting cause, but it seems that a large number of those cases coming under observation have followed abortions, lacerations, twin-pregnancies, and similarly enlarged pregnant uteri (viz: large children, hydramnios, etc.), and in those delicately constituted as to uterine development. This will cover a wide field; and to this might be added another very frequent cause, viz: The practice of using ergot at some time during labor, which stimulates the contraction of the unstriped muscular fiber, producing a quasi-tetanoid spasm of the uterus, which subsequently fails to contract sufficiently to induce involution. As to histology: The bulk of the investigators concede that the uterus consists of unstriped muscular fibers in the highest state of development, varying in length from one one-hundred-and-tenth to one-fortieth of an inch, as it is found in the unimpregnated or gravid state, also yellow elastic, fibrillar and homogeneous connective tissue, round, spindle-shaped, and irregular cells (Thomas' elementary fusiform fiber cells) serous membrane, mucous membrane, nerves, blood vessels and lymphatics.

During gestation, the muscle cells enlarge to ten times their size in the unimpregnated uterus. All the remaining anatomic structures of the uterus during gestation are enlarged. After parturition, the uterus should rapidly decrease, until in four to six weeks it has attained its normal size. This change is the result of the fatty degeneration of the muscular fiber, with the subsequent absorption of this fatty material, and its removal from the uterus. This is brought about by the impaired nutrition, the result of the chronic contraction of the unstriped muscular fiber, which contraction should be immediate and permanent after delivery, otherwise, the nutrition of the cells is not impaired, foundation for excessive amount of connective tissue is laid and normal involution can not obtain. As all writers recently have occasion to regret, our pathology is very scanty on a disease which has had a recognized position in gynecology for the last forty-five years. It is evident to all observers that there is an excessive amount of tissue present and that there is also quite a defective condition of both the vascular and lymphatic systems. No clear and concise limits can be definitely fixed between the pathology of some forms of chronic metritis and subinvolution.

Mary Putnam Jacobi, who, under a very careful study of the subject, found the muscular fibers enlarged, with nuclei disappearing, and smaller fibers with indistinct central nuclei; others still smaller in which the nuclei were distinct, while in another variety no nuclei were discovered, but granular and oil globules were found, and that the wasting of the cell began in the protoplasm and ended in the nucleus. She found among these fibers nucleated connective tissue cells and amorphous tissue. The blood vessels and lymphatics were very much enlarged and intimately connected

with the muscular tissue, which she considers a strong diagnostic point from chronic metritis; as herself and De Sinety have shown, in the latter, a peri-vascular condition is present. Its diagnosis is generally easy, when we remember that an abortion or pregnancy must be present as a starting point. Hansen finds that involution extends over a period of twelve weeks, but that in two-thirds of the cases the uterus has returned to normal in from six to ten weeks. Weakness of the back, excessive lochial discharge, or the appearance of menorrhagia may be the most important symptoms found during the puerperium. Evidently, in the first stage, we have hyperemia and congestion. A large flabby uterus, with thickness of walls increased, and the sound reveals an enlarged uterine cavity; the mucous membrane bleeds freely. Whether this be chronic metritis or subinvolution uteri, following abortion or confinement, matters little in the treatment.

As to treatment: That, other than electricity, will only lightly be touched upon. As prophylactic clearing well the uterus of clots, the use of weak antiseptic vaginal injections, refraining from use of ergot, or any of its kindred drugs at any time in labor, or, if used during labor, to be continued for several days after labor at suitable times to induce and maintain contraction of unstriped muscular fiber, and to induce physiologic malnutrition, so necessary for the fatty degenerative process common in normal involution. Tonics, baths and drugs, hastening absorption, with nutritious diet will accomplish much in building up the system. Vaginal injections of hot water 110 or 115 degrees, using three or four gallons once daily, with pledgets of cotton every third night, inserted up the vagina, saturated with anhydrous glycerin and boro-glycerid, with the application of iodized phenol on a cotton wrapped probe, or better still, by a few drops injected into the cavity of the uterus with an intra-uterine syringe, provided the os is patulous, will all hasten the cure. If the os is very much congested, a Buttles scarificator plunged into the cervix and the congestion relieved in this way will do much good toward aiding a cure. But the greatest amount of good can be accomplished in the least time by the proper application of electricity. The detection of subinvolution is generally not accomplished as early as the tenth day, from the fact that any symptom referable to this is not generally attributed to this cause, but if it is detected at so early a stage, that is, at ten days, and the intra-uterine dimensions is found to be ten centimeters, and much tenderness does not exist, we should use the medium Engleman coil, having a length of 200 meters and a diameter of seven-tenth millimeters, with the bipolar vaginal electrode, after the manner suggested by Apostoli, using as powerful current as the patient is able to stand to accomplish the object. This to be continued for five minutes, then to be discontinued for ten minutes, with the electrode in same position, when the current should be re-applied for a period corresponding for same time, when the electrode should be removed. If a more powerful effect is desired, the intra-uterine bipolar method should be tried, having the proximal pole of the intra-uterine electrode stop at the os and the distal as far toward the fundus as it will reach, pressing it alternately to posterior, anterior and lateral portions of uterus. This to be used with Engleman's coarse coil, having a diameter of one and four-tenths millimeters and a length of sixty-six meters, with a strong current. But in failing to effect involution in this manner, as will often be the case, owing to such a sensitive condition of parts, or to the infiltration of tissue being so abundant and so organized as to preclude any certain results from the treatment, we must adopt another. The writer is mainly influenced by Hansen's observations as to diagnosis of subinvolution, and if he finds at the second week a uterus varying from eight to thirteen centimeters, at third week from seven and five-tenths to ten and five-tenths, and at the fourth week from seven to nine centimeters, and fifth week from six to nine centimeters, it is concluded he has subinvolution to deal with; and, provided symptoms are present as above described, the case is treated on a different plan, by aiming, first, to reduce the engorged and congested condition; secondly, to absorb hyperplastic elements, and thirdly, to restore tone to muscular and vascular structures. This consists of, first positive galvanic intra-uterine application of at least thirty milliampères from eight to ten minutes, and if much tenderness exists and pain is induced, to be followed by the vaginal bipolar application of the faradic current from a coil having a diameter of .225 millimeters, and having a length of 600 meters, after the method as described by Engleman. By this means the uterus is relieved of engorgement, the unstriped muscular tissue composing the uterine walls are strengthened, and the walls of the blood vessels are restored to their normal contractile powers. The capillaries are relieved of their hyperemic condition, and the process of involution is in every way aided. Bipolar intra-uterine faradization must be carried out to be effective in this instance by the bipolar intra-uterine sound.

If the subinvolution has passed the stage of active congestion we may hasten involution by using the negative pole of the galvanic current—intra-uterine—especially if the uterus presents a hardened condition. In several instances in which ergot was freely used during labor, there has been used the daily application of the faradic current to uterus for seven or eight days, as used by Trippier and Apostoli of Paris, and in each instance with the happiest results, and I am of the opinion that this should be used in all cases where ergot has been freely used during labor; strict antisepsis being carried out in each instance.

By this method described, I am satisfied that subinvolution uteri can be cured in one-half of the time consumed by any other means than electrical.

DISCUSSION.

Dr. Dickson said he had had good results from the faradic current in the treatment of subinvolution.

Dr. Hayes felt that galvanism did more towards starting up a new retrograde metamorphosis than the faradic current, although both are beneficial. But in subinvolution, there is an arrest of that physiologic change by which the organ is reduced from a weight of about three pounds at the time of confinement to a weight of about three ounces, as it is in the unimpregnated condition. In his estimation, no agent is superior to electricity in starting anew this process, and clinical experience shows that this has accomplished more than curetting or the surgeon's knife. He would employ the positive pole because there is frequently an increased menstrual flow, and there is also a flabbiness and a condition of undue moisture which seems to indicate this pole. He rarely employed over forty or fifty milliampères, given from five to eight minutes at intervals of four or five days.

Dr. Sprague thought it made very little difference whether intra-uterine galvanic treatment or bipolar faradization was employed; we can depend upon both to give relief. His results had been more rapid when he had given sittings of fifteen minutes on alternate days.

Dr. Massey strongly commended the method. He saw many acute cases of this kind in consultation, but very few in private practice unless they had lasted for many years. At present, he was disposed to return to the former belief that the relaxed uterus is the cause of very many of the reflex symptoms observed in women. He uses the faradic current chiefly in cases which have existed not over six months. If there be such a thing as a specific, it is electricity for subinvolution—the faradic current in recent cases, and the galvanic current for the more chronic ones. Ergot frequently causes irritation and aggravates the condition. Snbinvolution, he thought, was almost always due to a microbic invasion of the uterus at the puerperal period. If it be due to the gonorrheal germ, the case will prove most obstinate, but other cases will be found quite amenable to this treatment.

Dr. A. Lapthorn Smith added his testimony to the value of the continuous current in subinvolution. He had not employed the interrupted current very much, although no doubt by the contraction of the muscular tissue which it produces, the uterus could be made to contract firmly upon the nutrient arteries, thus leading to fatty degeneration and absorption. He agreed with the preceding speaker that subinvolution was very largely due to septic infection occurring at miscarriages or at full term. We are especially apt to have this after abortions, because Nature is not prepared to carry out this retrograde process as she is at the completion of the normal period of gestation.

He had had more experience with the treatment in alveolar hyperplasia, viz.: Where the uterus is too deep, owing to a deposit of fibrous tissue between the layers of muscles. In such cases, faradism is not effective; the continuous current is necessary. It acts as calomel does when applied to the cornea, i.e., by exciting the activity of the absorbents. No matter how performed, he was certain the depth of the uterus could be reduced from day to day by negative galvanization.

Dr. Cannaday, in closing the discussion, said that if the subinvolution had existed for a year or more, the congestion will have in large measure subsided, and therefore greater benefit is likely to accrue from the use of negative galvani-

zation. He wished to emphasize the fact that he thought ergot had much to do with the production of subinvolution, owing to the tetanoid condition it produces in the muscular fiber. In recent cases, faradization is more active, but later on, it is of little avail except the current be from the fine coil.

Dr. Plym. S. Hayes of Chicago, then demonstrated by means of a eudiometer the amount of gas evolved from water during electrolysis. This amount is somewhat in excess of that occurring in the uterus because a portion of the current is expended in decomposing the salts found in the tissues.

This demonstration served as an introduction to Dr. Hayes' description of

A NEW INTRA-UTERINE ELECTRODE.

By Plym. S. Hayes, M.D., Professor of Electro-Therapeutics, Chicago Policlinic.

I had employed the Apostoli method of the intra-uterine use of galvanic electricity for but a short time when my attention was called to the amount of gas liberated around the intra-uterine electrode, and that the presence of the electrode in the cervical canal served as an obturator, preventing the escape of the gas which is formed.

In one of my cases, that of a multipara, who, by repeated childbearing, had so large and patulous a cervical canal that the intra-uterine electrode did not fully occlude it, I noticed the escape of gas by the side of the electrode in the form of a froth. I also repeatedly noted the fact that the removal of the intra-uterine electrode was followed by the same froth, either with or without color, according as the introduction and removal of the electrode had been attended with sufficient traumatism to produce a slight hemorrhage or not. Occasionally the escape of the gas was attended with a slight sound, such as would have attended the forcing of soap suds through a small orifice. The escape of the gas with sufficient force to produce a noise suggested to me the probability of the presence of gas under pressure within the uterine cavity. In order to demonstrate this, I have at times, after the employment of Apostoli's method, introduced the blades of a uterine dilator and opened them slightly and have seen as much as a drachm of bloody froth escape from the uterine cavity. Experience soon demonstrated that when the gas was allowed to escape from the uterine cavity by means of the dilator or a uterine irrigator, the post-operative pain was decidedly lessened. My experience in this regard, with report of case, was embodied in a paper which was read before the Tri-State Medical Society at their meeting at Chattanooga two years since.

The method of providing a way for the gas to escape after electrolysis was an improvement on the method as described by Apostoli unless, perchance, it may be proven, that the post-operative pain is mainly due to uterine contractions excited by the gas which acts as a foreign body within the uterus and these contractions produce a decidedly therapeutic action on the uterine tumor. That this claim has been made by any electro-therapist who has made use of this method is unknown to me, for I have failed to see any mention of it in the literature bearing on the subject. Granted that the post-operative contraction is of therapeutic value, the query remains, Is the benefit derived from such contractions excited by the presence of gas of sufficient value to run the risk of forcing the contents of possibly diseased tubes or even uterine mucus into the abdominal cavity?

That the galvanic current causes gas to be liberated—hydrogen from the negative pole and oxygen and chlorin from the positive pole—when the fluids and tissues of the body are subjected to electrolysis, is an undisputed fact. The amount of gas liberated from either pole by means of 100 milliampères of current passing for a definite period of time through water can readily be determined by means of a properly constructed eudiometer, which instrument becomes then a coulombmeter; 100 milliampères passing for five minutes through acidulated water will liberate 7.5 cubic centimeters of the mixed gases. This is somewhat in excess of the amount that would be liberated in intra-uterine electrolysis, because here we have a portion of the electrolytic energy exerted in decomposing the salts and organic compounds found in the tissues. Even if the gas liberated should be but one-half of the amount liberated in our eudiometer with acidulated water, it would still give us 1.25 cubic centimeters of oxygen in five minutes, which time is frequently consumed in intra-uterine electrolysis.

The removal of gas after the electrolysis has been completed has been proven, by clinical experience, to be of value, but there remains the fact of a rapid evolution of gas within a muscular cavity that has three openings—the Fallopian tubes and the cervical canal, the last of which may be quite thoroughly occluded by the intra-uterine electrode, so the accident which we wish to avoid by the removal of the gas is quite likely to have occurred during electrolysis and before the method above described for the removal of the gas could have possibly been employed. These considerations, in connection with the desire to produce an electrode that could readily be rendered aseptic, that would be comparatively easy of introduction, and that could be made to act within the uterine cavity and at the same time be without action on the cervical canal, caused me to formulate the following as the ideal of an intra-uterine electrode:

The active part of the electrode should be of platinum and flexible. There should be a means of exit for the gas generated around the active part of the electrode and it should be so constructed as to sustain a boiling temperature, or be uninjured by being subjected to the action of an antiseptic solution. Should the electrode become clogged with blood or mucus so as to prevent the exit of the gas, a means should be provided for clearing it while in situ while the current is passing, and should be so insulated that the cervical canal should not be subjected to the action of the current.

The electrode I now present to you is the attempt at the embodiment of this ideal. This electrode has now been in use for over a year and has proven to be of value in meeting the indications herein detailed. It consists of a straight or slightly curved metal tube covered with hard rubber. To the end of the tube is soldered a spiral of especially tempered platinum ribbon which terminates in a bulb of platinum. The spirals of the platinum ribbon are separated so as to allow the entrance of liquids and gases into the interior of the spiral, which is continuous with the tube. An oblong fenestra is made in the tube at the point that will be just external to the cervix, when the electrode is introduced. The proximal extremity of the electrode is bent at an obtuse angle and is arranged for attachment to the battery. An opening at the angle permits the introduction of a stylette, by means of which the tube can be cleared of accumulated mucus. The stylette may also be used to maintain the form and give rigidity to the electrode during introduction. The edges of the platinum spiral are made smooth and slightly rounded so as not to inflict injury on the soft parts. The screw-like arrangement of the spiral aids materially in the introduction of the electrode, for as soon as the electrode is engaged in the cervical canal a rotation of the instrument causes it to advance. The material of which the electrode is constructed allows of its being boiled, or being placed in alcohol, or some like aseptic solution.

After using the electrode, I remove the mucus, blood, etc., which adheres to the spiral, by switching it rapidly through water and allowing the water from a faucet to run through the tube. After this, the electrode is put into a test tube partly filled with water, with the platinum point down and the water brought to the boiling temperature and kept there for some minutes. Then it is placed in another test tube containing alcohol and allowed to remain till needed. To Mr. Warner of the McIntosh Company, whose technical skill and perseverance has aided materially in the production of this electrode, much praise is due.

I have entered thus fully into the details which prompted the construction of this electrode because it attempts to accomplish that which is entirely new, viz., the elimination of gas as it is generated by electrolysis into the uterine cavity. In this particular, the electrode is a pioneer in a new field.

The testimony of those who have used it, is that while it does not wholly prevent the post-operative pain in every case, it does so in a great degree in the majority of cases.

Intra-uterine electrolysis is not without danger, even in the hands of the most conservative, and any instrument that will lessen the danger of setting up a peritonitis or of relighting the fires of an old one, should find a permanent place in our armamentarium.

DISCUSSION.

Dr. Gehrung said that when he began to use the Apostoli method at the time it was first promulgated, he made the same observation regarding the accumulation of gas within the uterus. He employed puncture at that time, and found that the gases accumulated within the tumors, and formed the basis of future abscesses. He had seen this also in the practice of others. At that time he constructed a hollow electrode, which is illustrated in Dr. Massey's book, and which consists of a trocar needle in a silver tube, open

at both extremities, and perforated with holes so that when the electrolysis has been applied through the trocar, the trocar may be removed, and the accumulated gas in the tumor allowed to escape through the cannula which is retained in position as long as deemed advisable. It was found that fluids sometimes escaped for days after the opecation, showing that the effect of the electrolysis lasts for some time after the application. In one case, the cannula was left in for twenty-one days. The same method he used afterwards in the uterus in a similar way to that described in this paper.

Dr. Massey said the instrument just exhibited is undoubtedly a novelty as regards the question of providing for the escape of the gas. In puncturing a large fibro-cyst in one case, he employed Gehrung's instrument, and was astonished at the very large quantity of gas aspirated, although a current of not over 150 to 200 milliampères was applied for two or three minutes. He thought much of the irritation ordinarily observed is due to the use of inflexible instruments. About a year after the description of Dr. Gehrung's instrument was published in his book, he learned from Dr. Goelet that he had devised a similar instrument in ignorance of Dr. Gehrung's work.

Dr. Dickson thought it would be better to have the tip of the instrument protected when used with strong currents. He also thought the folds of mucous membrane might catch in the grooves of the spiral and lead to hemorrhage, and that when the positive pole was used, the withdrawal of the instrument might be attended with much difficulty. The cleaning of the instrument after certain cases could hardly be effected by anything short of passing it through a flame.

Dr. Massey remarked that this instrument was an improvement on his, only in having a hollow handle.

Dr. Gehrung said that without intending to advocate the puncturing method in the treatment of fibroids, he desired to mention that one of the great advantages of the instrument to which he had alluded was that it could be left *in situ* and electrolysis repeated without resorting to another puncture. He also made use of the stylette by which the instrument could be introduced or withdrawn.

The President remarked that it had been claimed that much of the good effect of electrical treatment is due to the action of the liberated gases. If this be so why should instruments be devised to allow its escape?

Dr. Hayes, in closing the discussion, said that about eighteen or nineteen years ago he had constructed an instrument which would allow of the escape of gas, but he had not published it. The introduction of his instrument is not nearly so difficult as one might suppose, although of course it is not so easily effected as with the ordinary instruments. The tip can be readily coated with shellac, but if the electrode be introduced and allowed to remain stationary, there is very little danger in having the tip made of solid metal. Even though the positive pole be used, there is no great difficulty in removing the instrument, the operation being facilitated by gently rotating it. The evolution of gas is so great when strong currents are used as to prevent in a measure the adherence of the tissues to the electrode.

W. B. Sprague, M.D., of Detroit read a paper on

A CONTRIBUTION TO THE ELECTRO-THERAPEUSIS OF SALPINGITIS.

The pathology of tubal troubles has been so recently evolved that the therapeusis is still in the embryonic stage. Many of our leading lights declare that there can be no rational therapeusis—that there can be no remedy but extirpation—as if decapitation were a cure for cephalalgia!

Yet many men have a firmer faith in Nature's economy, and are seeking to aid her efforts at repair by, at least so far as possible, removing the cause. Nearly all cases are accompanied by and most of them caused by endometritis, either acute or chronic, specific or non-specific. Since this has been established our first duty is plainly to relieve the endometritis. To this end many forms of treatment have been advised, but Polk's revival of Sims' conception of depletion and drainage seems to be the only one which has brought satisfactory results, and the relation of parts is such that the application of this principle to the womb produces a direct as well as an indirect influence upon the tubes—it removes the cause and relieves the chronic congestion in those cases which bear the treatment well.

Now the severity of the measure by which it is accomplished, as taught by its author and the profesaion at large, has limited its applicability in the hands of even its warmest advocates. Divulsion, and curetting of an inflamed womb with inflamed adnexæ has often aggravated the inflammation, making extirpation necessary. This has seemed to the surgeon good ground for the argument that extirpation should be the first and only resort.

But Apostoli has taught us that the same results may be attained by a milder and more rational means. The intra-uterine application of the negative pole of the constant current of electricity is the most reliable method we have for treating endometritis to-day, the rationale of which is this same principle of depletion and drainage, by the cataphoretic action of the current, aided by the trophic influence and by its caustic action. Goelet has shown that the influence extends to salpingitis and, if carefully and judiciously used, is the safest and best treatment yet advocated for this affection. He says that many cases of simple inflammation of the lining membrane of the tubes will subside with the endometritis, if free drainage through the uterine canal is established and maintained, and if protection is afforded against such influences as would tend to irritate the sexual organs.

My experience leads me to indorse the foregoing most heartily, but the object of this contribution is to call attention to a modification of Goelet's treatment which has been quite successful, in a few cases, in my hands, by reporting some illustrative cases. At the Michigan State Medical Society meeting held at Grand Rapids in 1890, I reported a case as follows:

"Mrs. H., aged 32, has had one miscarriage, but for several years previously she had suffered from a pain in the right iliac region, at frequent intervals. A year ago last April she began to suffer more than ever before, and she came to me for relief. She told me, in describing her symptoms, that she had an enlargement in the side with pain. I found this enlargement to be considerable, but the abdominal muscles were strong and I could not distinctly outline it. I diagnosed an ovarian tumor, and felt that my diagnosis was confirmed as I watched its growth in after days. But one day she came to tell me that she had had a free discharge of yellow matter after a sensation as of something giving way the night before, and the swelling was subsiding. An examination proved the correctness of her statement, and I changed my diagnosis to pyosalpinx. My treatment to this time had been merely palliative, principally faradism, to relieve the pain. She was now comfortable, and I suspended treatment a few weeks, when the tube began to fill again. I resumed the faradism, and soon after added galvanism. On June 15, I gave twenty-five milliampères, intra-uterine, negative. After three intra-uterine applications, the last one sixty-five milliampères, I changed to the vaginal electrode, placed against the tube, sixty-five milliampères, June 29. Soon after this there was a second discharge of pus, and relief from pain. I gave twenty-one more applications similar to the last described, before March 29, 1890, when the tube had again filled, and was giving considerable trouble. I now determined to try to effect an entrance into the tube. I therefore converted my graduated uterine sound into an electrode, insulating it with small rubber tubing, and passed it into the womb. I then connected it with the negative pole of the battery, and turned on ten milliampères. Turning the end of my sound toward the right cornu, I exerted gentle pressure against the point that I thought to be the proximal end of the tube. Suddenly, within five minutes, my sound slipped onward about an inch. I was startled, and thought of perforation of the uterine wall, but perceiving my patient undisturbed, I decided that I had really been more fortunate than I had expected, and accomplished my purpose. So I passed the electrode still further in and raised the current to twenty-five milliampères for seven minutes. There was free discharge of pus for several days following, and renewed relief from all the symptoms. I have since introduced the sound into the tube on May 12 and 25, and on June 12, the last time in the presence of Dr. Manton, who kindly came in to confirm my diagnosis. The tube seemed quite empty of pus at the last sitting. The sound has passed more readily at each subsequent sitting, and enters to a depth of more than five inches. The patient, who is a seamstress, has not lost an hour's work from treatment, and her general health is much better than a year ago." (*Trans. Michigan State Medical Society*, 1890.)

I administered two or three treatments to this patient soon after the above report, and have been agreeably surprised to find that she is completely cured. There has not been a drop of pus discharged since, nor has there been any trouble with the uterus or adnexæ. Except for a chronic pharyngitis the patient's health is perfect and she pursues her avocation without interruption.

Another interesting case of pyosalpinx is as follows:

In the spring of 1889 I was called to a case of acute gon-

orrhea in the person of Mrs. D., aged 33 years. The result was what is ordinarily called a cure, without any apparent involvement of the uterus or adnexæ at the time. The uterus had been badly lacerated at a previous confinement and trachelorrhaphy was performed a little later. In a short time the menstrual flow became scant and painful, and there was enlargement of the tubes, followed in a few days by a free discharge of pus and relief to pelvic distress and headache which she had suffered. In the summer of 1890, the distress at the periods growing monthly more severe and prolonged, I began intra-uterine applications of galvanism, and found one day that I could pass my electrode into both tubes by a manipulation which I will describe later. I have continued this treatment since at intervals varying from three days to four months, the longer intervals being later. After every treatment (which is applied only when the patient is suffering from distension of the tubes), there is discharge of pus and relief to all the symptoms. For the past twenty-two months I have made only twenty-six applications, only five of which were given during the present year, 1893, and my patient is able to do her own housework and wait upon an invalid husband, suffering only occasional serious discomfort, whereas she had at first been able to do very little and suffered much of the time.

In 1891 I reported a case of hematosalpinx before the above-mentioned Society. The case was as follows:

Miss C., aged 30 years, a seamstress by occupation, had undergone a not unusual history of retroversion, endometritis, prolapse of the ovaries and salpingitis previous to the summer of 1890. She spent this summer on the New England coast and was much improved in general health when she returned to Detroit in the autumn. But the menses became scant and irregular and began to usher in a very severe headache and backache which were very slow in subsiding after the menses ceased. These phenomena developed with increasing severity and regularity, and I was called to see her suffering in an unusually severe recurrence, Jan. 27, 1891. I found a retroversion and enlargement of the womb with an abnormal swelling in the left vaginal fornix. I replaced the womb and gave internal remedies which afforded very little relief, but the headache, backache and swelling in the fornix subsided coincidently during the following several days. She came to my office by my request on February 5, 22 and 25, and I made intra-uterine applications *a la* Apostoli for the endometritis. On the last named date I made the following notes: Left tube distended, probably by catarrhal secretions. Has had much vertical headache for the past week, and a sensation of water trickling over her forehead. I seemed to succeed in passing the electrode into the distended tube—at least it passed about four inches beyond the os by turning it to the left side and gave pain in the region of the left ovary. Gave twenty-five milliampères negative current for ten minutes. On March 1 she returned and I again noted as follows: She reports that her headache was relieved soon after last treatment, and that she discharged a brown viscid material from the vagina for two days following. I find the distension nearly gone from the tube and have again passed the electrode into it, beyond question, feeling its point through the abdominal wall near the ovary. I gave twenty milliampères ten minutes, negative current. My diagnosis now changed from that of hydrosalpinx to hematosalpinx, but I determined to try what a persistence in this line of treatment might do for her. On March 16 I again recorded: I repeated the intra-tubal treatment March 9, but did not succeed in entering the tube so far. This treatment was followed by menses next day, which were free from pain, normal in quantity, and followed by no headache. She reported these facts yesterday, March 15, when I gave another treatment, introducing the electrode probably more than an inch into the tube. She says she is "perfectly well."

I repeated the treatments twice more in March and her menses recurred April 4, quite normal and freer than formerly. She reported another menstrual period ushered in May 30 which was the most normal in all respects that she had experienced for many months. I continued to maintain the patency of the tube by occasional treatments for a few months and there has never been a recurrence of the hematosalpinx. I reported the case in June of the same year, when I wrote as follows: "My patient is very comfortable unless she runs a sewing-machine or takes a long walk, in spite of the abnormalities in her pelvis. From my experience in treatment, by electrolysis, of stenosis of the cervical canal, I expect to obtain a permanently patent uterine orifice in the diseased tube, and to have cured my hematosalpinx." This patient was married the following spring and on July 14, 1892, I was called in haste, but too late to prevent the loss of a two months fetus, due to a recurrence of the retroversion which she had endured for several days without reporting. Her menses again ceased March 1 of the present year and on the 26th of July she felt motion. By careful watching the womb was kept in position until the danger of abortion was passed.

During the discussion which followed the report of this case in 1891, I took occasion to argue for greater conservatism in these cases, in answer to which Detroit's leading extirpationist spoke as follows:

"I don't know how many children Dr. Sprague's patient has, or how many she will get in the future. I think she is unsexed. I think her generative organs, as far as propagation of species is concerned, are of no more use to her, and I believe with Dr. Manton, that very serious irritation is likely to take place and subject her to great danger in the future." (*Trans. Mich State Med. Soc. 1891.*)

Thus, incidentally, the case has developed an unanswerable reply to the plea for immediate extirpation in such cases.

I have not been able to find that any one else has advocated seriously or practiced intra-tubal electrolysis for any form of salpingitis. I am aware that the possibility of entering the tubes in these cases is discredited, and I have found many cases in which I have been balked in my efforts, but I have good reason to believe that I have succeeded in several cases besides these that I have reported, and I have had no untoward results following my efforts in any instance. Even where I am convinced that I failed, I have frequently given great relief to the patient and sometimes caused free discharge of catarrhal or purulent secretion, as the case might be. It seemed to me, therefore, that after three years of careful effort and observation in this direction it was desirable to lay the matter before this, the only body of men in our country competent to pass upon and approve or condemn a continuation of effort in the same line.

I have believed that the number of cases in which we could apply the treatment is necessarily limited, but that in many cases, where it is possible, the direct application of the current to the diseased membrane would be far more beneficial than to depend upon the remote and secondary effects of applying it to the endometrium. I do not ignore the danger of careless manipulation in this region, and most earnestly warn tyros in electro-therapy from making the attempt to enter the tubes with any electrode. The strictest asepsis should be observed before, during and after the séance.

I use an insulated Simpson sound with the normal curve a little accentuated at the extremity. As soon as I have passed the internal os uteri, I turn the point of the instrument to the side which I wish to enter and gently follow along the bottom of the fossa until I reach the os uterinum of the tube, which is indicated by the points sliding into a slight depression. I then attach the negative conductor, turning on slowly, ten to thirty milliampères, according to the nature of the case. I exert just sufficient leverage to hold the bulbous point in firm contact with the ostium. I usually notice evidence of the cataphoretic action by oozing of fluid from the os uteri. In those cases where I have succeeded in entering the tube, I have felt the point of the electrode suddenly advance, and have immediately found it fixed, as if in a narrow canal. In some instances I have then been able to advance it from one to two inches farther, and then have felt the point in the ovarian region, with the other hand, through the abdominal wall, in several instances. After the first one or more treatments, the point does not always stop at the fornix, but enters the tube readily, as was the case in the instance where Dr. Manton verified my observations. I have always exercised great care to avoid force, simply guiding the electrode, with my hand supported at the forearm. With this precaution, and the low current used, I do not think the danger of perforation is as great as is sometimes represented.

(*To be continued.*)

Philadelphia Pathological Society.—The semi-annual conversational meeting of the Philadelphia Pathological Society will be held in the upper hall of the College of Physicians Building, Thirteenth and Locust Streets, on Thursday, April 26, 1894, at 8 P.M. Dr. Simon Flexner, Associate in Pathology in the Johns Hopkins Medical School, will deliver an address entitled, "An Experimental Study of the Nature and Action of Certain So-called Toxalbumins." Members of the medical profession are cordially invited to be present.

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MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues and subscription for THE JOURNAL. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above amount the weekly JOURNAL of the Association will be forwarded regularly.

All members of the Association should send their Annual Dues to the Treasurer, RICHARD J. DUNGLISON, M.D., Lock Box 1274, Philadelphia, Pa.

SATURDAY, APRIL 7, 1894.

THE DEPARTMENT OF PUBLIC HEALTH.

The AMERICAN MEDICAL ASSOCIATION four years ago set about the task of securing at the hands of Congress a Department of Public Health, and the committee appointed for that work has been steadily at work. Much has been done to clear the way to united action, and but for the hasty and ill-judged action of the New York Academy of Medicine, the matter would already be far advanced. That the bill proposed by that body to establish a "Bureau" of Public Health, was singularly defective they now admit, and have withdrawn the original bill providing for sanitary districts and have substituted a much better one. It is, however, far inferior to the broad plan of a Department of Public Health.

The bill of the AMERICAN MEDICAL ASSOCIATION Committee, contents itself by forming the Department, and leaves the details of subsequent organization and development to the Department itself. It is not reasonable to suppose that Congress will ever create such a Department unless it means to be guided somewhat by its advice in rendering its work effective, so then at present there is only one thing to do, and that is to work earnestly to secure the passage of the AMERICAN MEDICAL ASSOCIATION bill, which we understand will be introduced in the Senate by the Honorable JOHN SHERMAN, of Ohio, and in the House by the Honorable JAMES B. MCCREARY, of Kentucky.

We earnestly hope that the New York Academy of Medicine will cease to urge its "Bureau" scheme against the great measure now proposed by the ASSOCIATION.

It is said that the reason for holding back is that there is immediate probability of its passage, for certain very distinguished persons in authority are against another Cabinet office. In other words our legal brethren are so well entrenched in what they now seem to regard as a right inherent in their profession, that the welfare of the country forms no part of the argument.

We know we are right in making this request for a substantial recognition of our profession. A first class sanitarian in the Cabinet would be one of its most useful members; let us therefore make no halt in our efforts toward securing this result. Our ASSOCIATION reaches every Congressional district; let every member write to his member of Congress and ask his unqualified support of the AMERICAN MEDICAL ASSOCIATION bill, "to establish a Department of Public Health;" and to oppose any bill having for its purpose the establishment of any alleged "Bureau of Health."

It may not and very likely can not be passed at this session, but let us make the attempt, and if we fail, let us obtain from the candidates who will be nominated for Congress during the coming summer, a categorical and definite answer to the question, Will you, if elected, favor the bill to create a Department of Public Health? Let us put this question to every candidate this summer and we will have some definite result from the next Congress. In a free country with ballots in our hands, we are not helpless if we make organized effort. Medical societies in affiliation with the AMERICAN MEDICAL ASSOCIATION, and those in sympathy with the movement should lose no time in passing resolutions favoring the establishment of a Department of Public Health, and copies of these resolutions should be forwarded by the secretary of the society to the members of Congress from the district in which the society is located.

The petition framed by the committee, which was published last week, while rather lengthy, furnishes in proper form the most cogent reasons for the passage of the bill: The prevention of disease; the amelioration of suffering; the improvement of the condition of the poor, and the lengthening of human life are objects sought to be attained by the proper utilization of the powers and forces of our Government. To this beneficent and patriotic work our noble ASSOCIATION joining the American Public Health Association, has set its hand, and let us see to it that when we ask for this great establishment we are not given a petty Bureau.

Let us also insist that whoever of our profession shall be entrusted with this great work, after the formation of the Department, shall be clothed with such rank as shall make his office equal in dignity to those held by the members of the legal profession.

THE ASSOCIATION TRAIN.

We respectfully urge upon members who intend going to San Francisco to concentrate on the Association Train wherever possible; by that means we

shall go to California in a body and give a more favorable impression of the Association, than to scatter and travel singly or in squads.

The following is the itinerary: The train will arrive at Colorado Springs May 30, 8 A.M. Visit the Springs and Manitou, if desired take a ride through the "Garden of the Gods." Leave Colorado Springs 1 P.M., for Denver, where there will probably be a reception by a resident committee of the Colorado Medical Society. From Denver the schedule is so arranged as to make a daylight ride through the heart of the Rockies to Glenwood Springs, at which point a stop of several hours will be made, the baths can be taken, and then proceed to Salt Lake City; arrive there early in the morning, remain all day, which will give an opportunity to visit all points of interest, and leave that night for San Francisco direct, arriving on the morning of June 3.

The early start guards againt all possible contingencies of delays or accidents.

There are several side trains which have been managed by medical gentlemen in the interest of opposition lines to the one selected by the Trustees,—we regret extremely that we could accept but one line, but we were compelled to travel by one route. By the arrangement as consummated there are no free passes on account of the Association. Those traveling on passes would travel in that way whether there were an officially designated train or not.

The arrangement with the respective companies is, that our Treasurer pays at current excursion rates for the transportation of all officers for whom the Association treasury regularly pays the transportation, and the respective railroad lines pay at current rates for the advertising in the Journal. By this arrangement the Association treasury, and not any particular individual is the beneficiary.

The cash expense of transportation, (which is no trifling matter) at a meeting so long a distance, has thus been prevented, and we feel sure that when this fact is known to the Association there will be but one mind as to the way of travel. The rates promised are, for the present, the Midwinter excursion rates, without extra charges for the delays in Colorado and Salt Lake. Should at the last moment any reduction in rates be offered by any other line, the line selected by the Association, the Santa Fé, has agreed to meet it.

THE DEATH OF BROWN-SEQUARD.

The newspaper notices of the death of this eminent physician afford a singular example of the difference between notoriety and fame. The largest and oldest morning paper in Chicago in its announcement says:

"Paris, April 2.—Prof. Brown-Sequard, the eminent physician and physiologist, known chiefly to the world at large as the discoverer of the so-called 'elixir of life,' died here to-day."

Thus apparently in the eye of the public, his long and useful life, full as it was of the record of painstaking physiologic and therapeutic research, was overshadowed at one stroke by a single ill-advised and faulty publication written in old age. His experiments on the physiology of the nervous system, and his able deductions therefrom, are the scientific works by which his friends will choose to remember him, and to have his name transmitted to posterity. They will refer with admiration to his published works, and to the story of the prizes granted him by the Academy for original discoveries. They will wish to blot out from the record that last act in the drama of his life, whereby he very nearly caused his professional brethren of the entire world to palm off on the public a pretentious fraud. Let this be forgotten as the vagary of an old man, undergoing senile cerebral changes. Let the medical historian, like the Recording Angel who wrote down the oath of Uncle Toby, blot out the record of the "elixir" with a pitying tear.

In the Necrology column we give a summary of the life and professional services of this truly great man; a record which few have surpassed, and which will endure as a monument to his patient industry and powers of research.

ANOTHER WELL-INTENDED LAW IS FOUND INVALID.

Whatever may be the personal estimates placed by different individuals upon the doubtless well-intended Michigan Act, No. 207, of 1893, popularly known as the "Jag Cure Act," the Supreme Court of that State has pronounced it unconstitutional. This it has done in the case of the Senate of the Happy Home Club v. Board of Supervisors of Alpena County, decided Feb. 20, 1894. The statute in question provided that from any person charged or complained against as being a disorderly person on account of drunkenness or intoxication, the court, or justice, might accept a recognizance conditioned that such person would take treatment for the cure of such drunkenness or intoxication, of some corporation organized within the State for administering such cure and required by law to make and file reports in reference thereto, within a time specified, and conform to the rules and regulations of the corporation administering such cure, and that he would not drink intoxicating liquor for the period of three months, and upon his appearing before the justice at the end of sixty days, and showing that he had conformed to the conditions of the recognizance up to that time, he should be acquitted and discharged. This, in effect, the Court says, would permit unofficial persons to prescribe rules which should acquit persons charged with crime. The rules of the corporation referred to might be lax or stringent; but, whatever they were, the justice had only to acquit if

they were shown to have been complied with. They might be as variable as the corporations prescribing them were numerous. But it was not within the province of the Legislature to delegate to private corporations the power to make laws for the discharge of offenders. And therefore, this statute was invalid.

THE ARMY HOSPITAL STEWARDS.

The Hospital Stewards of the Army are urging their claims to recognition as one of the educated army classes, by endeavoring to procure such legislation as will give them rank and special commissions in the Medical Department.

In the old Army any bright soldier was likely to be selected by a Surgeon and detailed as Acting Hospital Steward by the Commanding Officer. In the hospital he picks up the names of the more common drugs, learns after a while to compound simple prescriptions, and perhaps to apply a bandage.

If the same conditions were now present there would be little reason in their claim, but the practice now is to secure registered pharmacists whenever possible for such appointments. They must enlist as soldiers, but it is with the distinct understanding that they will be appointed to the non-commissioned staff as Hospital Stewards immediately after enlistment.

These Stewards are clearly entitled to whatever improved standing the later and more exacting requirements should bring them, and whatever consideration is due the modern educated pharmacist is due the Hospital Steward. He is or should be a chemist, a botanist, a pharmacist, a bookkeeper and correspondent, acquainted with the details of hospital administration, and become an expert drill master in the Hospital Corps drill.

That the Government should demand all this and withhold recognition either in adequate pay or military honor, seems a pity.

PHYSICIANS' AND SURGEONS' INSTRUMENTS ARE MECHANICAL IMPLEMENTS.

The Board of U. S. General Appraisers at New York hold, in a decision of theirs rendered Dec. 30, 1893, that, following a fair construction of the language of the Supreme Court, instruments used by the physicians and surgeons of a hospital for the purpose of carrying on their professions, are mechanical implements—implements for carrying on the professions of medicine and surgery—and can not be classed as either philosophical or scientific instruments or apparatus, for the assessment of duties, when imported, and can not be admitted free.

Blank Applications for membership in the ASSOCIATION at the JOURNAL office.

CORRESPONDENCE.

Rates to the Association Meeting.

ROCKFORD, ILL., March 22, 1894.

To the Editor:—The encouragement being promulgated through the JOURNAL and the Pacific Coast medical press to members of the ASSOCIATION to turn out and make the June meeting a grand success is in every way very commendable and proper; but to the large body of the rank and file of the medical profession—those who do not hold office in the ASSOCIATION; those who do not hold office under the United States Government, or under the government of some one of the larger transportation companies; for all the members living east of the Rockies or the Mississippi, the serious question confronting them is *transportation*. Distance makes this a very important factor toward securing an attendance. Time will be consumed in transit and attendance, to say nothing of sightseeing; and absence from home to most of us means arrest of income; which added to the ordinary expense of travel, consumes a large share of the hard accumulated wealth of the busy domestic, or house-to-house visiting physician of the smaller towns and country surrounding. These are the men whom it is the alleged object of the ASSOCIATION to benefit. They are not dispensers of drugs, but faithful conveyors of the current knowledge of medicine to the people, where the *higher* lessons of the ASSOCIATION teachers find a fertile soil for propagation and successful growth. But, unless cheap rates are guaranteed, the combined arguments of the ASSOCIATION and Pacific Coast journals will *not* secure an attendance worthy of being called an AMERICAN MEDICAL ASSOCIATION. Cut rates will have been, by the time of the meeting, abolished, regular rates established, and with the question of transportation for the editors of influential journals and officers of the ASSOCIATION settled, some of the "members" will recognize the financial necessity of remaining at home and taking their medical nutriment from the souphouses of the enterprising dailies or advertising medicals.

At the Detroit meeting we had "one fare" from Chicago; at Milwaukee "one and one-third," while last winter for the occasion of the winter holidays the students of the Michigan University had a round trip of four dollars, Detroit to Chicago. The last meeting at Washington gave us a "one and one-third" and two weeks later gave the Tunkers—an uninfluential society—"*one rate*" to a small town in Maryland near Washington, with *two* stop over privileges each way. If distillers' or brewers' or millers' or grocers' associations want to meet in national convention for acknowledged purposes of private gain, they can invariably secure better rates of transportation than the AMERICAN MEDICAL ASSOCIATION does. Ministers, active or retired; high church and low church—some so low as to solicit life assurance or peddle homeopathic pellets—have half fare permits freely urged upon them at the beginning of every year over *all* lines in their territory. Yet who does more for the care of unemployed and unfortunate wrecks that railroad corporations every year make and cast adrift upon our communities than the local doctors? Who do they call upon for earliest aid and forget to pay when they have disasters like Kankakee, Chatsworth or Ashtabula? Who averts for them the conveyance of contagion and avoidance of sickness and accident in incidental travel so much as the doctor, whose keen and trained habits of observation turn on every train to aid some unfortunate, delirious with headache, ready to plunge from the platform; or suggests to the superintendent a sanitary precaution at station or on board that increases the pleasure of travel as well as revenue of stockholders? And yet when we meet in annual convention they usually

exact the outside limit of fare for transportation from us. Please say a word for us. We are as eager to learn as your city *confrerés;* we work hard and conscientiously, and would appreciate the favor of a low rate of transportation for ourselves and families across the continent as much as the most exalted officer of the ASSOCIATION.

DANIEL LICHTY, M.D.

Twenty-one years a member of the ASSOCIATION.

More Trouble for Medicus.

BOSTON, March 26, 1894.

To the Editor:—It was with great regret that I saw the article signed by "Medicus" which appeared in your JOURNAL of this week's issue. Whether or not the Code was violated in accepting the advertisements referred to, I will not discuss, but it appears to me that "Medicus" lacks very much in ethics and you, Mr. Editor, showed a great lack of discretion in allowing such an abusive article to appear. "Medicus" does not show very much logic in being personally abusive and bringing up the race question in a purely medical discussion. A physician and a gentleman ought not to resort to such methods. Why does not "Medicus" sign his name to his article? Is he afraid—or perhaps he has some interest in those new and wonderful remedies? Or perhaps he is a boomer to the syrup of figs cure. I shall be obliged to you if you spare a little space in your JOURNAL for this article. Yours respectfully,

J. W. ELKINS, M.D.

Baltimore Medical College—A Correction.

BALTIMORE, March 28, 1894.

To the Editor:—In your issue of the JOURNAL of March 17, 1894, I observe in your editorial, p. 394, you state the Baltimore Medical College is a two-year school, *i. e.*, graduates students after attendance upon a two-year course of lectures.

This school *is* and *has* been a member of the AMERICAN MEDICAL ASSOCIATION since its organization in Nashville four years ago. Its name will be found among the schools primarily suggesting a convention for the three-year movement.

The American Medical College Association permits all students who matriculated prior to July 1,1892,to apply for graduation at the end of two courses of lectures. The only students therefore that can possibly apply for graduation at end of second course in any school, a member of the Association, are those who so matriculated. All other *must* be and *are* pursuing a three-year graded course.

Our school is a three-year school, *precisely* as are other schools in the Association, governed by the same laws. I trust you will make the necessary correction in the next issue of the JOURNAL, as the editiorial in question, in stating the matter is in error.

Yours very truly,

DAVID STREETT, M.D., Dean.

ASSOCIATION NEWS.

The Association Train will leave Chicago Monday, May 28, via Santa Fe R. R., Rio Grande Western, and Southern Pacific, for San Francisco via Denver, Colorado Springs, Leadville, Manitou, Glenwood Springs, Salt Lake, Ogden, Truckee and Sacramento. Returning, after the meeting, the train will pass through Sacramento and Northern California to Portland, thence east by way of the Northern Pacific R. R. to St. Paul. C. M. & St.P. R. St. Paul to Chicago. A stop over at Yellowstone National Park for those who desire it has been arranged, and it has been understood that at several places on the journey there will be short stops. President Hibberd's party in a special car join the train at Chicago, and the St. Louis party are expected to join at Kansas City. From all points east and south, concentrating on this train should be effected at Chicago and St. Louis. For all information relating to this train, fares, etc., address J. M. Connell, 212 Clark st., Chicago, or any agent of Santa Fe line in other cities. Rates promised are the lowest excursion rates at time of departure.

This is the only route on which arrangements have been perfected by the Trustees.

Transportation Rates.—The Committee of Arrangements has worked indefatigably on the matter of transportation rates, trying to get a round trip for a single fare.

By advice of Mr. T. H. Goodman, General Passenger Agent of the S. P. Co., who furnished addresses, we sent out circulars to agents of all roads interested in the matter.

About one-half of those replying favored our petition and promised to advocate it before their respective associations, through which all such matters must be arranged.

The following communications from Mr. Goodman place the matter as it now stands, in a clear light:

"SAN FRANCISCO, March 16, 1894.

"*Dr. R. H. Plummer, Chairman Committee of Arrangements, American Medical Association, 652 Mission Street, San Francisco.*

"*Dear Sir:*—This morning's mail brings us your yesterday's letter, handing for our perusal three letters from Eastern railway officials. Having read the letters you sent, we return them herein and beg to emphasize our previous statements to you in person and by letter, that the Trans-Continental roads have virtually done what you ask, namely: accorded a one-way rate.

"In other words, the rate for a thirty-day ticket from Missouri River points to San Francisco is $60. Excursion, that is round-trip, tickets, Missouri River points to San Francisco and return, are being sold to-day at a rate of $65.50. Such tickets require the going trip to be made within fifteen days from date of sale, and the return trip within fifteen days after the day upon which the ticket is signed here in presence of a railroad agent, but in no event later than July 15 next.

"We have told you that within the State of California we ignore the fifteen-day limit on both going and returning trips; in other words, that the holders of the tickets are at liberty to move at will within the State of California within the life of the ticket, and that the fifteen-day limit returning is not enforced west of our terminals at Portland, Ogden and El Paso.

"You have asked our permission to state positively that these Midwinter Fair rates would be in force at the time attendants at your convention will want to move westward. We have replied that the traffic is west bound traffic, and that we do not control the matter. You will doubtless, however, recollect our telling you that this rate would, in all probability, hold until after that period. We gave you our reason for that statement, namely: that one of the roads had announced that it would continue the sales up to June 30.

"We appreciate your desire for an authoritative statement in this regard. As we can not make it, we will write you that we feel you are quite safe in stating the fact that such rates have been announced, and that the sale would continue until that date.

"We beg to again call your attention to one point, which is quite material in this matter: The Trans-Continental roads having virtually done what you asked, you should bring all the influence to bear that you can upon the roads east of the Trans-Continental roads. Those roads are, for the most part the ones forming the Western Passenger Association, the Central Traffic Association and the Trunk Line Association. The Western Passenger Association roads lie between the Missouri River and Chicago and St. Louis. You should go to them for a rate similar to our Midwinter Fair rate. They tell you their rate will be $20, Chicago to Missouri River and back, and $12 St. Louis to Missouri River and back. As the single-trip rate, Chicago to Missouri River, is $12.50, and from St. Louis $7.50, you will see that their rates are not reduced nearly as much as the Trans-Continental road rates. Can you not through some of your

profession at Chicago approach the General Passenger Agents of the lines leading from Chicago whose names we have given you? We think they will appreciate the importance of the occasion.

"One of our assistants has in hand the matter of reduced rates locally, and you will be shortly advised.

Respectfully yours,

T. H. Goodman."

Extracts from letter of Feb. 12, 1894:

"The rates thus continued are as follows: $65.50 from Missouri River points, being Sioux City, Council Bluffs, Omaha, Pacific Junction, St. Joseph, Atchison, Leavenworth and Kansas City; $77.50 from St. Louis, Cairo, Memphis and New Orleans.

"The rates mentioned to you exceed the one-way, thirty-day rates as follows:

"That from the Missouri River by $5.50; that from St. Louis, Cairo, Memphis and New Orleans, by $10, and that from Chicago ($85.50), by $13.

"We deem it but proper to here mention that if our Shasta Route between San Francisco and Portland is passed over on either going or returning trip from Missouri River, St. Louis or Chicago, the rate will be $15 greater.

"As on this occasion passenger movement is from the East to the West, it is but proper that the question of rates should be taken up with officials of Eastern roads. We suggest, therefore, that you correspond first with those who have charge of the passenger traffic of the so-called Trans-Continental Association roads. They are as follows:

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"For rates from the territory lying beyond the Missouri and Mississippi Rivers, you should address Mr. B. D. Caldwell, Chairman Western Passenger Association, Chicago; Mr. F. C. Donald, Commissioner Passenger Department Central Traffic Association, Chicago; Mr. L. P. Farmer, Commissioner Passenger Department Trunk Line Association, New York; Mr. M. Slaughter, Assistant Commissioner Southern Passenger Association, Atlanta, Ga."

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From the foregoing communications it will appear that, while we have not been wholly successful, if the roads between the Missouri River and Chicago, and between Chicago and Atlantic points where local travel far exceeds that over the Rocky Mountains, will give the same reductions as the roads from the Missouri River points to San Francisco, we will practically have a single fare for a round trip.

Can not the profession in the East, by united efforts, secure these concessions?

The time is growing short, and Chairmen of the several Sections should send in their reports, etc., for insertion in the program.

R. H. Plummer, Chairman.

San Francisco, March 25, 1894.

SOCIETY NEWS.

The Lucas County Medical Society of Toledo, Ohio, held its regular meeting March 19. The following officers were elected for the ensuing year: President, Dr. Wright; Vice-President, Dr. Foster; Secretary, Dr. Hunt; Treasurer, Dr. Waddick; the Executive Committee: Drs. McVety, Watson, and Heltman.

Academy of Medicine.—At the regular meeting of the Academy of Medicine of Cincinnati, held March 19, a resolution was introduced by Dr. P. S. Conner, protesting against the bill now pending in Congress to reduce the Medical Corps in the United States Army. The resolution was adopted by practically a unanimous majority.

Officers Elected.—At the meeting of the Chicago Medical Society April 2, the following were elected: Nicholas Senn, M.D., President; L. L. McArthur, M.D., First Vice-President; Harold N. Moyer, M.D., Second Vice-President; Arthur R. Reynolds, M.D., Treasurer and J. C. Hoag, M.D., Secretary.

Resolutions were also adopted expressing the deep sense of obligation of the Society to Prof. Senn for his donation to the Newberry Library.

Chicago Medical Society.—At its meeting, April 2, the Chicago Medical Society unanimously adopted a resolution indorsing the bill prepared and approved by the American Medical Association and the American Public Health Association for the creation of a Department of Public Health with a secretary who shall be a member of the Cabinet. The sentiment of the Society is that a Bureau of an existing Department, under the charge of a subordinate officer, as proposed by the New York Academy of Medicine, is not broad enough for the importance and magnitude of the interests involved.

The Illinois Army and Navy Medical Association.—The next meeting of the Association will be held in Decatur, Thursday and Friday, May 17 and 18, 1894.

It is the general desire that this shall be the best attended and most interesting meeting in the history of the Association. It will follow the meeting of the State Medical Society, which will convene in Decatur, Tuesday, May 15; thus the members of our Association who may be interested in the State Society will have an opportunity of attending both.

It is to be regretted that heretofore the attendance has not been such as it should have been; while all of the members are more or less responsible for that, still the failure in the past to gather the members of the Association is no reason why we should not now make a greater effort than ever before to have a well attended and good meeting. A meeting that shall bring together most if not all of the members who can possibly attend.

The old reaper, Death, is decimating our ranks from year to year; he is charging upon our lines and here and there our comrades are falling—bravely falling in the line of duty with their faces to the foe. They whose work it was, and who in the discharge of duty did so much in relieving suffering—and prolonging the lives of our brave boys—the heroes of 1861-'65—are themselves passing away rapidly. Many fell while in active duty during the struggle, many since then have surrendered to the common foe. Should not those of us who survive endeavor to meet annually; not only for the social pleasure and professional reunion; but to present papers, discuss them, compare the present with the past, the progress in surgery—especially military surgery—and topics akin to those which in times of war entered daily into the routine of our work, as well as those of later date which have been uppermost in our thoughts as we have been engaged in our life work. Is it not also our duty in fitting manner at our gatherings to honor the memory of those of our number who as years go by complete their work and become enrolled with the *Immortals?*

That an interesting program may be provided for our next meeting, we earnestly solicit a contribution from every member of the Association whether they can be present at the meeting or not. Will you not, dear doctor, at your first opportunity (and if one does not come by spontaneous generation, make one yourself) sit down—think awhile—arouse memory—stir up your cerebration, if need be—do it several times—and with pen, ink and paper, prepare a contribution, long or short, at your pleasure, that shall embrace some personal recollections of the part you had or observed while in the service as a surgeon or a soldier. It may be a story of some deed of heroism, on land or sea, by surgeon or soldier. It may be the history of a case of gunshot wound of more than ordinary interest. It may be a comparison of the then and present methods of treatment of wounds or diseases. But so many things will suggest themselves of interest, not only to yourself but associates also, and worthy of presentation. We will ask you to be guided by your own suggestions.

It is our further desire that what you do, you do quickly and transmit your paper to us if possible by April 15th prox. Also that you inform us at the same time, that you will, if possible, attend the Decatur meeting. The latter is important in order that we may know what calculations and preparations should be made for entertainment, and especially one evening when we think all would be pleased to gather around the festal board—a surgeon's campfire—for a pleasant social and intellectual time.

If there should be a general response from the members of the Association it will be possible for us to have material of such quality and quantity as not only to make our meet-

ing a very pleasant and profitable one but also of historic interest, worthy of preservation in the records or transactions of the Association.

We await with much interest your reply to this letter, for the success of our next meeting and the future of the Association is in your hands.

The party receiving this circular letter is requested to inform us of any death or change of residence among the membership of the Association during the year.

Please acknowledge the receipt of this letter. Address the President of this Association,

E. P. Cook, President, Mendota, Ill.
Edward P. Bartlett, Secretary, Springfield, Ill.

Association of Military Surgeons of the United States.—The program of the fourth annual meeting of this Association has been issued. The Association will convene at 10 A.M. in Albaugh's Opera House, Washington, D. C. The President of the United States is expected to be present and to make an address. The Association of Military Surgeons of the National Guard of the United States was organized in September, 1891, at Chicago, Ill., by a corps of representative members of the Guard from more than half of the States of the Union and several officers of the Medical Department of the U. S. Army, with many veteran surgeons, ex-officers of our volunteer army during the Civil War. The objects in view were announced as: The bringing of military medical officers in closer personal relations, and the development of a department *esprit de corps*, for the discussion of matters relating to the medical department of the militia, for the discussion of military matters from a medical and scientific point of view, for the reading of papers on military medicine and surgery, hygiene and equipment, and for the advancement and welfare of our civilian soldiers, whether in the field or at home. The Association was reörganized in August, 1893, under its present title. The roster includes active, honorary and contributing members. The active members are commissioned medical officers of the Army, Navy, Marine-Hospital Service and National Guard or Volunteer Militia of the United States. To honorary membership are elected men who have been in the medical service of the National Guard or in the medical department of the Regular Army or Navy and Marine-Hospital Service, or in that of the National Homes for Disabled Volunteers and any distinguished military or naval surgeons from any part of the world. Any person may become a contributing member by assisting in furthering the objects of the Association. At the present time there are 185 active, 42 honorary and 3 contributing members. The President is Colonel Nicholas Senn, Surgeon-General of Illinois National Guard; Vice-President, Colonel B. J. D. Irwin, Assistant Surgeon-General U. S. Army; Second Vice-President, Colonel Louis W. Read, Surgeon-General Pennsylvania National Guard; Secretary, Lieutenant-Colonel E. Chancellor, Missouri National Guard; Assistant Secretary, Captain J. M. Cabell, Assistant Surgeon U. S. Army; Treasurer, Major L. C. Carr, Ohio National Guard; Chairman Committee of Arrangements, 1894, Major George Henderson, Surgeon-General District Columbia National Guard.

It is earnestly requested that the Surgeon-Generals of the States send samples of "litters" for exhibition at this meeting, such as they now use, of anything peculiar or novel in them. The Army and Navy will show the different patterns of litters they have in use, and it is surmised that much profit and practical good will result from this interchange of views. It is estimated that the expense of sending litters to Washington will be comparatively small.

An exhibition of the field appliances and work of the Medical Department of the United States Army will take place at one of the morning sessions, and it is expected that a competitive Ambulance Corps Drill will be one of the many attractions at this meeting.

On the evening of the first day there will be an informal reception and collation at the Ebbitt House.

On the evening of the second day a reception by the President at the White House is anticipated.

The afternoon and evening of the third day the Committee has planned an enjoyable trip on a palatial steamer, down the historic Potomac, making a landing at Mount Vernon for an hour, and then speed on down the river to Marshall Hall, the home of Chief Justice John Marshall, and there partake of a popular and elegant "plank shad bake," and return before midnight.

A committee of ladies will look after the comfort and welfare of all ladies in attendance on this occasion.

It is very important that the Committee of Arrangements should know as early as possible if you will attend this meeting, and how many will form your party, and the hotel accommodations desired.

The fatigue uniform will be worn during the day and full dress with side arms at all evening entertainments; otherwise, the civilian *full dress*, with the Association button must be worn.

The following are the papers expected to be presented at the meeting:

President's address, "Abdominal Surgery on the Battle-Field," Col. Nicholas Senn, Surgeon-General Ill. N. G., Chicago, Ill.

SYMPOSIUM ON TRANSPORTATION OF THE SICK AND WOUNDED.

"History," Col. Chas. H. Alden, Ass't Surgeon-General U. S. A., Washington, D. C.

"Litter," Major Valery Havard, Surgeon U. S. A., Fort D. A. Russell, Wyo.

"Travois," Major John Van R. Hoff, Surgeon U. S. A., Governor's Island, N. Y.

"Railway," Col. Louis W. Read, Surgeon-General N. G. Pa., Norristown, Pa.

"On Board Ship," Albert L. Gihon, Medical Director U. S. Navy, Washington, D. C.

"Ambulance," First-Lt. Myles Standish, Surgeon Mass. V. M., Boston, Mass.

"Notes on the Introduction of Tent Field Hospitals in War," showing the advantages of treating military invalids under canvas on the battlefield, instead of buildings improvised for hospitals, by Col. B. J. D. Irwin, Ass't Surgeon-General U. S. A., Chicago, Ill.

"The Medical Officer at the Summer Encampments," by Lieut-Col. Chas. R. Greenleaf, Deputy Surgeon-General U. S. A., San Francisco, Cal.

"Easy Methods of Carrying Out the Principles of Aseptic Surgery," by Col. Robt. Reyburn, Late Surgeon and Bvt. Lt-Col. U. S. Vols., Washington, D. C.

"Equipment and Instruction of Sanitary Soldiers," by Capt. Chas. F. Mason, Ass't Surgeon U. S. A., Ft. Snelling, Minn.

"A Field Kitchen Wagon:" For cooking food and sterilizing dressings at dressing stations and on the march, by Capt. H. O. Perley, Ass't Surgeon U. S. A., Plattsburg Barracks, N. Y.

"The Personal Equipment of the Sanitary Soldier," by First-Lt. Geo. D. DeShon, Ass't Surgeon U. S. A., Fort D. A. Russell, Wyo.

"The Action of Rattlesnake Venom upon the Bactericidal Power of the Blood Serum," by Capt. Chas. B. Ewing, Ass't Surgeon U. S. A., Fort McHenry, Maryland.

"The Relation of the National Guard Surgeon to the Medical Profession and to the Community," by Capt. T. C. Clark, Ass't Surgeon N. G. Minn., Stillwater, Minn.

"Sabre Wounds," by Col. R. E. Giffen, Surgeon-General N. G. Neb., Lincoln, Neb.

"The Special Training of the Medical Officer," with brief notes of the courses of instruction at Army schools abroad and at home, by Col. Chas. H. Alden. Ass't Surgeon-General U. S. A., Washington, D. C.

"A New Sanitary Appliance in the First Line of Battle-Field Assistance," by Major John Van R. Hoff, Surgeon U. S. A., Governor's Island, N. Y.

"Some Notes on the Late Civil War," by Col. Richard F. Michel, Surgeon-General Alabama State Troops, Montgomery, Ala.

"Destructive Effects of the Krag-Jorgensen Rifle Projectile at the Actual Ranges," by Capt. Louis A. La Garde, Ass't Surgeon U. S. A., Denver, Col.

"Camp Hospitals," by Major Lawrence C. Carr, Surgeon N. G. Ohio, Cincinnati, Ohio.

"Progress of Medico-Military Science in the National Guard of New Jersey," by Brig.-Gen. Jno. D. McGill, Surgeon-General N. G. of N. J., Jersey City, N. J.

"The Remote Effects of Gun-Shot Wounds of the Extremities," by Lt.-Col. C. M. Woodward, Ex-Surgeon-General Mich. State Troops, Tecumseh, Mich.

"Notes on the Transportation of Sick and Wounded," by Capt. J. D. Glennan, Ass't Surgeon U. S. A., Fort Sill, Oklahoma Ter.

"Case of Gunshot Wound of Liver:" With remarks on

liver wounds antiseptically treated, by Capt. G. E. Bushnell, Ass't Surgeon U. S. A., Fort McKinney, Wyo.

"The Treatment of Gonorrhea in Military Practice," by Major G. Frank Lydston, Surgeon Ill. N. G., Chicago., Ill.

"Description of a New Litter," by Capt. Francis J. Ives, Ass't Surgeon U. S. A., Ft. Sheridan, Ill.

PUBLIC HEALTH.

Cholera in Constantinople.—The Greek Government announces the receipt of a dispatch from Constantinople stating that nine cases of Asiatic cholera, three of which proved fatal, occurred in that city within the few days prior to March 23.

Leprosy in Kentucky.—Dr. D. B. Schoolfield, of Dayton, Ky., reports a case of leprosy at that place. The patient is a 14-year old boy whose father says the disease was contracted at Key West, Fla., where the family formerly lived. The premises have been put in quarantine by the local health officer.

Scarlet Fever in Schools.—Students in the college at Winnebago City, Minn., and in the Union Theological Seminary, New York City, have been taken down with scarlet fever, and at the former place the college, churches and schools have been closed by the authorities. The theological student is believed to have contracted the disease in a horse car.

Typhoid from Cow's Milk.—An apparently well-authenticated outbreak of enteric fever from typhoid-infected milk is reported from Montclair, N. J. Some thirty families had been affected up to date. These, it is claimed, were all supplied with milk by a dairyman in whose family two children had been ill with typhoid fever for some weeks before the outbreak.

A Dangerous Nostrum.—Health Commissioner Reynolds, of Chicago, has analyzed a sample of a nostrum called "Birney's Catarrh Cure," sold indiscriminately by many druggists. He found 4 per cent. of cocain in the sample and adds that "the indiscriminate use of such a remedy is dangerous in that it may be used to excess, and then the dangerous properties of the contained remedy will become apparent. The amount of cocain in Birney's Cure is sufficient to develop the cocain habit when it is used persistently and in quantities."

New York State Board of Health.—The inquiry into the management of the New York State Board of Health, by a special committee of the State Senate, still drags its slow length along. At a recent session Dr. Lewis Balch, the Secretary, recalled to the witness stand, said he had some time ago intended to resign, but on being informed that charges were to be preferred against him he had postponed handing in his resignation. In answer to a direct inquiry he said he now intended to resign his office in the coming May.

Smallpox having appeared in two almshouses in Illinois, to-wit: at Libertyville, Lake County, one case, and at Edwardsville, Madison County, fifteen cases, the State Board of Health has renewed its order for the summary vaccination of all inmates of such institutions throughout the State. Secretary Scott has also urged the immediate vaccination of all employes of railway companies. Secretary Probst of the Ohio State Board and Secretary Metcalf of the Indiana State Board have taken similar action. Responses from the railways indicate a general compliance and some companies have made recent vaccination a condition of employment.

A Boycotted Water Supply.—The typhoid epidemic at Ashland, Wis., has been ascribed to the Ashland Water Company and, as a result, the use of the water furnished by the Company has been almost entirely abandoned—its place being taken by spring water from driven wells and from the Weber Mineral Springs near the town. The Water Company insists that the water it supplies is pure and its proposition to pay the expense of analyses, to be made at frequent intervals by experts whom the Ashland Medical Society shall designate, has been accepted by the Society. Meantime, and incidentally with the boycotting of the Water Company's supply, the epidemic is abating.

Sanitation of the Cholera Centers.—In accordance with the agreement made at the recent International Sanitary Conference at Paris, heretofore referred to in the JOURNAL,[1] the Sultan of Turkey has sent a special mission to the Yemen under Marshal Assaf Pacha, to superintend the sanitation of the "holy places." Various establishments for the accommodation, boarding and medical treatment of the pilgrims are being constructed; asylums, hospitals and dispensaries are being built; the wells are being cleansed and disinfected; the tanks are being increased in number and a large and competent staff of physicians is stationed at Mecca—the shrine of the Prophet—Medina, El Thor and at the Red Sea ports where the pilgrims land.

Typhoid in Buffalo.—The epidemic of enteric fever in Buffalo, N. Y., which the late Dr. Rauch was investigating for the JOURNAL at the time of his death, seems to have attained its maximum about March 21, up to which date 414 cases with 21 deaths had been reported from the beginning of the outbreak, March 6. A few additional cases and deaths have since been reported from day to day up to the close of the month, but the epidemic, as such, is substantially ended. The cause of the outbreak is not yet decided, but investigations are in progress which, it is hoped will determine this important point. Bacteriologic examinations of the Niagara River water, taken at the Bird Island inlet, point to typhoid contamination of the water supply.

State Hospital for Consumptives.—A short time ago the Secretary of the Michigan State Board of Health read a paper in which he advocated special hospitals for certain classes of consumptives. Now he is being inquired of relative to a *State Hospital* for Consumptives. One letter is as follows:

"Now suffering from consumption, I write for what advice you may give me that will be of use to me in taking care of myself and preventing its spread. I had the grippe over two years ago, and a severe cold, and my left lung has troubled me ever since. I have been told that there is a building being erected to be used as a hospital for the care of consumption, free to all those that are not able to pay—the State of Michigan to stand the expense. If there is such a place, I would like to be treated as soon as they are ready. Hoping to hear from you soon, I am, very respectfully," etc.

Undoubtedly many lives could be saved in Michigan if poor persons suffering from this most dangerous communicable disease could be placed in a special hospital, where under well-planned rules and trained attendants the danger of spreading the disease shall be reduced to the minimum. The disease is spread in several ways, one of the chief being by the dust from the dried matter which is coughed up and expectorated, such infectious dust being breathed in by whoever comes within the area of the infection.

A letter from a Health Officer reads as follows:

"Inasmuch as you have decided to put consumption in the category of contagious diseases (which ought to have been done long ago), I write for a little advice. We have a pauper of the township who has been afflicted with consumption for a year or two. The supervisor boards him at one of the hotels in the village of ———, where he has the use of the sitting-room, office and bar-room, as he is yet able to be around. Besides using the floors and cuspidors he is in the

[1] JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Feb. 24, 1894.

habit, most every morning, of standing on the porch and coughing up a half teacup or more of sputa and expectorating it upon the sidewalk. I have labored with him, the proprietors, and the supervisor to prevent such an exposure to others, but of no avail. I have tried to get the supervisor to send him to the county house, but don't succeed. What am I to do?"

The Secretary of the State Board of Health estimates that there are in Michigan in every year about three thousand *new cases* of consumption, and that in each year about that number of persons die in Michigan from consumption. He believes that in each year possibly hundreds of these *new cases* might be prevented by such provision by the State as would care for a few hundreds of poor persons having consumption of the lungs, and who are now expectorating and scattering the seeds of consumption broadcast, to rich and poor alike, through hundreds of communities.

If the State Legislature does not soon make such provision, perhaps some philanthropic millionaire may see in this proposition a useful service which he may easily do for the welfare and happiness of the people. The establishment of such a hospital for the *prevention*, as well as for the cure, of this disease which now causes the most deaths, would indeed be a noble act, and a grand monument to the memory of the founder. Henry B. Baker, Secretary.

Office of the Secretary of the State Board of Health, Lansing, March 24, 1894.

Legal Sequelæ of Vaccination.—In refusing an injunction to restrain the school directors of Williamsport, Pa., from excluding unvaccinated pupils from the public schools, Judge Metzger held that the directors have the power, delegated to them by the Legislature, "to exercise a general supervision over the public schools of their district" and that with the exercise of this power no court has authority to interfere. This "general supervision" implies the power to make any rule, or regulation, which may be deemed necessary for the prevention of the spread of disease among the pupils attending school. "Vaccination," said the Judge, "is a sanitary regulation, intended to protect the health of the pupils. No one would doubt their power to exclude a pupil from school if its parents or any member of the family in which it resided was afflicted with smallpox, or any other malignant disease that was contagious. A rule excluding all such would be regarded as reasonable and proper. Why then should an order excluding all not vaccinated, and who refuse to be vaccinated, be held unreasonable and beyond the power of the directors to enforce?" In some States the Legislature have provided by statute for the exclusion from school of persons not vaccinated, although otherwise entitled to admission. This is so in Maine and in Massachusetts. And in Abell vs. Clark, 84, Cal. 226, it is held to be competent for the Legislature to require pupils of the public schools to be vaccinated. If the Legislature can do so, then it is also competent for the body to whom it has delegated its power over the public schools to do likewise. It has delegated to the school boards of the respective districts the power of general supervision over public schools. This power in controversy contravenes no law and violates no principle of morality or public policy. On the contrary, the welfare of the public demands that at particular times such orders should be enforced."

In a suit to restrain the principal of a public school from enforcing the vaccination order of the Terre Haute, Ind., local Board of Health, the court decided to hear testimony as to the efficacy of vaccination, notwithstanding the opinion of the Supreme Court of California, in a similar case, that vaccination having been accepted by the world of science it is no longer an open question. The Indiana State Association of Anti-Vaccinationists is backing up this suit as a test case. Among the witnesses was one, 70 years of age, who testified that he "had suffered from the bad effects of being vaccinated at 2 years of age." Had he not been then vaccinated there is no telling how old he might now be. Dr. Caldwell, a Terre Haute physician, testified that he knew of two deaths which he attributed to vaccination, but he said he would not treat a smallpox patient unless he had himself been vaccinated. A man named Rhodes testified that he was vaccinated in 1881 and that six years afterward a running sore came on his leg and that he has suffered ever since. Mr. and Mrs. Tusche testified to having had the smallpox after being vaccinated, one thirteen years and the other twenty years afterward—the inference being: No vaccination, no smallpox. And such are the end-of-the-century arguments against vaccination in Indiana—and elsewhere.

The school board of Utica, N. Y., having disregarded the advice of the local board of health on the enforcement of vaccination of public school children—replying to such advice that it would enforce vaccination when it "got good and ready" and threatening the health board with legal action to make it keep "hands off"—the health authorities cite the following sections of the New York statutes:

"No child or person not vaccinated shall be admitted or received into any of the public schools of the State, and the trustees or other officers having the charge, management or control of such schools shall cause this provision of law to be enforced."

"A person who wilfully violates any provision of the health laws, the punishment for violating which is not otherwise prescribed by those laws or by this code; and a person who wilfully violates or refuses or omits to comply with any lawful order or regulation prescribed by any Board of Health or health officer, or any regulation lawfully made or established by any public officer under authority of the health laws, is punishable by imprisonment not exceeding one year, or by a fine not exceeding $2,000, or both."

Based upon these the Board of Health orders that no child shall be admitted into any school, public or private, in Utica unless vaccinated within four years prior to date of admission; and formally notifies the school board and the superintendent of public schools to comply with and enforce this order under penalties authorized by the statutes.

At Mt. Erie, Wayne County, Ill., a criminal suit was brought against the school directors for enforcing the school-vaccination order of the State Board of Health. Justice Dogberry—it could have been none other than he who delivered the famous charge to the watch—fined the school board $1 for the first offense and, on a second suit, imposed a fine of $2—under what provision of what statute has not yet been discovered. The State Board of Health had the cases appealed to the circuit court where they were promptly dismissed, the prosecution abandoning them. A civil suit for $2,000 damages has been brought by parents of school children against the St. Francisville, Lawrence County, Ill., school board on the same ground as in the Mt. Erie cases. The State Board of Health will defend in this suit, which is still pending.

BOOK NOTICES.

Essentials of Physics. By Fred. J. Brockway, M.D. Second Edition. Crown 8vo, 320 pages, 155 fine illustrations. Price, cloth, $1.00 net. Interleaved for Notes, $1.25 net. Philadelphia: W. B. Saunders. 1894.

This book, which only claims to be a compilation, will be found extremely useful to students preparing for entrance examinations, and as well to seniors wishing to refresh their minds on the subject of physics. The various attributes of matter: light, heat, electricity and sound, are concisely and carefully stated. It is especially full on the subject of electricity.

Anomalies of Refraction and of the Muscles of the Eye. By Flavel B. Tiffany, M.D. Author's Edition. Kansas City: Hudson-Kimberly Publishing Company. 1894

In this neat little illustrated volume of about 300 pages, the author has included the physics of vision, the methods of physical examination of the eye, and the anomalies of refraction, as well as of muscular balance. The subject is presented in the most elementary and easily comprehended

manner, and any one who does not have access to the larger text-books on ophthalmology can get condensed and well-digested information from its contents. But the topics are not treated extensively enough for the practicing oculist. The indispensable mathematical formulæ are omitted and the therapeutic directions are not sufficiently precise for application in practice. On various pages, views are presented (for instance on presbyopia and heterophoria) which do not correspond to what is generally known of these subjects. The work contains no literary references of any kind.

NECROLOGY.

Wm. Howe Harris, M.D., of Louisville, March 20, aged 60 years.——Geo. W. Stone, M.D., of Rome, Pa., March 14, aged 80.——J. Knox Thompson, M.D., of Petersburg, Va., March 19. Dr. Thompson was serving his second term in the Virginia Legislature.——Almon Lull, M.D., of Berkeley, Cal., March 16, aged 89.——J. W. Lambert, M.D., of Peoria, Ill., March 20.——John R. Logan, M.D., of Grand Forks, N. D., March 18. He was born at Fenelon, Ont., and graduated at Trinity College, Toronto.——A. P. Edgar, M.D., of Collins, Iowa, March 15, aged 40. He was a graduate of the Medical Department of the State University of Iowa.

Charles B. Edouard Brown-Sequard.—The Island of Mauritius was the birthplace of Charles B. Edouard Brown-Sequard, who first saw the light there in 1818. His father, a Philadelphia sea captain, lost his vessel in an attempt to carry provisions to the people of the Island during a famine. The captain remained on Mauritius and married a lady named Sequard, and their son took both their names. He was partly educated in Mauritius, finishing his studies in Paris, where he received the degree of M.D. in 1846. He made radical discoveries in connection with the blood, and was awarded five prizes by the French Academy and twice received the Queen's grant for the encouragement of science, from the British Royal Society. His experiments with regard to the nervous system were also interesting and worked complete changes in the theories and practice of medicine. In 1858 he delivered lectures in London before the Royal College of Physicians and Surgeons. In 1864 he was appointed Professor of the Pathology and Physiology of the nervous system at Harvard University and held the chair four years, after which he returned to France and was given the Chair of Experimental and Comparative Pathology in the School of Medicine in Paris, which place he kept till 1871. In 1873 he came to New York and took up the practice of medicine. Five years later he returned to Paris and was given the Chair of Experimental Medicine in the College of France. He published many works of great value, and was in constant demand as consulting physician in important cases of nervous diseases. He considered himself an American, and was proud of the country of his father.

The Lebanon County, Pa., Medical Association Adopts Resolutions on the Death of Dr. J. H. Rauch.—A meeting of the physicians of Lebanon County was convened at the office of Dr. A. B. Gloninger, in Lebanon, March 27, at 11:25 A.M., attended by Drs. W. M. Guilford, H. H. Roedel, S. P. Heilman, J. W. Trabert, J. C. Bucher, G. L. Weiss, A. B. Gloninger, John Walter, W. F. Kline, J. A. Biever and C. W. Schmehl, to take action relative to the death of Dr. John H. Rauch. Dr. Guilford was called to the chair and Dr. Heilman was appointed Secretary. Dr. Guilford then gave verbally an interesting sketch of the career of Dr. Rauch, referring to his service to the medical profession in elevating its standard, and to the country and world at large in sanitary work, to his mission to various important foreign scientific and medical assemblages, his unselfish character his constant activity and his useful life in its entirety.

On motion it was ordered that a committee of three, to include the President and Secretary of the meeting and Dr. Roedel, be appointed to draw up a suitable minute relative to Dr. Rauch, that the press of this city be requested to give publicity to the same, that a copy of said minute be furnished to the brothers and sisters of the deceased, that the members of the profession in Lebanon County be notified of this action, that they be requested to proceed in a body to the house from whence the funeral is to proceed, and also attend the service in a body.

Wm. M. Guilford, President,

Attest:—S. P. Heilman, Secretary.

At this meeting it was unanimously

Resolved, That by the death of Dr. John H. Rauch, the medical profession in the United States as well as in the whole civilized world, has lost an eminent sanitarian, who has devoted the most of his active life to the interests of public health; in many cases imperiling his own life in infected camps and cities to ward off the dread infectious diseases, cholera and yellow fever, and prevent their entrance into this country, or to limit their spread. His interest in the higher medical education and the elevation of his chosen profession was earnest and has resulted in great good.

Resolved, That the medical profession and the cause of science at home and abroad has sustained in the death of Dr. John H. Rauch an almost irreparable loss.

Resolved, That as a kind Providence decreed that he should return to the home of his youth to meet the last great event, we, his fellow physicians of Lebanon County, will honor his memory and pay the last tribute by attending his funeral in a body.

Resolved, That a copy of these transactions and resolutions be given to the public press of this city and an engrossed copy be sent to the bereaved family.

W. M. Guilford,
S. P. Heilman,
H. H. Roedel,
} Committee.

MISCELLANY.

Has Practiced Half a Century.—Dr. Benj. F. Hart, of Marietta, Ohio, celebrated the fiftieth anniversary of his professional life, March 24.

The late Professor John Tyndall, the eminent British scientist, gave to Harvard, in 1885, the sum of $10,000 to found scholarships for one or more students who may show decided talent in physics. This sum was part of the proceeds of lectures delivered by Professor Tyndall in America in 1872.

Hospital Notes.

The General Assembly of Iowa has voted to locate the new northwest insane asylum at Cherokee, Iowa.

Rochester State Hospital.—The managers of the Rochester State Hospital are making preparations for rebuilding that portion of the institution which was recently destroyed by fire. The probable cost of the repairs will be $65,000.

An Overcrowded Hospital.—The Presbyterian Eye, Ear and Throat Charity Hospital of Baltimore, has such a following that the building is now overcrowded. New patients admitted for treatment in the Free Dispensary exceed 1,200 each month since Jan. 1, 1894, and the attendance during this period has exceeded 10,000 persons. The Board of Governors have recently purchased contiguous property 150x30 feet for Hospital extension. This charity has become one of the largest special hospitals in the country.

Medical College Notes.

The Medical Department of the University of Wooster, Cleveland, Ohio, held its commencement exercises March 21, and conferred the degree of M.D. on ten graduates.

The University Medical College, of Kansas City, held its commencement March 20. There were nineteen graduates.

The Cleveland University held its commencement

March 20, and conferred the degree of M.D. on thirty graduates. Four graduates received the degree of D.D.S.

The Kansas City Medical College at its twenty-fifth annual commencement March 22, awarded diplomas to thirty-two graduates.

The Barnes Medical College, of St. Louis, Mo., held its commencement March 20, and forty-two graduates received the degree of M.D.

The Long Island College Hospital held its thirty-fifth annual commencement March 21. There were fifty-four graduates.

Beaumont Hospital Medical College.—It is unofficially reported that the Beaumont Hospital Medical College of St. Louis, will be closed, and that the faculty will be consolidated with the College of Physicians and Surgeons.

Its First Commencement.—The Wisconsin College of Physicians and Surgeons at Milwaukee graduated two students March 26.

Stirring up the Colleges.—The Missouri State Board of Health is inspecting the medical Colleges of that State as to equipment, laboratory facilities and curricula of instruction. It has already examined eight St. Louis institutions and is this week examining the colleges in Kansas City, where there is trouble in the faculty of the Homeopathic College. As a result of the St. Louis inspections, the Deans of the St. Louis Hygienic College of Physicians and Surgeons, the Woman's Medical College and the American ("Eclectic") Medical College have been notified that they do not conform to the requirements of the Board and that, therefore, their diplomas will not be recognized as entitling their possessors to practice in Missouri.

The Hygienic College was notified to the same effect by the Illinois Board last winter, and the Dean of the American ("Eclectic") Medical College has been notified by Secretary Scott that an adverse report will be made at the next meeting of the Board by the committee which recently investigated that institution.

The Toledo (Ohio) Medical College has been restored to "good standing" by the Illinois Board.

Russian Medical Qualifications.—What is known as the "feldscher certificate"—a Russian medical qualification—is frequently offered in the United States as the equivalent of a diploma of the degree of Doctor of Medicine, and has been commonly accepted as such in States where the laws require a medical diploma as the basis for license to practice. Some time since the Illinois Board of Health undertook to determine the value of these certificates for the purposes of the Illinois medical practice act. An authoritative statement of the character of Russian medical qualifications has just been received by Secretary Scott from the foreign office of the Russian Imperial Government through the Hon. G. Creighton Webb, Secretary of the United States Legation at St. Petersburg. Following is a translation of the statement:

Note of the Medical Department to the Department of the Interior, dated Feb. 10, 1894, No. 1020.

Referring to the despatch of February 5, the Medical Department has the honor to inform the Department of the Interior that, according to the existing laws, (Articles 93, 94, 95, 116, 587, Medical Statutes, Vol. XIII, Code of Law, edited in 1892) no one, be he Russian subject or foreigner, not possessing a diploma or a certificate from a Russian university or from the Imperial Military Medical Academy, has a right to practice any branch of medicine in Russia. Foreign physicians possessing foreign diplomas and desiring to practice medicine in Russia are obliged, besides receiving a diploma of their profession from a Russian university or from the Imperial Military Medical Academy, to know the Russian language. Foreign physicians, however, who are well known, or who have made themselves acquainted to the learned world by their works or by successful and eminent practice, or who have occupied professorial chairs or important medical positions in some other country, are allowed to practice in Russia after only a verbal examination (colloquium) in the Medical Council or without any examination whatever, subject to the decision of the Medical Council, confirmed by the Minister of the Interior. The names of all physicians who have the right to practice in Russia are entered on the General Medical List issued annually by the Medical Department.

Midwives are also obliged to possess diplomas from medical faculties or from the Military Medical Academy.

Feldschers are not allowed to treat independently in Russia, but are allowed to give preliminary help in illness before the arrival of the doctor and under his control and also to perform all the feldscher functions, viz.: to nurse the sick, to make ordinary simple bandagings, to let blood (by order of the doctor), to revive unconscious persons, to vaccinate, to extract teeth, to set bones, to write prescriptions under the dictation of the doctor, to prepare medicines, etc.; they are also allowed to use medicines in their treatments, but only such as are considered absolutely innocent house remedies, and by no means strongly acting medicines. (No. 100, Code of Regulations and Statutes of the Government, Dec. 3, 1875, Article 2015.)

(Signed) Constantinov.

It is not probable that the "feldscher certificate" will hereafter be accepted, in Illinois at least, as the equivalent of the diploma required by law.

THE PUBLIC SERVICE.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from March 24, 1894, to March 30, 1894.

Lieut.-Col. Samuel M. Horton, Deputy Surgeon-General, will report in person to the President of the Army Retiring Board, at San Francisco, Cal., for examination by the Board. By direction of the President.

Capt. William R. Hall, Asst. Surgeon, is relieved from duty as attending surgeon and examiner of recruits at San Francisco, Cal., to take effect upon the completion of his examination for promotion, and will report in person to the commanding officer, Whipple Bks., Ariz., for duty at that post.

LETTERS RECEIVED.

(A) Atkinson, W. B., Philadelphia, Pa.; Ayer, N. W. & Son, Philadelphia, Pa.

(B) Baker, Henry B., Lansing, Mich.; Baker, A. R., Cleveland, Ohio; Breedlove, J. W., Fort Smith, Ark.; Beaty, R. C., Lebanon, Mo.; Berliner, Paul, Berlin, Germany.

(C) Cone, Andrew, New York City; Cook, E. P., Mendota, Ill.; Coffman, W. H., Georgetown, Ky.; Coleman, W. Franklin, Chicago, Ill.; Clinton, J. J., Baltimore, Md.

(D) Denison, Charles, Denver, Col.; Dubreuilie, U., Bordeaux, France; Dunglison, R. J., Philadelphia, Pa.; Duncan, T. C., Chicago, Ill.; Du Boise, Robert, Sewanee, Tenn.; Duff, J. Milton, Pittsburg, Pa.

(F) Farrington, John M., Binghamton, N. Y.

(H) Hummel, A. L., Philadelphia, Pa.; Hutchins, W. A., Orangeville, Ill.; Hubbell, Alvin A., Buffalo, N. Y.; Hudspeth, G. W., Little Rock, Ark.; Hibberd, Jas. F., Richmond, Ind.; Hill, Eugene, Newton, Mass.

(K) Kerrick, H. C., Brockton, Ill.; Kieruff, B. F., Los Angeles, Cal.; Kirkpatrick, A. B., Philadelphia, Pa.; Kellogg, Will K., Battle Creek, Mich.

(L) Lynch, W. M., New Orleans, La.; Lambert Pharmacal Co., St. Louis, Mo.; Lucas, W. H., Cleveland, Ohio; Longfellow, R. C., Cincinnati, Ohio.

(M) McGown, W. D., Latrobe, Pa.; McDonald, J., Jr., New York City; McArdle, T. E., Washington, D. C.; Mathews, C. O., Terrell, Texas; Mathews, J. M., Louisville, Ky.; Middleton, W. D., Davenport, Iowa.

(N) New York Post-Graduate Medical School, New York City.

(P) Peterson, Reuben, Grand Rapids, Mich.; Pierce, Lorich, Washington, D. C.; Phelps, R. M., Rochester, Minn.; Plummer, R. H., San Francisco, Cal.; Paramore, H. H., Indianapolis, Ind.; Posman, A., Paducah, Ky.

(R) Rowell, Geo. P. & Co., New York City, 2; Rauch, C. G., Lebanon, Pa.

(S) Schaeffer, E. M., Dansville, N. Y.; Smith, Q. C., Austin, Texas; Stutsman, Carl, Burlington, Iowa; Smith, F. T., Chattanooga, Tenn.; Smart, Chas., Washington, D. C.; Schooler, Lewis, Des Moines, Iowa.

(T) Tracy, J. L., Toledo, Ohio; The H. & W. B. Drew Company, Jacksonville, Fla.

(V) Vetter, J. C. & Co., New York City.

(W) Whitney, P. J., St. Paul, Minn.; Washburn, W. H., Milwaukee, Wis.; Ward Brothers, Jacksonville, Fla.

PAMPHLETS RECEIVED.

Vaginal Hysterectomy for Carcinoma of the Uterus Performed by Enucleation without Hemorrhage. By Robert Reyburn, A.M., M.D.

State Board of Health (Tenn.) Bulletin. 1894.

The Cause and Cure of Malignancy. By Wm. Thornton, M.D.

Sixteenth Annual Report, Presbyterian Eye, Ear and Throat Charity Hospital, Baltimore. 1893.

A New Milk or Water Sterilizer, Bulletin No. 53, Agricultural Experiment Station, Agricultural and Mechanical College, Auburn, Ala.

The Application of Graphics to the Fetal Heart Sounds. By Hugh Hamilton, M.Sc., M.D.

A New Dynamometer for Use in Anthropometry. By J. H. Kellogg, M.D.

Prostitution: Its Cause, and the Relation of the Medical Profession to its Abolishment. By J. F. Percy, M.D.

Expert Medical Testimony as Illustrated in Some Recent Criminal Cases in the Courts of this City. By N. S. Davis, M.D.

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LECTURE.

SOME RECENT ADVANCES IN SURGERY OF THE HEAD.[1]

A Lecture delivered before the Medical School of the United States Army, Washington, D. C., Jan. 18, 1894.

BY W. W. KEEN, M.D.

PROFESSOR OF THE PRINCIPLES OF SURGERY AND OF CLINICAL SURGERY, JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

"Gentlemen of the Army Medical School and friends:—It is a very peculiar pleasure to me to be present to-day for two reasons. One is because I feel the very greatest interest in such a medical school. Having visited a good many years ago the English Army Medical School at Netley, and observing the very great advantages that were presented for the medical officers of the Army and Navy there, I have beheld with the greatest delight the broad-minded policy which has established this school here. It is also a great delight to me to renew an old acquaintance with the President of the Faculty whose acquaintance I first made as a fellow student in Brown University. Subsequently this friendship was cemented during the war when Drs. Mitchell, Morehouse and I were associated with him in the hospital for wounds and injuries of the nervous system.

I want to say a few words in reference to some points as to two topics in connection with recent progress in intracranial surgery. Time will only allow me to speak of:

1. Those infective diseases of the brain arising from diseases of the ear.

2. Intracranial hemorrhage.

First then, infective diseases of the brain, extending sometimes even to the spinal cord, principally arising from infective diseases of the ear. These may be four in number: 1, we may have a pachymeningitis. This is generally limited to the brain, but it may extend occasionally, though rarely, to the cord. It gives rise, also, not uncommonly, to "extradural" abscess; 2, leptomeningitis, or inflammation of the soft membranes of the pia mater, which causes either a diffused inflammation or a localized "subdural" abscess; 3, abscess proper; that is abscess in the structure of the cerebrum or the cerebellum; 4, thrombosis of the sinuses, more especially in the sigmoid portion of the lateral sinus.

If any of you will examine an open skull you will notice that the petrous bone forms a water-shed between the posterior and middle fossæ of the skull, in which lie respectively the cerebellum and the temporo-sphenoidal lobe of the cerebrum. Moreover, if you will examine the petrous bone, especially in sections, you will be struck very much by the thinness of the bone, in some parts not thicker than a sheet of paper, so that by its ready caries or necrosis inflammation may easily extend from the cavity of the tympanum to the intracranial cavity. Moreover, a large number of veins pass through the bone and afford a ready path from one cavity to the other. It will be seen therefore, that these infective diseases very frequently will attack those portions either of the brain or its envelopes which lie immediately in juxtaposition with the anterior or the posterior surface of this petrous bone. Given then, this easy mode of access, what is the ordinary course of such a disease? It is important to remember that these diseases of the brain very rarely arise from acute middle ear disease; they are almost invariably the result of chronic otitis media. They are occasionally the result of disease of the nasal cavities or of the soft parts of the face; but in ninety-five cases out of one hundred, perhaps, they arise from infective disease of the middle ear.

First of all, if such a suppurating otitis media has produced caries or necrosis, the process naturally extends to the dura mater and a pachymeningitis results. Fortunately in the majority of cases this is a localized inflammation producing either a slight layer of pus between the dura and the bone, or a considerable layer amounting, in fact, to an extradural abscess. The course of such an abscess varies. Sometimes, though rarely, a spontaneous cure results. If so the pus accumulates between the dura and the squamous portion of the temporal bone and the bone being very thin here (for you see it is translucent), it bores its way through the squamous portion and in this manner obtains an exit.

I have here two photographs, from a case in which I assisted Dr. MacCuen Smith in the Jefferson College Hospital, which well illustrate two different stages in the course of such a disease. The first shows the large incision that was made, the ear falling downward and forward to such an extent that it seemed impossible for it ever to regain its normal position, and the extensive removal of the bone. The large incision especially forward was required to obtain access to the aperture in the squamous bone by which the pus had escaped from the cavity of the skull,—an aperture through which the pulsating dura was easily seen. The second shows very well indeed that the ear has been practically, permanently restored to its proper position. The patient recovered without a bad symptom.

2. Instead of limiting its ravages to the hard membranes of the brain, it may produce a leptomeningitis, which will be followed either by diffusion of pus upon the surface of the brain extending even to the cord occasionally, or it may accumulate at one point thus producing a subdural abscess.

3. Instead of limiting itself to the exterior of the brain it may attack the interior and, strange to say, in not a few cases there will be an inch or even more than an inch of apparently perfectly healthy brain between the petrous bone and the abscess.

[1] Stenographically reported for the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Now as to the symptoms of these various lesions. I need scarcely detain you with these because I am not speaking to a body of students hearing this for the first time, but to gentlemen who are familiar with most of the diseases I describe and the means of diagnosis. It is more especially to the matter of treatment that I wish to call your attention, though incidentally I will say a word or two in reference to symptoms. Abscesses external to the brain, extra-dural and subdural abscesses, are very apt to be associated, as are abscesses elsewhere, with elevation of temperature. You will have a temperature of 101, 102 or 103 degrees with the ordinary signs of intracranial inflammation, such as mental dullness, intense headache, and in some instances valuable localizing symptoms; but in contra-distinction to this,—and it is especially to this one point I want to call your attention, for we may make great mistakes in diagnosis,—in intracerebral abscesses, and not uncommonly in cerebellar cases, you will have a temperature either normal or subnormal. There may be a slight initial rise and then a fall to the normal or even below. Therefore, in any case of chronic ear disease in which when the discharge ceases intense headache and mental dullness comes on and a depressed or normal temperature occurs, especially if to these be added any localizing symptoms, you may be almost certain that you will have to deal with an intracerebral abscess. Now, what is the proper treatment for all three of these, because they may be grouped together very well in the matter of treatment? The first thing to do is to open the mastoid antrum, and, if need be, the mastoid cells, to search for the abscess in the cerebrum or cerebellum. Where will you open the mastoid antrum? You will notice that at the upper part, the base of the mastoid, lies the mastoid antrum. Between it and the apex there may be developed a certain number of spaces known as the mastoid cells. The mastoid antrum is the part you want to aim for: 1, because it has a direct connection with the middle ear and therefore will be the first part invaded by the pus; and 2, because from it you can readily reach the cells which will often be filled with pus. This pus is loaded with microörganisms of the most virulent kind even when there is no odor to the discharge; and this point is important in the matter of diagnosis. It is not the discharges which have bad odors that are necessarily fatal; those in which there is almost no odor are often more dangerous than those which are very foul.

In a capital book just issued, entitled, "Pyogenic Infective Diseases of the Brain and Spinal Cord," Dr. Macewen, of Glasgow, has called attention to a little anatomic point in connection with the anatomy of the temporal bone, viz.: The suprameatal triangle. Its boundaries are the root of the zygomatic process above, the posterior border of the meatus in front and a line joining the two behind. The value of the suprameatal triangle is two-fold. Just at the base of the triangle lies the antrum, and therefore, if you perforate at that point you will reach the mastoid antrum. The second point of value of the triangle is that the sigmoid portion of the lateral sinus always lies back of it and is therefore out of danger. Moreover, if, back of the triangle, you draw a line parallel to its posterior border from the posterior inferior angle of the parietal bone to the apex of the mastoid process; this line will correspond to the axis of the sigmoid portion of the lateral sinus, or as it is better called the "sigmoid sinus." These bony points can always be recognized when exposed in an operation. The axis of the lateral sinus proper is a line drawn from the junction of the mastoid parietal and occipital bones to the middle of the meatus. To perforate into the mastoid antrum, I very frequently use the ordinary carpenter's counter-sink. Macewen recommends the rotating burr with the ordinary surgical engine, such as dentists use. He very properly, I think, condemns the use of chisel and mallet, for the reason not only that the blows of the mallet produce a disturbance within the skull that might diffuse the pus and do harm to a diseased brain, but because, in more than one instance the chisel has been driven wider and deeper than was intended and has wounded even the lateral sinus. He refers to four such cases, in three of which death occurred. Either the burr or the gouge, rarely the trephine, still more rarely the chisel should be used. The external incision is from the base to the apex of the mastoid directly down to the bone, the ear is then drawn forward and the antrum perforated in the suprameatal triangle. But you must beware of two points of danger. The first is that already alluded to, viz.: The lateral sinus. When operating in the cavity of the antrum you discover any little mass of granulations it is of the greatest importance before touching it with burr or gouge that you investigate it by means of a probe to see whether or not there is a perforation exposing the sinus,—because not uncommonly there is already a perforation from the mastoid antrum into the groove for the sigmoid sinus, and if you rudely destroy this you may very easily puncture the sinus and place yourself in a very embarrassing position. Then, you must be extremely careful to cleanse the antrum and to stanch the blood, so that you can see the next source of danger, viz.: The canal of Fallopius, in which runs the seventh or facial nerve. This runs just underneath the further part of the floor of the mastoid antrum. You must be careful, therefore, if you espy the little ridge which often marks the line of the canal, to avoid puncturing it lest you injure or destroy the seventh nerve and so paralyze the face. If this ridge is not visible there is another means of avoiding the seventh nerve. Expose the face and have one of your assistants watch its muscles. If your burr or gouge approaches the nerve you will produce a twitching of the face, and that, on a warning from your assistant, should be the signal for you to stop. Having opened the antrum, how will you cleanse it? Merely to wash it out as I have seen it done is most inefficient. And more than this,—when we do inefficient operations we simply expose our patient to greater danger, for this reason, that the microörganisms of the inspissated pus of the antrum are shut up and inert; but they are ready to reënter upon a vigorous and baleful life if you give them blood, blood serum and plenty of oxygen. So long as they are confined they will do little harm; but break down the barrier of granulating tissue which, like a wall of defense shuts them off and you open the door for their infective influences. Hence the rule should be thoroughness or don't touch it at all. Therefore after smoothing off the interior of the antrum and cells, take small bits of gauze or sponge and wipe out the cavity with your antiseptic solutions thoroughly and completely. Thoroughness, and thorough drainage afterward, are essential to success.

Supposing now that you find you have to deal with more than a mere mastoid case; that the brain is involved either from an extradural abscess, a subdural abscess or it may be even an abscess in the brain itself, you will naturally do one of two things: Either enlarge the opening already made and so get access to the deeper abscess, or else make an independent opening. As a general rule the latter is the better course to pursue. In doing so the best point for the trephine opening is that indicated by Barker, viz.: One and a quarter inches behind and one and a quarter inches above the middle of the external meatus, because the vast majority of abscesses of the brain will lie within what Mr. Barker has well called, "the dangerous area," which is a circle having a radius of an inch and a quarter, and for its center the point I have mentioned. The trephine opening should not be a large one—a half-inch is all that is usually needed. In many cerebral operations large openings, one and a half or two inches, or sometimes even larger than that are needed; but in abscess of the brain, a small opening only large enough to give access, is all that is necessary. Whenever the brain substance is lacerated there is always a tendency to the formation of a fungus cerebri—a most dangerous complication. Hence my caution in this respect.

I am quite persuaded that in a case of infective disease of this sort, in a young lad at Jefferson College Hospital, I lately made just this mistake myself; and a very natural one it was I am sure. Fortunately no ultimate evil resulted from it. The boy last 4th of July went in swimming, and in diving got a quantity of cold water in his nostril. This produced an invasion of the frontal sinus. The boy entered a hospital soon after, toward the end of July, and had a little abscess opened over the eyebrow and was soon discharged from the hospital as well. Not long after this, great headache and mental dullness came on but without any rise in his temperature. He entered the Jefferson Hospital and I diagnosticated abscess in the frontal lobe. The diagnosis was facilitated in this case and made very certain by the fact that just over the eyebrow was a soft swelling. The moment an incision was made and the parts raised, I found a small aperture already existing in the skull. The dura was protruding through the little opening which was surrounded by an area of necrosed bone. The bone was not yet loose. Then followed my mistake. I should have been content with that small opening, through which I could perfectly well have reached the abscess; but the tendency is whenever we see dead bone, to get rid of it, and I took my forceps and cut away the bone until I had an aperture about an inch and a half in diameter. Through this I introduced a grooved director and at a depth of two inches I reached the abscess. He was a different boy in twenty-four hours; clear in mind and free from headache. From that time to this he has gone on improving and I hope before long will be entirely well, except that his sight, I fear, will be nearly lost from atrophy of the optic nerves following optic neuritis. But the result of removing so much bone was that it was followed by fungus cerebri. This has gradually healed over but there is still some dead bone to come away. Now, had I let the bone alone I could have reached the abscess and have put my drainage tube in. There would have been no such opening through which a fungus cerebri would have protruded, and the dead bone would have come away just as it is going to come away now.

Make therefore a small opening not over half an inch in diameter. If there is neither an extradural nor a subdural abscess, the abscess will be usually at one of two points, either in the temporo-sphenoidal lobe which occupies the middle fossa of the skull, or in the cerebellum.

How will you reach such abscesses? The first can be reached by puncture in the axis of the temporo-sphenoidal lobe, that is in a line from the opening towards the wing of the opposite nostril. This is far more exact than the direction generally given to puncture in a direction "downward, forward and inward." As a rule I use the director, the groove of which facilitates the escape of the pus and its blunt point avoids any vessels. I do not like the knife; it may wound a large vessel difficult to control especially with a small opening. Suppose you do not find the abscess. Withdraw your probe exactly in the line in which you introduced it, and pass it in another direction. Never sweep it round, for if you do you cut off large numbers of fibers in the substance of the brain. Do as little harm as you can.

Having explored sufficiently and ineffectually, leave that point and go to the cerebellum. It may be very possibly, that you will look on your patient and say: "I wonder if his condition will bear it?" I remember well a case of this kind. The child was in such a condition that I decided not to do a second operation; and what was the result? The child died; and I found an abscess in the cerebellum containing one and a half or two ounces of pus. The child could not have lived, even if I had found the abscess; but surgically it was none the less a mistake. The additional danger of a second slight operation, for it is really a slight operation to expose and puncture the cerebellum, is as nothing compared with the absolute certainty of death if the abscess be not found.

To attack the cerebellum with safety you must avoid the lateral sinus. This runs in a line drawn from the meatus to the external occipital protuberance. The trephine should therefore be applied well below this line and midway between the mastoid and the middle line. A few turns of the trephine will penetrate the bone, or, if the patient is a child, a simple gouge will quickly make an opening. Through this you can not only puncture the cerebellum on the same side but by an oblique puncture can reach the opposite lobe. Having found the abscess it is evacuated and then drained, the after treatment being that with which you are all familiar.

This whole matter of cerebral abscesses is very recent, especially in connection with cerebral localization, which I have not touched on but shall presently in connection with hemorrhage. So late as in 1886 the first case of cerebral abscess was diagnosticated and properly treated. You see therefore, how recent all of this surgery is; eight years covers practically the whole of it.

There may be, however, a fourth result, viz.: Thrombosis of the lateral sinus, especially the sigmoid sinus. This disorder is frequently misinterpreted or overlooked, and patients are allowed to die when they might be saved. What, first, is the reason for this condition? Why, nothing is easier you see than to pass through the thin lamella of bone which separates the petrous bone from the sigmoid sinus.

There is nothing easier than here, inside of the ear, to have necrosis, with infective invasion from this through the veins into the sigmoid sinus. It is common to find pus in the sigmoid groove, not uncommon to find it in the sinus itself in cases of thrombosis. The evil unfortunately is not restricted to the sigmoid sinus. The disease comes in contact not only directly with the current of the blood from the sinus into the jugular vein, but may pass all the way down this vein to the clavicle. More than this, fragments of the thrombus may be carried down or the thrombosis be extended until the lungs become involved. You will have then, first, expectoration, later, in twenty-four or forty-eight hours, discolored by the admixture of pus. When it extends as far as the lungs it is deadly. I know of only one case of such extension in which recovery was achieved; and that one case of recovery, in an infective disease of this kind is an extraordinary thing.

That sinus thrombosis, which formerly was considered so fatal, is not so fatal as it was supposed to be, is proved by the fact that I have gathered from different surgeons thirty-two cases that have been operated upon, of which nineteen recovered and only thirteen died. You will find in Dr. Macewen's book, thrombosis of the longitudinal sinus, of the cavernous sinus and of the sigmoid sinus. He mentions twenty-seven cases in his own practice of which twenty were treated and sixteen recovered. More than this, thrombosis of the sigmoid sinus was formerly thought to be absolutely inaccessible and absolutely fatal. Of the cases of thrombosis of the sigmoid sinus in his practice, there were eighteen cases, of which seventeen came to operation and thirteen recovered.

Now what are the symptoms of thrombosis of the sigmoid sinus and what should be its treatment? First of all you will have a patient with an old otorrhea, from chronic disease of the middle ear. It is very common, especially of late, to think that a chronic disease of the middle ear does not amount to anything. This may be true in a great many cases, but we know now far better than to think it true in all. Such a case may go on for fifteen or twenty years but the day of reckoning may at last come, and when it does come it comes like a whirlwind.

Take a case of old otorrhea. The discharge will stop and your patient will complain of headache. The headache is intense. Along with it will not come that dulling of the intellect as in cases of abscess; but on the contrary the intellect will be clear and you will find that there is post-mastoid tenderness even in the bone, though no tenderness in the mastoid process itself. Follow the line of the sinus from the mastoid back, and the post-mastoid tenderness will almost always be found. Now examine the neck, and if you have a case in which the extension of the clot has been intrajugular, you will feel a hard cord just posterior to the carotid artery or you will find a matting of all the tissues, because not uncommonly there is inflammation around the jugular vein and carotid artery. If there has been any escape of pus externally you will have it in the suprameatal triangle. You will expect also other symptoms. What is this but a pyemia? We know perfectly well that the common cause of a pyemic condition is an infective clot that forms in a vein; and what is this but an infective clot in a large vein, peculiarly situated and unfortunately, to us peculiarly inaccessible.

You will expect, with the symptoms I have indicated, that the temperature will go up. There will be violent fluctuations of temperature; high at night and comparatively low in the morning, but only comparatively. Given, then, these conditions, you will be pretty sure that you have to deal with sinus thrombosis. First of all the mastoid operation. Sometimes you will have just these symptoms without any thrombosis, simply from the mastoid disease, but unfortunately this is rare. When it exists, if you see no reason to go further than the simple mastoid operation, stop there, but watch your patient. Stand over him with knife in hand ready instantly to interfere. A few hours may carry that patient just beyond the safety line into absolute danger and death. Watch carefully, and unless he is better within twenty-four or forty-eight hours do the second operation, viz.: expose the sinus.

I have already told you of the lines that mark the suprameatal triangle. You will carry your incision down here as before. It will have already been made and you will simply have to re-open your old incision. It is sometimes necessary to make the incision posteriorly. Examine most carefully the little mastoid vein that runs in the sinus between the squamous and the occipital bone. Always examine this vein that makes its entrance here into the sinus, because if there is pus in the groove of the sinus very likely you will find it working its way out along the length of the vein and you will see a small portion of a drop of pus at this point. Then from your old incision work backward and upward. You will observe that you have punctured the antrum there. You will then work upward and backward and uncover one inch of the lateral sigmoid sinus. This is easily done. There is not a man in this room who can not do this operation if he will be gentle and careful.

Your gouge and your sharp spoon, or Rozier forceps, will enable you to uncover the sinus entirely. See whether it is hard or soft; see what is its color. This will likely give you all the information you want as to whether or not you have a clot. If you have reason to suspect clot, or if the symptoms, even without clot, are such as to justify it, you must open the sinus. You say to me at once: "That will give a fearful hemorrhage and expose the patient to the greatest danger of death." There is nothing outside the sinus as dangerous as the pus inside. There is nothing outside of it or that you can do outside of it that can possibly be as dangerous as the infection that will be carried from suppurating sinus down to the lungs. Therefore do not hesitate, for you can do it with perfect safety.

Have beside you in that case two or three strips of iodoform gauze and a pair of forceps immediately alongside of them. Make your incision and if blood comes out there is no clot; your finger will be a sufficient plug. If you find no clot you can plug perfectly well and prevent a clot extending further backward at least. Supposing you find a clot then you will have no bleeding, for a clot acts as a cork or plug. What will you do then? Clean it out until you get free hemorrhage. You will find cases reported in which the sinus was cleaned out and in which even a slough of the sinus escaped afterward and the patient got well. If you are going to interfere at all your interference must be thorough.

Having opened the sinus, cleaned it out, and

plugged it, what then? If the jugular vein is involved you must make an incision instantly in the neck and open that vein. Tie it between two ligatures, or tie one ligature only because often one end is entirely plugged by clot. In some cases that I did some years ago this vein was entirely destroyed and I had the greatest difficulty in defining it. It was collapsed entirely and surrounded by an immense amount of inflammatory tissue. Tie the vein, especially go below the clot. Go down below the level of the clavicle and tie below the clot in order to prevent its extension toward the lung; there is the great danger. Having done so, wash it out with an antiseptic solution, plug it with iodoform gauze, and you will get, in a large majority of cases a most satisfactory result.

I had not expected to take up so much time with this; but I always feel that in such matters there is a sort of modern surgical romance, and when one gets to talking upon a subject to which he is much attached it runs away with him.

I will only have a very few minutes, therefore, to say a few words in reference to the important matter of cerebral hemorrhage and at the close I will show you the means of detecting a bullet by Dr. Girdner's telephone probe.

As in matters of abscess there are three positions in which hemorrhage may occur in the cranium. It may occur between the dura and the skull,—extradural hemorrhage, corresponding to extradural abscess; under the dura, between it and the brain,—subdural hemorrhage; in the brain, more frequently in the cerebrum than in the cerebellum, making cerebral hemorrhage.

Extradural hemorrhage is due in the vast majority of cases, one may say almost without exception, to rupture of the middle meningeal artery. Now to show what a fatal disease this is: In a paper published a little while ago by Giesin he states that he collected 147 cases that were not operated on, and 131 or 89 per cent. of these died. Of 110 cases operated on, 36 died, a mortality of 33 per cent. Nothing could speak more strongly than these figures.

The middle meningeal artery comes up, as you know, through the foramen spinosum and soon divides into an anterior and posterior branch. A man falls or receives a blow on the head. He is stunned by it. In the course of a minute or five minutes, it may be half an hour, he comes to himself; there may be only a few seconds of unconsciousness. He comes to himself but unfortunately the artery has been ruptured. What happens then? While he is conscious, a little leakage of blood, which goes on increasing. After a while, or if the rent is a large one, in a short time you will have extravasation of blood with the formation of a clot. The moment that this clot becomes large enough to produce symptoms of compression the man will become unconscious, and this unconsciousness will deepen into coma, and finally into death. This symptom is the one worth all the others. It behooves you therefore, in cases of injury of the head in which there is any suspicion of intracranial hemorrhage, to investigate the witnesses. The patient himself will be unconscious, but investigate the witnesses to see whether he had a stunning, secondly, a recovery of consciousness, and then a recurrence of coma; and if he had, and other symptoms go along with it, your diagnosis is an assured one.

What will be the symptoms? In the first place the patient's pulse will be accelerated. In the next place his temperature will not rise remarkably. It takes time, but it will rise later. Next, the pupil on one side, the side of the clot, will be dilated, and if the clot has gone downward to the base of the brain it may be that preceding the second unconsciousness you will have anesthesia. More than this as it creeps up from this or from the centers along the fissure of Rolando, you will get first the face paralyzed, then the arm, and, if it extends widely enough, the leg.

I remember a case of gunshot wound reported some time since in which this very progressive history occurred. By the time the ambulance reached the patient the ambulance surgeon found that his face was paralyzed, and in a short time the arm. By the time the hospital was reached his leg was paralyzed, and he was unconscious. Now there could be nothing, no cause that would be progressive, and rapidly progressive—there would be no possible pathologic cause for such conditions, excepting hemorrhage.

I remember a case I had two years ago at St. Agnes' Hospital in which the diagnosis hung by a more slender thread. A man going to his stable about 6 o'clock in the morning, lost his footing on the top of a haymow and fell directly to the stable floor, striking on the top of his head and inflicting two slight wounds in the scalp, one in the middle and the other a little way from it. He was picked up unconscious and was absolutely unconscious from the moment he was found, apparently until he reached the Hospital and I saw him at about half past seven o'clock. As I looked at him there, he lay extended on the couch, perfectly motionless, with the ordinary stertorous breathing and hot perspiration that you find in a case of ordinary concussion of the brain. There was absolutely nothing to indicate to me where the damage was, or even what it was. No anesthetic was necessary, and I first made a little incision from each of the wounds to determine if there was a fracture, but found none. What then could account for this man's comatose condition? There was only one thing and that was a large clot, because it was too sudden, too profound, to originate in a little rupture. It must be a source of the greatest compression that would produce such profound coma. Then came the question as to which side it was on. He had no hemiplegia, but absolute paralysis, except the muscles of respiration. I examined the eyes and found that he had on the left side a slightly more dilated and less mobile pupil than on the right. I then thought that in all probability there was a clot on the left side of the man's brain, and I need scarcely tell you the satisfaction I had when I removed a half inch button of bone from that man's temple. The instant the bone came away there was a clot welling up, and I found a clot inside of his head that was one and one-half times the size of my first. I found four rents in the artery, and it is needless to say that in a case of that kind the damage done to the brain by the primary injury was such that it was impossible for him to survive. I quote this case merely as one instructive in diagnosis.

Where will you trephine? Not by the symptoms of injury, but according to the doctrines of cerebral localization. If it is a blow on the posterior part of the occiput by falling backward, and the patient has the right side paralyzed, hemiplegia, or his right arm alone is paralyzed, monoplegia, will you trephine on

the side of the injury? Never. Trephine over the left motor area. Trephine by the doctrines of cerebral localization.

Three or four weeks ago a woman who had been subject to attacks of vertigo, was going up stairs and suddenly cried out for help as she fell over backward; she was taken up unconscious, not completely so but semi-conscious. Dr. Cross, when examining her pupils, found this one little peculiarity, which was a beautiful instance of exact observation: When he took a candle and passed it to the left, the woman followed it with her eyes, but when he passed the candle to the right she paid absolutely no attention to it. He judged, therefore, that the right field was blind. Now, blindness of the right field, from the crossing of the optic fibers, means injury of the left side.

I did no operation, because when I saw the woman, three days after the accident, she was dying and in fact lived only a few minutes after I saw her. The postmortem examination showed that the fibers between the left cuneus and the eye were caught by a blood clot, and, therefore, if I had made my trephine opening as I had intended I would have come directly upon it. To this point I want particularly to call your attention. The evidence at the time was that the woman struck on the right occiput. There was a place where she winced when you touched it, and in her unconsciousness carried her hand to the point, and had we operated by the doctrines of the locality of the injury we should have been far afield and would never have found the clot, for it was on the side opposite to that which received the injury.

Only one word, gentlemen, and I am done. Middle cerebral hemorrhage, which will be commonly a subdural clot, can not be distinguished from meningeal clot, and it is not necessary that it should, for the treatment is precisely the same. Apoplectic clots in the brain must necessarily be let alone; but if the clots be traumatic they may sometimes, as in the case just narrated, be accessible.

I wish to call attention to two points: How to reach the anterior branch and the posterior branch of the middle meningeal artery. The anterior branch finally reaches, as you know, that anterior inferior angle of parietal bone where it is situated in a groove or canal. Take one inch and a quarter behind the external angular process on a level with the eyebrow, and open at that point, and you will almost certainly come on the anterior branch. If you do not find the clot there, are you going to fold your hands and say: "I can not find the clot," and let the patient die. This was done in a good many cases of the 110 of which 36 died. The clot was not found and the patient died. Never let a patient die hereafter from intracranial clot any more than from intracranial abscess. The posterior branch is just below the parietal boss, at the same level as before. There is the parietal boss, a point very easily found, and just below it, on a level with the eyebrow, will be found the posterior branch. Having found the clot, drain it, wash it out, secure the bleeding vessels, and then ordinary care for such a case is all that is necessary.

I am greatly obliged for your patience on which I have trespassed much more than I intended; my excuse must be the importance of the subject.

Blank Applications for membership in the Association at the Journal office.

ORIGINAL ARTICLES.

CAN TYPHOID FEVER BE ABORTED?

Third paper read before the Mahoning County, Ohio, Medical Society, March 12, 1894, with the Records of the Reported Cases Continued to Date of Recovery; also of three other Members of the Family who were attacked after the Reading of this Paper.

BY J. E. WOODBRIDGE, M.D.
YOUNGSTOWN, OHIO.

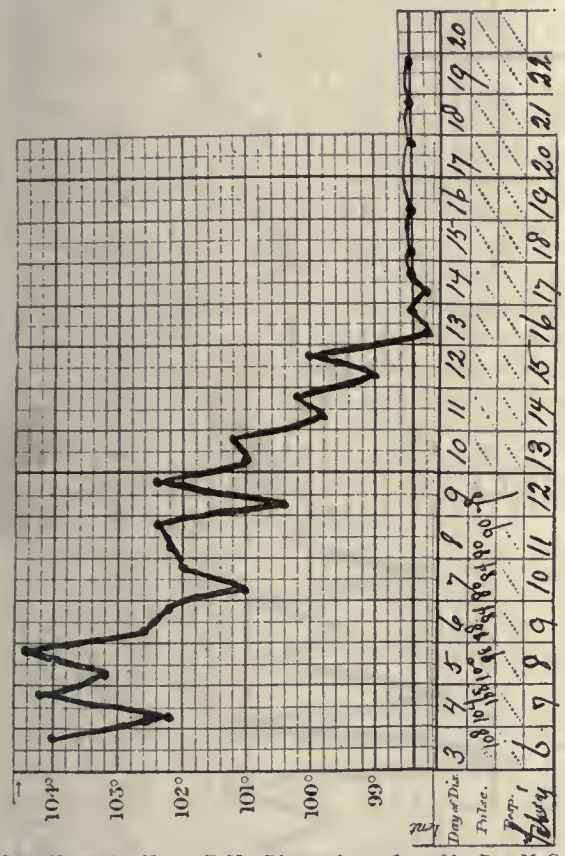
As a preface to my paper, I wish to acknowledge my indebtedness to the President of this Society, to our last ex-President, to the ex-President of the Ohio State Medical Society present, to Dr. Thomas, Dr. Barnes, Dr. Dickson and all others who have confirmed my diagnoses, watched the results of treatment, or in any way have aided me in my work; and to thank them for their very complimentary remarks in the discussion of my previous papers. Having my work characterized as the greatest discovery of the age by one member, my name associated with that of Jenner by another, and another give expression to his pride that a member of this Society had done what I have; would be exceedingly gratifying to me at any time, but especially just now when I am promulgating ideas which must arouse the indignation of every great medical professor in the world, because they, if true, convict him of teaching errors that have not only cost hundreds of thousands of lives, but have discouraged all investigation in this most important field, and must incur the bitter hostility of a large class of physicians who not daring to adopt my treatment, or failing to secure the results I claim, will lay all the blame to my method, rather than upon their application of it. I wish, too, to thank the editor of the Journal of the American Medical Association, for so promptly defending me from the spiteful attacks of the editors of two or three medical journals.

I wish too, to say to the members of this Society that I fully appreciate their courtesy in giving up most of their last meeting to my second paper on the same subject. And when they by a unanimous vote gave me the floor again this evening, I could not help wishing that my work were enough advanced to enable me to make my third paper something more than a mere effort to inaugurate a new era in the diagnosis, prognosis and treatment of typhoid fever, the subject which for more than twenty years has lain nearest my heart, and to which all the best years of my life have been devoted. To the strictly scientific part of my work I need not even call your attention. Most of it has been better done by abler workers, and some of it is in too chaotic a state to be even alluded to amongst scientific men, since we know so little of the cause of typhoid fever that we can not say positively that any one germ invariably produces it. And so little of the real action of the remedies exhibited that we are unable to say whether eucalyptol and guaiacol, or creosote, or calomel, or any one agent is essential, or how or why a cure has invariably followed their exhibition.

The importance of the subject to you, to all American and Canadian physicians, and indeed to practitioners of medicine all over the world, wherever typhoid fever prevails, can not be overestimated, because of its terrible mortality.—(The death rate in Pittsburg in 1892 was 23 per cent.); because of the broken constitutions of the more than 100,000 who recover from the disease in the United States annu-

ally; because the king upon his throne, the statesman wielding the destinies of the greatest nation, the merchant with his princely wealth, and the most brilliant physician, with all their resources, and all their power can not escape it, and because, last but not least, aside from the method of treatment I have given you, there is no known means of aborting the disease or of saving the life of every case.

That I can do this, the charts shown you at the last meeting of this Society (a few of which have been published), and which represent only cases that I have treated since the 25th day of June, 1893, and of the cases I have treated since that time only such as presented absolutely pathognomonic symptoms of typhoid fever, in nearly every one of which the diagnosis was confirmed by from one to five of the ablest diagnosticians in the country, are unquestionably



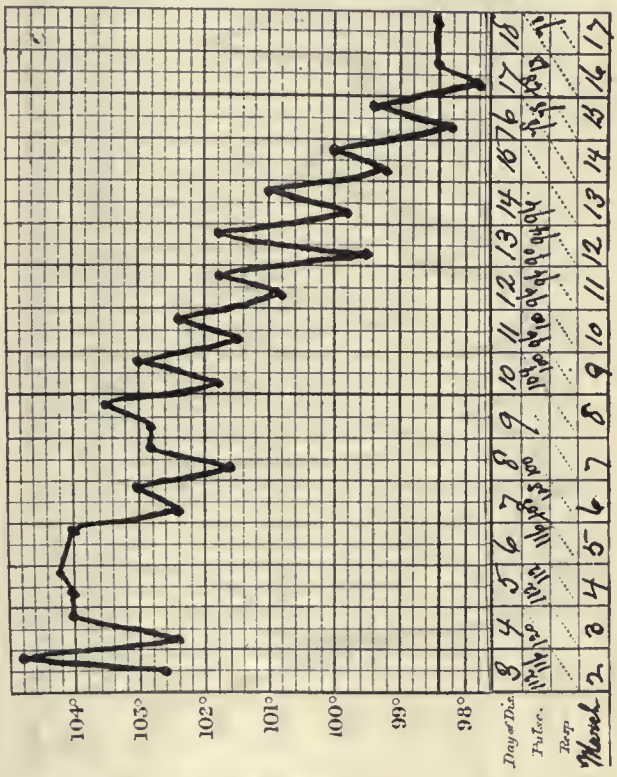
Case No. 55-A. Name, T. M. Diagnosis confirmed by Drs. McCurdy, Dickson and Robert Gibson. This patient not seen again until March 3.

conclusive evidence. At least you must accept them as such, until you can produce an instance where I have had a case which had been sick less than eight days when I was called, and lost by death, or failed to abort, or to so modify the disease as to cause it to run an exceedingly mild course (unless complicated by preëxisting or co-existing disease).

A bold assertion after reading Osler's statement, ("The Principles and Practice of Medicine," 1892, page 33): "The profession was long in learning that typhoid fever is not a disease to be treated by medicines;" also on page 531, he says: "We are still without an agent which can counteract the gradual influence of the poisons which develop in the course of acute febrile diseases, such as typhoid fever, pneumonia and diphtheria."

And yet twelve years before this book was published (in 1880) at an unusually largely attended meeting of this Society, I condemned all of the published methods of treatment of typhoid fever; gave in detail my treatment and foreshadowed in some measure the important results I expected to follow its adoption, by telling the essayist of the evening that if he would abandon his own, and all known methods of treatment, and pursue the course I had indicated he would have better results, but he, while expressing his respect for me as a careful practitioner condemned my theories and the remedies I proposed, as did every other member who joined in the discussion.

In 1882 I addressed the Society on the subject of intestinal hemorrhage in typhoid fever, saying that it would be unknown if the disease were properly treated, and that it would be a safe rule to send to State's prison any physician who ever had such a case, presupposing that he was called in due season, admitting such a law might occasionally do injustice, but claiming that its general effect would be beneficent. Some of you will remember

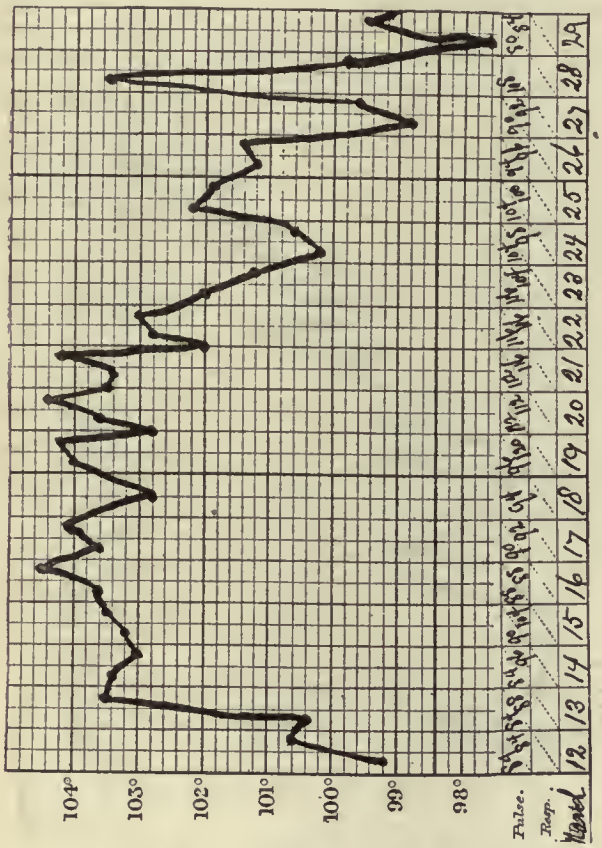


Case No. 55-B. Name, T. M. March 2.

that on Nov. 13, 1884, in the discussion of a paper by Dr. Thomas on the use of the term, "typho-malarial fever," I condemned its misapplication to cases of true typhoid fever with no malarial taint, and took occasion to say at the same time that the term, "malarial fever," was misapplied when used to designate a fever that runs three or four weeks without intermission or distinct remissions, and ends in death from intestinal hemorrhage or exhaustion. That again in 1890 I spoke in condemnation of the use of the coal tar derivatives in the treatment of the disease, saying that I believed that a very large percentage of the deaths from heart-failure were due to their exhibition, and that in 1891 I again spoke to the Society on the subject, saying that I believed typhoid fever could be aborted. Thus the fact that I have regarded typhoid fever as a curable disease has been no secret since 1880; and that when called

before the sixth or eighth day of sickness I invariably give a prognosis of ten or twelve days sickness, or if longer, so mildly sick as to cause no uneasiness—no danger—is also well known; and the medical profession abroad will understand that if I had failed in a single instance to make my prognosis good, both the people and the profession here would have held me responsible years ago.

During all these years I had made every possible effort to prove the correctness of my theories, so that when I appeared before my Society, claiming the ability to do what all of the great teachers have taught and believe is impossible, I might have the means, not alone of proving my assertions, but also of defining the principles governing the proper treatment of the disease. But my claims were too absurd for belief, even by the most credulous, and although the author-

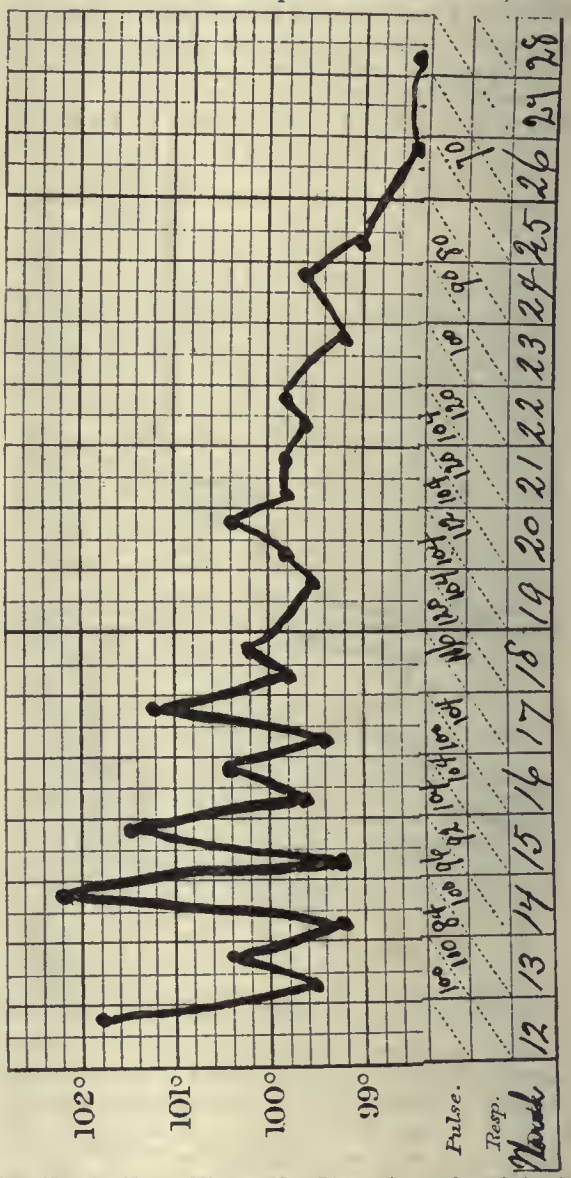


Case No. 60. Diagnosis, Typhoid fever. Name, Mrs. A. McF. Diagnosis confirmed by Drs. McCurdy and Dickson. Complicated with inflammation of both lungs and hemorrhage from the right lung.

ities in some hospitals would permit me to see their patients or make dissections, it was long an utter impossibility for me to secure an opportunity to treat even a few patients in a public way, under the observation of a skilled diagnostician, notwithstanding the fact that my applications were supported by the highest credentials.

I met with so many discouragements that lack of money alone prevented me from opening a hospital for typhoid fever in which to demonstrate to the world how to abort the disease, and a few thousand dollars placed at my disposal in 1880 would long ago have resulted in the saving of many thousands of lives annually, as well as the great amelioration of those other thousands who languish weeks in a burning fever, then suffer the horrible pangs of hunger (I have felt them), and finally as mere shadows of their former selves emerge from their sick-room and creep about more dead than alive, often for months, when they might just as well have sat up and eaten beefsteak or bread and butter after the sixth or seventh day of treatment.

A few years since when Dr. McCurdy was President of the Ohio State Medical Society, and by virtue of his office was the highest representative of the profession of the State, we had several interviews on the subject of publishing my claim that typhoid fever could be aborted, and the method of treatment that seemed best calculated to produce this result, and we



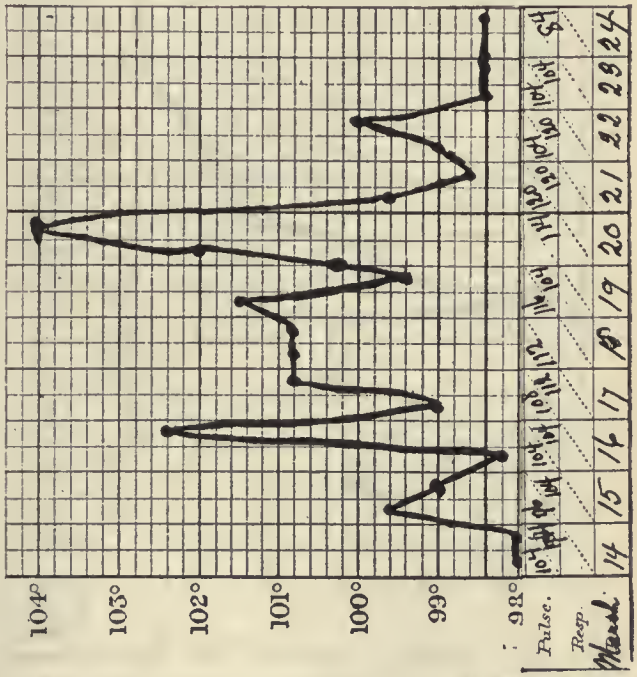
Case No. 62. Name, Miss A. M. Diagnosis confirmed by Drs. McCurdy and Dickson.

both felt that without more conclusive evidence than I could then adduce of my ability to abort the disease that no possible good would result from such publication; and although he has done me the honor to pronounce my method of treating typhoid fever a wonderful discovery, yet he expressed the belief that such premature publication would greatly imperil my professional career. I believe the Doctor still thinks, and I am sure the opinion is correct, that it would have been better to have waited a few years longer, before making any public announcement on the sub-

ject, because my cases are yet too few to carry conviction to the mind of every member of the profession that it is possible to abort typhoid fever, and twelve years of active private practice, without a death, is not long enough to convince every one that death is a wholly unnecessary consequence of the disease. Had I waited until I could have reported the cases of twenty years, without a death from typhoid fever, and a proportionately increased number of aborted cases; waited, too, until I had completed my investigations so far as to enable me to state with exactness the laws upon which the scientific treatment of typhoid fever depend, instead of detailing the treatment which I gave individual cases, and giving formulæ which, while acting admirably, may and probably do, contain ingredients which add little, if any to their efficiency, enough of thinking men in the profession would then have accepted my theories to aid me in convincing the unthinking, and the treatment of typhoid fever would have been revolutionized. Now what will the result be? We must wait and see. How long? Who can tell? The lessons of the past must be unlearned before the lessons of the future can be understood. All of the great teachers of the past and the present have so iterated and reiterated the statement that typhoid fever can not be aborted, that it will take long to unlearn that one lesson, especially while the very best and latest text-books, and all of the leading medical professors of the world are teaching the contrary; and until this lesson has been learned it is useless to expect physicians to succeed with the abortive treatment of typhoid fever, for only to the most careful watching and the most skilful use of the remedies at our disposal will this treatment yield its happiest results. How can he succeed in such a work who firmly believes in the impossibility of success, or how can he be expected to give due energy to a work in which he has no faith?

Another lesson which will be difficult to unlearn and which is taught by the great teachers with as much unanimity as the other, is, not to treat symptoms. Beginning at any given day early in the disease, one should treat a patient with a temperature of 105 or 106 degrees exactly as one would were the temperature 101 or 102 degrees. The physician who says that the important object to be attained is to bring the temperature down, is like the man who would attempt to resuscitate a drowning man without first taking him out of the water, and the end would probably be the same in either instance. It is not the symptom which kills the patient, and one patient with a temperature of 105 degrees may be on the high road to recovery, while another with a temperature of 101 degrees or even lower may be rapidly approaching the grave. Watch the temperature, the pulse and all other symptoms as matters of scientific interest, and as showing the results of treatment given hours or even days before, but not as giving any indication for treatment in the future. This rule applies only in cases which have been properly treated prior to the eighth day of sickness. Last month, I gave in detail the treatment of three typical cases of typhoid fever. Two were treated regardless of symptoms, and one which I did not see until the sixteenth day of his illness, and for that reason, was treated almost entirely by the symptoms. All recovered, but while one was not allowed any solid food for ten days after his temperature was normal, the others ate solid food all of the time. Two were never sponged at all; the other thoroughly. The one was not allowed even to rise to stool; the others sat up and walked about and one of them went out of doors during his illness. The detailed treatment of these individual cases was given because to them I gave nearly, if not quite, every remedy that I regard as essential to the abortive treatment of the disease, in all of its various stages, and because I wished to make more careful observations before attempting to publish a thesis on the treatment of typhoid fever. In future, as my investigations result in improved methods, I shall give the profession further details, and I hope to be able to go much more fully into this part of my subject in a paper which I propose to read at the San Francisco meeting.

Admitting that typhoid fever can be aborted, it becomes a matter of prime importance to decide how to abort every case and save every life. This will be impossible as long as the people buy and use patent medicines, take domestic remedies or for any reason neglect to send for a physician in season, and they will never realize the importance of sending for a

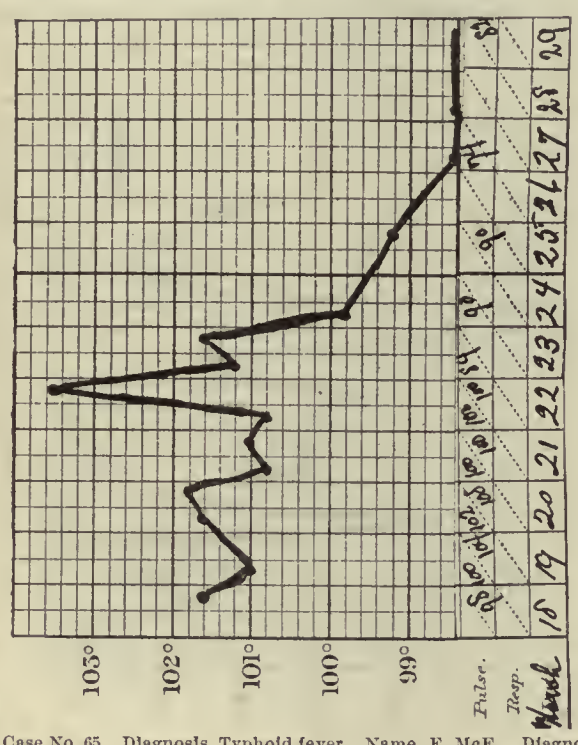


Case No. 63. Diagnosis, Typhoid fever. Name, Miss M. McF. Diagnosis confirmed by Dr. Dickson.

physician in due time so long as he fails to make a diagnosis and institute proper treatment promptly when called.

Typhoid fever is man's most insidious enemy; having a long period of incubation its early diagnosis becomes a matter of the greatest importance, and should invariably be made the first time the patient is seen, with sufficient accuracy to warrant the institution of proper treatment. I readily concede the impossibility of always making a correct or positive diagnosis at the first visit, but every case in which the temperature is ever so slightly elevated and the pulse ever so little accelerated, in which no contra-indications can be discovered should be prescribed for as a case of typhoid fever, thus giving the patient the benefit of every possible doubt, since I know of no disease or condition which under this rule would be unfavorably influenced; on the con-

trary the diseases in which this course would be ideal treatment are too many to be even mentioned in one short paper. In diphtheria, in measles, in variola, in malarial fever, in pneumonia, in influenza and all catarrhal troubles you have given your patient the best possible initial treatment. You will remember that I was assigned the duty of presenting a paper on "La Grippe" at our annual banquet, after its visitation in 1889, and that I then said that I accredited the fact that I had had no deaths from la grippe or any of its sequelæ to the treatment I had invariably pursued. I might have added that although I made no mistake in diagnosis, I regarded *for purposes of treatment*, every case of la grippe as a case of typhoid fever, except that I usually gave the remedies in larger doses. Thus, while la grippe and typhoid fever differ so widely that I do not think any careful physician would be likely to make a mistake in diagnosis, they are best treated in almost identically the same way, at least, in their

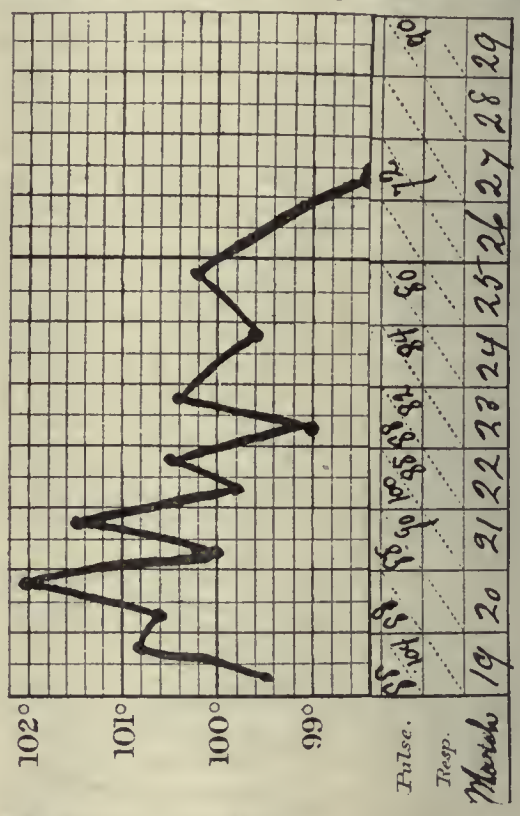


Case No. 65. Diagnosis, Typhoid fever. Name, F. McF. Diagnosis confirmed by Dr. C. C. Booth.

earlier stages, and the same is true of all of the malarial fevers and of the so-called "typho-malarial fever," if there be such a thing.

During my long and intimate association with my uncle, Dr. Timothy Dwight Woodbridge, whose well-stored mind and brilliant intellect enriched by the observations of more than fifty years of active practice, made him not only a pleasant companion but always a wise guide in all matters relating to our profession, he often said that there *was no malarial* fever in *this* locality which would ever cause death, even if left without medical treatment, and yet our Health Officer's report for last year (1893) shows twelve deaths from *malarial* fever and only nine deaths from typhoid fever. If Dr. Woodbridge, Sr., were right, and my experience certainly sustains his opinions, then there are three horns, and three only, to the dilemma of the physicians who made these reports. Every one of these cases was a mistake of diagnosis, a false report, or the medicine and not the disease killed those twelve patients. In this conclusion I am ably sustained by Dr. Eliot, of New Haven, who says:

"When typhoid fever really exists but is not correctly diagnosticated it is, in this vicinity most frequently called malarial fever, and at a later stage, typho-malarial fever. This mistake generally depends upon a mixture of ignorance and carelessness. I do not care to maintain at the present time that typho-malarial fever never occurs. I presume that every one is aware, however, that this term should be limited to cases of disease which are due to the simultaneous action of the typhoid and of the malarial poisons. I am thoroughly convinced that most cases of so-called typho-malarial fever are in reality cases of *typhoid fever*. If a malarial element is present in some of them it is possible to remove it



Case No. 66. Name, Mrs. H. McF.

promptly by appropriate treatment. With regard to cases of so-called malarial fever it should be remembered that most fevers which are caused by malarial poison are of a distinctly intermittent or remittent type. If, therefore, a case of continuous fever occurs which is uninfluenced by adequate doses of the ordinarily used anti-periodics, there is good reason for challenging the diagnostic accuracy of any one who pronounces such a case malarial fever. In most cases of this kind the disease is enteric fever. The vital statistics of our city and State show a number of deaths as due to malarial and typho-malarial fever which is almost equal to the mortality reported from typhoid fever. There is little doubt that the majority of these cases reported represent mistakes in diagnosis, where enteric fever has been overlooked and called by another name."

The above quotation is perfectly applicable to this locality, except that our statistics are worse than

those of New Haven, and would have been even worse than they are had not some diagnoses of malarial fever been corrected to typhoid fever by consulting physicians before death, sometimes even in the third or fourth week, corrections that came too late to benefit the patient. There can be no doubt if these reports could be analyzed and autopsies made, there would be found a large number of deaths due to typhoid fever which have been reported under other names. Osler, than whom there is perhaps no better authority, says, in "Principles and Practice," page 30, that "cases coming on with severe headache, photophobia, delirium, twitching of the muscles and retraction of the head are almost invariably regarded as cerebro-spinal meningitis;" that he has thrice performed autopsies on cases of this kind in which no suspicion of typhoid fever had been present, and adds: "Cerebro-spinal meningitis is, however, a rare disease, typhoid fever a very common one, and the onset with severe nervous symptoms is by no means infrequent. Fully one-half of the cases of so-called brain fever belong to this category."

Some of you may object to my method of making a diagnosis; may say that I reach conclusions from insufficient data. But you are reminded that this is a diagnosis for treatment only, and to be verified or corrected by future observations and at the earliest possible moment, and that it can be justified only on the premise that the physician's most important duty is to cure his patient rather than strive for the unattainable absolute accuracy of diagnosis. I am aware that you can approach very close to an absolutely exact diagnosis in typhoid fever if you await the development of all the characteristic symptoms of the disease, but you will purchase your *exact* diagnosis at far too high a price, and it will come too late to benefit your patient. It is strange, too, what a varied value different members of the profession place upon the symptoms ordinarily supposed to be pathognomonic of typhoid fever. One will pin his faith to rose spots, another to tenderness in the right iliac-fossæ, another attaches much importance to tympanites and dullness over the spleen; while one old physician who actually believes he is something of an authority, says he never saw a case of typhoid fever in which there was not diarrhea with little black specks through it. He is on a par with those who fail to make a correct diagnosis until their wits are awakened by the appearance of rose spots or the supervention of an intestinal hemorrhage. Their diagnoses may be exact, indeed, but so far as any benefit to be derived from treatment is concerned they might almost as well have been made in the dead house. A diagnosis of typhoid fever based on such slight evidence as two symptoms only, and those common to many other pathologic conditions might and probably would occasionally require future correction, but could never result in harm to the patient, because the remedies administered in the doses advised could do no possible harm in any condition which could be mistaken for typhoid fever; and while the best possible treatment for any stage of this disease would be almost equally beneficial in the early stages of any acute fever, and a very large majority of these, including mild cases of typhoid fever, or typhoid fever taken very early, would be cured long before a positive diagnosis would ordinarily be made in typhoid fever, or indeed before the development of pathognomonic symptoms would render such diagnosis possible. If you await the appearance of these, you will rarely succeed in aborting the fever; and unless you are an exceedingly expert diagnostician you will sacrifice a very large percentage of this class of patients.

I hand you the completed chart of Angus McFee, No. 51, which was shown up to date at our last meeting, and in whose case a fatal end was so confidently predicted by a member who had examined him in the afternoon. You will please observe the rapid fall of temperature after each application of large doses of the eucalyptol-guaiacol mixture to the abdomen. He had two or three small hemorrhages of the bowels. (Dr. McCurdy, who saw Mr. McFee with me immediately after I was first called, during the discussion of this paper said that he considered this the worst case of typhoid fever he had ever seen.)

I was called to-day to see his wife, Mrs. Angus McFee, Chart 60, who undoubtedly has typhoid fever. If so hers will be an exceedingly interesting case, since it will be complicated from the beginning, she having had extensive pelvic trouble since the birth of her child. On the night of ——— she was called up and stood on a cold oil cloth, contracting a severe cold to which she accredited her violent headache and backache, cough and the agonizing pains in the region of the right nipple, and for this reason did not send for me until to-day.

Dr. Dickson and Dr. McCurdy confirmed this diagnosis. The abdominal symptoms yielded promptly to treatment, but the trouble of the lungs grew rapidly worse and culminated in a profuse hemorrhage of the right lung. The temperature to-day, March 29, as you will see, is in the morning 97.8 degrees, and this evening 99.6 degrees; cough still troublesome, but otherwise she is quite well, has eaten a little beefsteak yesterday and to-day, and her diet is left unrestricted hereafter.

A brother, sister, and sister-in-law who aided in nursing A. McFee have each had an attack of typhoid fever since Mrs. McFee was taken sick, and all are well. See Charts No. 63, No. 65 and No. 66.

One of the charts published in my last paper as complete is reproduced.

T. Murdock (Chart No. 55), whose temperature and pulse were normal, who sat up and ate beefsteak on the tenth day, who took no medicine after the thirteenth day of treatment, and whose temperature and pulse were still normal to the eighteenth day, after which he was not seen until March 3, which was the twenty-seventh day. He was therefore, with the exception that he did not regain his strength, apparently entirely well for fifteen days; ate such food as he wished, walked out of doors and up stairs every night to bed until March 3, when I was recalled and found morning temperature 102.6 degrees; afternoon temperature 104.8 degrees, with pulse 112 to 116; although there were no rose spots, much abdominal tenderness, nor tympanites, it was unquestionably a relapse of true typhoid fever, from which he recovered more slowly than from the first attack; his temperature first touching normal on the fourteenth day of treatment. Of cases that I have seen early in the disease this is the first relapse I have ever had.

His sister, Miss A. M., No. 62, residing in the same house, consulted me March 12, 1894. She presented fairly well-marked symptoms of typhoid fever, except that the tenderness and pain in the right iliac fossæ seemed to justify a graver disease. She had been

attended during last summer for what her physician diagnosed as inflammation of the bowels. The development of well-marked swelling in the painful and tender right iliac fossæ prompted me to call in consultation two eminent abdominal surgeons, Dr. McCurdy and Dr. Dickson, who both expressed the opinion that she had typhoid fever complicated with grave pelvic trouble. She recovered in fourteen days. (See clinical chart.)

If in these preliminary papers I have convinced you that it is possible to cure typhoid fever; that in the future a death from the disease will be *prima facie* evidence of culpable ignorance or criminal carelessness, either on the part of the patient, his friends or his medical attendant; that the long weeks of burning fever followed by a shattered constitution and sometimes clouded intellect, need no longer be feared; if I have impressed upon your minds the importance of making an early diagnosis and promptly acting upon it; have shown you the danger of mistaking typhoid for malarial fever or any of the milder diseases, and have clearly indicated that the scientific treatment of typhoid fever in its earliest stages is also the best possible initial treatment for any disease for which it is likely to be mistaken, then your time and mine, and the space these pages will occupy in the Journal, could hardly have been put to better use.

AN INTERESTING CASE [MORPHIA HABIT].

Read before the Shelby County Medical Society at Shelbyville, Ind., March 12, 1894.

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An irritable stomach from stenosis of the esophagus is treated long time for cancer of the stomach, when the morphia habit is formed. Exploratory laparotomy leads to a correct diagnosis. Cure by bougies and irrigation of the stomach. The morphia habit is cured by the resuscitation of the moral powers. Discussion of the essentials underlying the cure from vice of habit of any kind. Subsequent development of cancer in the right ovary. Cure by cœlio-salpingo-oöphorectomia duplex.

Mrs. M. L., American, aged 42 years, is married and the mother of four children. I was called to see her in consultation with her family physician, Dr. R. F. Bigger, in April of 1892. Then she had been an invalid of four years, being confined to bed continuously of late. The disease began with an irritable stomach and indigestion. She frequently vomited after eating, and retching at times was quite persistent. At times, food after swallowing seemed not to go down well. She suffered sharp deep-seated pains in the epigastric region, seemingly irrespective of meals taken. She soon lost appetite, and became emaciated. She was much troubled with sour eructations, and felt sore in her stomach at all times. Different medicines given for these conditions, and careful dieting were of no avail. In the start the diagnosis of indigestion was made; later on the persistence of the trouble and its increasing severity, together with the emaciation and a discolored skin, led to the diagnosis of cancer of the stomach situated near the cardiac orifice.

Three eminent physicians, singly, in turn, had seen the case in consultation with Dr. Bigger, and all concurred in his diagnosis. One of these, a famous abdominal surgeon, gave it as his opinion that the walls of the stomach were infiltrated to an extent making any operative venture without prospective good, though he offered to make an exploratory incision in consideration of a doubt that always pertains to intra-abdominal diagnosis. The ordinary remedies for cancer and indigestion were given; and for the relief of pain various drugs were tried in turn until morphia was settled upon. This drug, at the time I saw her, was being given in 5 grain doses hypodermically every morning and evening.

I found the patient feeble and emaciated, having a dry and shriveled skin of a pale, somewhat sallow color. The color of the skin, to me, rather than cancer, suggested tuberculosis. The tongue was swelled and flabby, coated and foul; it was distinctly malarial in character, though seemingly showing more, besides. The temperature ranged between 98 and 100 degrees F., without any regularity in its rise and fall. The pulse was weak, 80 to 100 beats per minute. Latterly, she had at times showed symptoms of hydremia, expressed in edema of the extremities and face. The heart and lungs showed nothing abnormal. The abdomen was considerably distended, tympanitic, tender to light touch, sore and even painful to pressure in the epigastric region. There was increased hepatic and splenic dullness and tenderness. The subcutaneous glands nowhere were found enlarged. With the patient on her back, there seemed to exist a low area of dullness, like that from ascites, but this could not be verified in any other position of the body. The menstrual function was reported to have been normal until the present trouble had existed one year; then the flow became sparse and painful. The examination of the pelvic organs revealed nothing abnormal, excepting local tenderness. This and the dysmenorrhea and sparse flow were ascribed to the frequent vomiting and retching, and to the great general debility. The patient complained of great pain in her stomach and, though less in degree, throughout her abdomen. I was informed that her bowels were constipated and sluggish to act; that she could eat little and retain hardly anything; and, whereas her normal weight was from 140 to 150 pounds, that now she weighed about 90 pounds.

I inflated the stomach with carbonic acid gas water for purpose of diagnosis, but failed to distend this organ very much. I attributed, at the time, this failure to her slow drinking of the aerated water, and the immediate eructations following its ingestion. I found no evidence of tumor, nor of thickening of the wall of the stomach anywhere. An examination of the dorsal region showed nothing unusual; no area of dullness which might exist were cancerous tumefaction present about the esophagus.

I made no definite diagnosis. I felt I should have to accept the opinion that there was no cancer; at most this could only be of very recent development, and then it was not yet clinically manifest. I suggested the possibility of a peritoneal tuberculosis developing in the region of the cardiac end of the stomach; say from post-mediastinal glands or diaphragm. This seemed the most tenable supposition by the clinical history. The personal history of the patient contained nothing suggestive of the pathology further than her dark skin and that tuberculosis had occurred in the family. Undoubtedly the morphia habit was much to blame for her present trouble. I reasoned that possibly the disease for which the morphia was originally given, might have been long passed, and that the drug habit, contracted meanwhile, perpetuated the suffering. Stricture of the esophagus was thought of, but easily dismissed from mind. There was nothing given in the history of the life of the patient to inculpate this organ and besides, the trouble seemed beyond the esophagus, inasmuch as she could swallow food well enough, only that she had trouble in keeping it down. I advised to fathom the theory of cancer by an exploratory incision, and if no cancer were found, nor anything else that afforded therapeutic indications, to first withdraw the morphia, and subsequently to act on the clinical indications present. Even by this procedure there was little hope held out to either the patient or doctor, owing to the great decrepitude of the patient. Yet, seemingly, this plan included all hope left after four years of invalidism, confirmed by the vice of a most indomitable habit. The patient, however, was willing to submit to any procedure promising a change for better or worse. She was brought to my sanitarium on May 24, 1892. Previously, for a period of about six weeks, at my direction she was put on a liquid and semi-solid diet of the most digestible nature. This was given in small quantities at a time. During periods of great irritability of the stomach, food was withheld, often for half a day and longer. Copious injections of hot salt water (6 per cent.) into the rectum, and peptonized milk, and milk-and-whisky enemata were regularly given every four to six hours. This plan of feeding was adhered to throughout her stay at my house. Quinin was given for the cure of malaria and in small doses together with strychnia as a tonic.

The patient was operated on May 26, two days after her arrival, in the presence of Drs. R. F. and R. G. Bigger, Wm. Karstetter and E. C. Reyer, the latter giving the anesthetic, chloroform. Incision in the median line above the umbilicus. A careful search of the entire abdominal cavity was made, organ after organ being sought out and examined systematically, without detecting anything particularly

amiss. The liver was somewhat enlarged; the gall bladder was free of stones or enlargement; the spleen was moderately enlarged; nothing abnormal about the stomach *except its small size*, like the stomach of a child of 6 or 8 years, however, without any more than a slight thickening of its walls; no tumefaction, nor evidence of inflammatory disease or adhesions anywhere; nothing abnormal about the kidneys, intestines, appendix, omentum, peritoneum; no enlarged mesenteric glands. The incision was enlarged downward slightly at this juncture to examine the pelvis, and this exploration too was of negative result.

The size of the stomach, however, proved sufficiently suggestive. In considering what conditions might have given rise to this state the question of esophageal stenosis again came up, and the introduction of bougies into the esophagus a few days afterward, revealed a stricture of wide caliber near its cardiac end. The bougie at the stricture imparted the sense of being held by a pouch, and this obstacle, a few days later, when the bougie had caught in it, was forced to yield. Very likely a small cicatricial band across the lumen of the esophagus had existed and now was broken through. The recovery from the laparotomy was uneventful. The stomach was daily irrigated with a mild solution of hot soda water, which for a long time in the return flow yielded great quantities of mucus and a tenacious and shreddy matter, indicative of a chronic, deep-seated catarrhal inflammation of the stomach. Gradually, though not evenly, the stomach function and the appetite improved.

When the patient was domiciled with me, I desired to begin at once limiting the quantity of morphia taken. Heretofore it was given by injection every morning and evening, 5 to 6 grains at a dose. I proposed to divide this dose, giving it only as needed and in the smallest quantity effective. I am convinced that all cures of the morphia habit are temporary, deceptive or farcical, except where they are based on the regeneration and development of the moral force in man; this, quite irrespective of drugs or all other adjuvants employed. The moral feature is the essential etiologic condition in producing a vice of habit of any sort, be it addiction to morphia, alcohol, cocain, tobacco or what not; and the therapy must be selected and employed with regard to this. It is true this is in absolute contradiction and condemnation of the gold cure, and kindred procedures. Unfortunately, we can not satisfactorily investigate, for the purpose of negation, the real virtue of these methods. Thus we can not compute with sufficient accuracy their percentage of relapses in advertised cures, and we know nothing of the number of their absolute failures. The men interested in these methods stand, necessarily, in a position hostile to the exposure of their failures. Certain is it, that some cures are deceptions from the start; that many of the others are of short duration; and that the number cured permanently is small. The permanent cures, it may be argued, may fitly be ascribed to the revival of the moral powers residual in the respective individuals, almost regardless of other therapeutic means and measures employed.

We must accept the Biblical doctrine that man is built in the image of God; and hence, that his capability of development is infinite. The meaning of the passage in the Lord's prayer, pertaining to the evil of temptation, certainly is ofttimes too narrowly construed, when it is made to read that man is absolutely unable to meet temptation, and to withstand it. This construction is in antagonism to the doctrine that man is built in the image of God, and in its pedagogic application it is of disastrous effect on the moral development of man. Man shall not seek out temptation anywhere. But equally shall he not evade it when it meets him in the regular path of his daily presence and mission among men. Of the two extremes, it is much better that we purposely seek temptation, to merit by qualification the divine heritage, than that we hide away in abject fear, and suffer degradation, degeneration and demerit.

For the purpose of illustration imagine the individual from infancy reared in the ever-present consciousness of this godly attribute by which he may meet temptation and withstand it! Add to this the legacy by hereditary transmission of the moral wealth accumulated through hundreds of generations reared and strengthened by such doctrine and its strife! Or, on the other side, by the same activity and duration of forces, compute the moral loss to mankind in consequence of the pedagogical mistake mentioned!

Prohibition and refuge from temptation beside their direct degenerating effect, ultimately develop deception and hypocrisy. We must admit, as being logical, that we can not trust to extrinsic conditions for the support of a moral failing in man. The ordinary environment of man is ever changing, inconstant and, hence, fickle and unreliable.

Prohibition and refuge from temptation do service, but only while they are present; they impart no lasting property, no power. Thus the ordinary asylum for the morphia habitué is inseparably connected for the inmate with conditions which withhold from him his coveted drug; here are no ways, nor friends by which morphia can be procured; and everything is arranged to abolish temptation. Exchange this environment for the ordinary conveniences and attractions offered as soon as the patient is returned to society and freedom, and, because the provisions and restrictions of the institute are wanting, early the consciousness of this want is felt. It soon befalls the victim of habit like a frightful darkness, from which rescue seems possible only over paths heretofore wandered and recognized even by the blinded senses. An improvement, a cure is possible only by the constancy of an adequate support. This support is constantly present only where it rests within the individual. Where, however, the degeneration of moral power and where the neglect of its function has not annihilated this faculty, we have truthful cause to hope for its redemption and resuscitation. This moral basis of a cure is true, and it gives the best possible and only assurance of its duration. I am led to this discourse by reason of the credence commonly given to the virtue of drugs; to the retirement of the patient for the purpose of effectually withdrawing the coveted drug; to the seductive effect of large numbers seeking the same end; to the swaying properties of public mentioning for like purpose, and to other measures. This credence is bestowed, owing to an erroneous conception of the relation of things. Never, nowhere, does a drug replace a moral want or deficiency in man. Such methods are subterfuges, deceptions and snares. They lack truth and they lack the desired effect. They must be relegated to the division of mere auxiliaries, if they be not entirely banished from therapeutic consideration.

My patient was informed of the negative result of the exploratory incision. She was told that her case included nothing requiring the continued use of the morphia; that the morphia was a positive harm without any redeeming feature in it for her; that all her varied interests as an individual, as a mother, as a a wife, and as a member of society demanded the disuse of the drug. That she must quit it for her salva-

tion; that she could do this; that she must and could do so alone by her own effort, and that her effort alone would suffice; that she had best begin at once. She was to be her own judge of what she needed; she was to have what quantity and whenever she asked for it. My nurses were instructed accordingly; they were bid to give the patient morphia whenever this was called for by her, as freely as when she called for food or drink, aye, even more, without any restriction, The patient was impressed with the sincerity of my conviction that her habit was an unfortunate fault acquired; that during the time of her cure from this habit she could not do entirely without morphia; that as her condition would vary, so would she require more and less; and that I relied entirely on her to guide me in giving the drug. Obviously this step was preceded by her fullest conviction of the disastrous consequences of her habit: That the morphia to her was really a curse and a detriment.

I here append an extract from the clinical record giving the daily dosage of the morphia taken during all the time to its complete abandonment on the twenty-ninth day.

First day, 24 hours	3 grains.
Second day, till time of operation	1¼ "
Third day	6½ "
Fourth day	3 "
Fifth day	3½ "
Sixth day	1½ "
Seventh day	1¼ "
Eighth day	¾ "
Ninth day	⅔ "
Tenth day	⅞ "
Eleventh day	⅜ "
Twelfth day	⅛ "
Thirteenth day	¼ "
Fourteenth day	½ "
Fifteenth day	¼ "
Sixteenth, seventeenth and eighteenth days, each	½ "
Nineteenth day	¼ "
Twentieth and twenty-first days, each	½ "
Twenty-second day	7-12 "
Twenty-third day	0
Twenty-fourth day	¼ "
Twenty-fifth day	½ "
Twenty-sixth day	¼ "
Twenty-seventh and twenty-eighth days	0
Twenty-ninth day, last dose	¼ "

The single doses varied between one-eighth grain and one grain; the former dose being given once only; one-quarter grain was the ordinary quantity asked for, excepting during the first five days, when one grain doses were administered quite often. The morphia was given all by hypodermic injection. The entire quantity given during the twenty-nine days was twenty-eight and one-half grains. No attempt to deceive the patient as to the quantity given was ever made. The last one-quarter grain dose was given toward morning, after almost three days' abstinence. The patient was restless and sleepless, and tired out, when she rang the bell for the nurse and asked for one-quarter grain of morphia. It was given without a plea or remonstrance on the part of the nurse. But it had hardly been injected, before the patient grew angry with the nurse, rebuking her for giving it, and saying she had no need of it. She made a wild effort to withdraw it from her arm with the clutched hand of the other arm. This was the last time she took morphia by her own wishes. Very nearly two years have passed since then, and to her they were years of much suffering and distress from various causes. During this time she underwent another laparotomy, eight months after the former, to which I shall refer again in the regular narration of this case. During the first twenty-four hours following this operation, I ordered the injection of two one-quarter grain injections of morphia, and another on the second day. These were taken by the patient with a sense of revulsion. I distinctly recall her pleading look when first the drug was proposed. It was as though asking anxiously and imploringly: "Can't I do without it? Don't you fear to give it to me again?" My decision was firm and well founded; it did no harm, as the consequence proved. I have this patient where I can observe her, and I am convinced that she is cured permanently. After three months the patient could not be recognized as the same woman. She had become rejuvenated, and gained in flesh, vying with her grown daughter in plumpness and vivacity. Subsequently the patient recalled once having eaten, two years before the beginning of her stomach trouble, a hot morsel of meat, which became lodged in the lower end of the esophagus, and which for the want of any fluid at hand she could displace neither upward nor downward for some minutes. She suffered pain in this region for a week or so afterward. She had never thought of connecting this event with her ailment, nor even thought of it at all again until now. Undoubtedly this was the cause of her esophageal stricture. Since her cure the patient has had repeated attacks of neuralgia, and of articular rheumatism, which each time revived the irritability of her stomach. At such times she resumed the daily irrigation of her stomach, which she had learned to do herself, and at no time again did these symptoms give rise to much trouble.

About this time her menstrual periods grew successively more painful, and they were accompanied and followed by great tenderness throughout the lower abdomen. The flow returned every three weeks, continued longer than normal and was clotted and dark. She had whites between the periods. She suffered at all times from sharp pains radiating from the right inguinal region and great weakness in the loins and limbs. Hor bowels again were costive and required urging by medicine or rectal injection. Her stomach, too, became irritable, and her appetite failed her. An examination on Dec. 14, 1892, revealed the womb normal in size, congested, twisted on itself from a point in front to the right; its fundus was drawn to the right and descended and somewhat fixed there. The right ovary was found prolapsed, adherent, enlarged and painful. The left ovary was slightly enlarged and tender, and its tube thickened and pulsating. A small nodule was left on the posterior surface of the womb, near the left horn. Hot douches, ichthyol tampons, bromids, rest in bed and other remedies were tried in vain. The pains steadily grew worse, and their darting character became more pronounced; the swelling of the right ovary reduced none under treatment, if anything seemed larger, while the clinical symptoms seemed to indicate the existence of cancer. Naturally I felt chary of pronouncing it such, owing to the precedent in this case. However, I concluded to operate.

Operation at my sanitarium Jan. 20, 1893. Present Drs. R. F. Bigger, F. Harrison and R. Hessler, the latter giving chloroform. The operation consisted of a double salpingo-oöphorectomy and a myomectomy by laparotomy. I found a non-adherent left ovary, showing small cystic degeneration, its tube tortuous, thickened and highly vascular, and studded with white, glossy tumors like little pearls. The right ovary was enlarged by small cystic developments; on its free surface was a tumor the size of a large hazelnut, and of gelatinous contents; its walls were highly vascular, with a yellowish tint in some parts. The ovary and tube were studded with little excrescences as on the left side. The nodule on the posterior surface of the uterus was excised by an incision right through to its base and

each half turned out separately; the opening was sutured with a catgut suture. The microscopic examination by Dr. R. Hessler, professor of microscopical pathology in the Indiana Medical College, verified the diagnosis of cancer of the right ovary, and of fibroma of the uterus. The recovery was uneventful but for the formation of a hematocle in the left lateral ligament, probably produced by the retraction within the broad ligament of a cut vessel within the stump. This gave rise to a painful swelling in the right side, from which she fully and speedily recovered.

Since that time the patient has had no special trouble, further than occasional attacks of malaria. The examination of the pelvis within a week of this writing discovered a painlessly movable uterus and no thickening or tenderness in either broad ligament.

This case is interesting primarily because of the difficulties attending diagnosis. When once, the first time, the fatal diagnosis of cancer was made it naturally entailed the free administration of morphia. The history of this case warns us to be more careful in obscure cases to eliminate all sources of error. The case demonstrates the value and judiciousness of an exploratory incision in every case of doubtful grave abdominal disease. The comparative innocuousness of the measure, where it is carried out by skilled hands, in a properly appointed surrounding, marks the point of its legitimacy. The method of overcoming the morphia habit as pursued here commends itself by the result obtained. The principle of this method has a wide application in human effort, and should have more attention than heretofore given to it. The subsequent development of cancer in this case is an interesting clinical casualty.

The impression from the foregoing might be that the writer has not duly emphasized the importance of a sanitarium provision for the cure from such vice; or even that he stands in an attitude hostile to an institution purposely and solely conducted for the cure of this affection. Obviously, the sanitarium can readily be appointed to include all the requisites that are necessary and to banish all untoward influences that are objectionable in attempting this cure. Such appointments can hardly be attained with the patient in his or her own home. During the recovery from such vice, the patient is beset with tribulations and suffering which need and should be met effectively at once, and this can only be given by competent and authoritative presence, i. e., the doctor or nurse. It hardly needs repetition that this domicile in a sanitarium must exclude the elements or appearances of refuge and prohibition. The patient of this disease should enter upon such a course in exactly the same spirit as when undertaking the cure of a purely medical disease.

NEURASTHENIA.

Read before the St. Louis Medical Society, Jan. 20, 1894.

BY I. N. LOVE, M.D.

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Since Beard's time, the well-posted physician, whether in the general field or a special line, has recognized neurasthenia "as a legitimate and well circumscribed morbid entity." Our own Dr. C. H. Hughes, of St. Louis, recognized the world over as a high authority upon neurological subjects, in a paper read before the Missouri State Medical Association fully twelve years ago, suggested as a name for the disease, general functional neurotrophia as preferable to neurasthenia. He expressed the thought at the time that the disease was a more or less general failure of the normal nutrition appropriating power in the higher nerve centers, especially the psychical, leading to consequences short of appreciable structural change—a pure neurotrophia—which is only functional in its effects and confined, in expression, to an altered and lowered functionation in the nervous system itself.

A synonym for the disease is nervous prostration, and the name which Beard himself gave to it was nervous exhaustion, but all the names are objectionable, for they suggest symptoms rather than a definite pathological condition.

The cause of this disease, like all others, may be hereditary or acquired. The medical man who is brought in close relations to the family as family physician should be fully impressed with the thought that his advice will be of value in the securing of nerve capital and a good general equipment for at least the rising generation of the family. Truly many individuals are put into the world and have crowded upon them the battles of life when they are so poorly equipped with nerve force as to be almost considered nervous bankrupts.

The child which has a tubercular inheritance can be built up and away from it; so, too, if heredity is against it from the standpoint of the nervous system, the child may be fed up and out of it.

In these modern days of specialism, while admitting that the expansion of knowledge in every department of life has largely put an end to that ideal of "knowing something about everything, and everything about something," yet the members of the medical profession should guard themselves strenuously against the danger of automatic specialism. As was recently remarked by the *Medical Record:* "The glory of modern specialism is that it has unravelled difficult questions in the etiology of disease, and its crowning work must lie in its ability to meet the demands which this new pathological inquiry makes with adequate therapeutic measures. To do this requires mental expansion in every direction, and not alone in any one."

As was well said by Dr. Hughes in his recent essay before this Society upon this subject: "Physicians may become specialists in practice, but they should never cease to be generalists as students."

The family physician, other things being equal, is well equipped for coping with the disease under consideration within certain limits, on account of his personal knowledge into the habits, manner of life and general physical make-up of the patient as well as his temperament. Hutchinson defines temperament as the sum of physical peculiarities of the man exclusive of his tendency to disease, and it has tersely been expressed as being the "peculiar way in which the individual reacts to the stimuli of his environment." Temperament has been too much neglected in these latter days. There was a time in professional and institutional circles when much more stress was laid upon this subject and an ability to recognize and know temperament used to be considered part of a sound medical training. There are many things in man which the test tube and the microscope can not discover, and in our work as bacteriologic delvers and in our desire to be

superlatively scientific, we should not lose sight of this fact.

While by no means maintaining that leisure and wealth are the only conditions favorable to neurasthenia, so-called, I still urge with Beard that it is seldom found among those who live below the upper crust of the social world; that its habitat is rather in Fifth Avenue than the Five Points. The manual laborers of the world, however little they may know, generally know enough to rest when they are tired, and they have the advantage of fewer superheated and poorly ventilated homes, besides their muscular development holds down their emotional centers to a safe level. Neither are they as a rule disturbed by the trinity of A's which confront a large proportion of those in the higher walks of life, viz: Ambition, Avarice and Anxiety, and the trio of L's which environ the rest, viz: Laziness, Luxury and Lust.

The writer desires to be placed upon record in favor of the position that in spite of the fact that cases of neurasthenia are overlooked by the family physician, yet the number that are labelled nervous exhaustion, by neurologists, which do not properly come under that head, is very greatly in excess; in other words, to a certain degree it has become the fad on the part of the American public to elect to be placed under the head of neurasthenics, and neurasthenia is the chief hobby ridden by the nerve specialist of to-day. I take the position that 90 per cent. of the so-called cases of nervous exhaustion are spurious. That they are the victims of nervous weariness may be admitted, but weariness and exhaustion are two different things. Physical weariness may occur in three ways: The muscles may be affected, the nerves may become fatigued, the brain may become weary; all or any of the three may become tired out, and this tiring out may occur time and again without exhaustion resulting; and the classical symptoms as given by Beard and corroborated by so many other observers the world over which apply to nerve exhaustion, may appear in a modified form in the victim of nerve weariness, and suggest to the alarmist or he who is given to forming extreme conclusions that the case before him is one of exhaustion.

Michael Foster, the great physiologist, in a recent address delivered before the members of the University of Cambridge, apropos to this subject of weariness, says:

"Observations and reasonings, into the details of which I can not enter now, have led physiologists to the conclusion that a muscle not only in the body but also for a measurable time out of the body, is continually undergoing change of substance; that the complex groupings of atoms, molecules and particles by virtue of which it is alive are continually being made and as continually being unmade; the living complex muscle is always being built up out of, and always breaking down again into simpler substances. Did we possess some optic aid which should overcome the grossness of our vision, so that we might watch the dance of atoms in this double process of making and unmaking in the living body, we should see the commonplace lifeless things which are brought by the blood, and which we call food, caught up into and made part of the molecular whorls of the living muscle, linked together for a while in the intricate figures of the dance of life, giving and taking energy as they dance, and then we should see how, loosing hands, they slip back into the blood as dead, inert, used-up matter. In every tiny block of muscle there is a part which is really alive, there are parts which are becoming alive, there are parts which have been alive, but are now dying or dead; there is an upward rush from the lifeless to the living, a downward rush from the living to the dead. This is always going on, whether the muscle be quiet and at rest or be moving; some of the capital of living material is always being spent, changed into dead waste, some of the new food is always being raised into living capital. But when the muscle is called upon to do work, when it is put into movement, the expenditure is quickened, there is a run upon the living capital, the greater, the more urgent the call for action. Moreover, under ordinary circumstances, the capital is during the action spent so quickly that it can not be renewed at the same rate; the movement leaves the muscle with an impoverished capital of potential stuff, and a period of rest is indeed in order so that the dance of atoms of which I just now spoke may make good the loss of capital and restore the muscle to its former power.

"In considering muscular weariness, we at the same time must keep in mind weariness of the nerve centers, for after all the weariness of the whole body from muscular work is to a very great degree in fact chiefly a weariness, speaking broadly, of the brain.

"When we have excessive muscular exertion, the weariness may take a form of distress and if the effort be continued the distress may become so great as to occasion such complete exhaustion that even death may result. In excessive work of whatever kind it may be, in order for the work to be accomplished, there is made a greater demand upon the blood for oxygen. Difficult breathing or panting results from the changing quality of the blood. There are many things besides carbonic acid which are swept into the blood as the result of the activities of the body; in other words, the product of work in the human body is a poison which must needs be eliminated through the medium of the lungs and the other excretory organs."

Foster again well expresses it, "as the breath of man is poison to his fellow-man, so the outcome of the life of each part of the body, each tissue, be it muscle, brain or what not, is a poison to that part and its fellows, and may be a poison to yet other parts. Of each member, while it may be said that the blood is the life thereof, it may with equal truth be said that the blood is the death thereof; the blood is the channel for food but it is also a pathway for poison."

It would seem superfluous to draw attention to these well-known physiologic facts, but I do so only to emphasize the point which I make, and that is that by neglect upon the part of the individual of certain necessary laws involving rest, opportunities for oxygenation, proper attention to elimination through the various draining channels of the body, excessive work whether bodily or mental in repeated cases produces such a degree of weariness and poisoning of the nerve centers as to mislead us in the direction of interpreting the symptoms present as those of neurasthenia.

The same author in his admirable paper referred to says: "The loss of living capital, or the presence of the products of work which would have no ap-

preciable effect on a muscle, may wholly annul the work of a piece of nervous machinery. If an adequate stream of pure blood, of blood made pure by the efficient coöperation of organs of low degree, be necessary for the life of the muscle, in order that the working capital may be rapidly renewed and the harmful products rapidly washed away, equally true, perhaps even more true, is that of the brain. As physical and mental efforts are continued, the eliminating capacity unless carefully guarded is marred, the resulting poisons are more and more heaped up in the system, poison the muscles, poison the brain, poison the heart, poison at last the blood itself, starting in the intricate machinery of the body, new poisons in addition to themselves. The hunted hare run to death dies not because he is choked for want of breath, not because his heart stands still, its store of energy having given out, but because the poisoned blood poisons his brain, poisons his whole body. So also the schoolboy urged by pride to go on running beyond the earliest symptoms of distress, the mere loss of wind, struggles on until the heaped up poison deadens the brain and he falls dazed and giddy as in a fit, rising again it may be, and stumbling unconscious, or half conscious only, by mere mechanical inertia of his nervous system, only to fall once more, poisoned by poisons of his own making."

I quote liberally from the thoughts of the physiologist, Foster, for the purpose of making more clear the position taken. If continued effort without rest will poison to the extent of producing death, surely many repeated efforts which are not so much in excess with conditions favorable to accumulation of leucomaines, namely, only a tied up state of the secretions, inattention to the proper diet, accumulations of undigested and unassimilated food which undergoes fermentation and decomposition, developing ptomaines, thus adding to the reserve of poison in the system; keeping in mind the fact that the neglect of hygienic laws, failure to secure proper ventilation of rooms and the proper clearing out of the alimentary canal at proper times; surely we may have weariness and poisoning to the point of distress and even to that point which would suggest nervous exhaustion. Men who are greatly absorbed in their work have no time to think about the laws of health, but the family physician and the neurologist, as well, should realize in these cases the importance of "clearing the decks for action." They should promptly turn on the batteries which will scatter the accumulated poisons, open the windows, put the patient outdoors, anywhere so that the purest air may be breathed and elimination of the accumulated poisons hastened. In his essay read before this Society a few weeks ago, Dr. Bremer said:

"There is no class of sufferers more persistently and vigorously maltreated than the neurasthenic. The cause of this lies in the fact that there is no organ, member or tissue in the body, which has not been held up as the chief offender in neurasthenia by some or another specialist. The worst of it is that since specialism is still on the increase, the number of offending parts of the body is steadily multiplying, and however much legitimate specialism may have done for the advancement of the medical sciences, it must be admitted that the abuse of specialism has assumed the proportions and significance of a nuisance. There is to-day no specialist but does not consider neurasthenia a legitimate and fruitful field for its work, in a few instances to the advantage, but much more frequently to the detriment of the patient. Broadly stated the medical profession of to-day may be divided into two classes; the peripherists, comprising almost all specialists, and the centralists, found principally among the general practitioners and the neurologists. It has been said of the latter that whenever they do make a right diagnosis, as a rule nothing can be done for the patient. This is unfortunately true in a measure, but in this sense, that the patient has already gone the round of the peripherists, the specialists of the various organs, who mistook the case for a local trouble causing general symptoms, and tinkered at irrevelant symptoms, until the precious time for rational general therapeutics was gone. Had they looked upon the disorder of the various organs with a "central" light, interpreting the local trouble as being due to a general central disturbance, the result of their therapeutic efforts would probably have been entirely different.

"As a matter of fact it must be stated, that social strata do not make any difference in the frequency of Beard's disease. Rich and poor are indiscriminately affected by it. The only difference is in name, not in fact. For while the well-to-do neurasthenic, especially he that has an inkling of the ailment from his reading on the subject, is apt to apply to a neurologist for relief and get from him the true name of the disease, the poor man has to be satisfied with the diagnosis of biliousness, dyspepsia, catarrh and similar diagnostic incongruities, and is allowed to worry through his collapses as best he can, with the aid of quinin, calomel and tonics."

It is fortunate for humanity that the general pathologists and other specialists of the world have had this note of warning given them by a neurologist. Possibly they will in future leave the domain referred to entirely to those who look upon all the disorders of the various organs with a "central" light and interpret all local troubles as being due to a general central disturbance. However positive this dictum may seem, practitioners and specialists will more than likely still go on recognizing the fact that over-eating with too little defecation and accumulated leucomaines and ptomaines, and peripheral irritation, a figurative thorn in the flesh, all may if left unrelieved, create all of the symptoms of so-called neurasthenia, and that the cause being removed, the symptoms will disappear as if by magic.

Commencing with the teething child which is thrown into reflex convulsions as the result of an erupting tooth, all along the line to the second childhood when an unrelieved pruritis or eczema drives its victim mad with discomfort, we have evidences in favor of the thought that peripheral irritations are the prime cause in many cases of so-called neurasthenia.

Every general worker and specialist in diseases of the rectum has found patients on the border line of nervous exhaustion and almost madness, all produced by a fissure of the anus. There are probably those within the sound of my voice who have seen numerous cases presenting many of the symptoms of neurasthenia, caused by an obstructing spur upon one side or the other of the nasal septum, occasioning accumulations above up to the frontal sinuses, and at times the sufferings approaching the agonies of the damned. These cases, together with others which might be mentioned, the offending organs never having been interrogated, have run the

gauntlet of neurological treatment for months and even years, and are finally relieved quickly and precisely by the removal of the peripheral disturbance. We all know that excruciating pain borne even for a short time or pain of any kind wherever located, if long continued, will beget a general demoralization of the nervous centers simulating nervous exhaustion. Surely all of us, whether specialists or workers in the general field, should try to save our patients pain, with a view to the husbandment of their nerve force. From infancy, the growing child should have its teeth guarded with a view to prevent toothache and the consequent nerve disturbance. The mothers of the world should be placed in the best possible condition for the pangs of maternity, remembering the element of poisoning, how susceptible the nervous centers are to being poisoned. Thus elimination, cleansing of all the emunctories, should be the rule, particularly during the pregnant period, and then every possible pain should be prevented. More rapid recoveries would follow and parturition would result in less loss of nerve force.

Indeed, there is no special line of study which the worker in general medicine or the family physician should apply himself to more assiduously than the nervous system. Just in so far as he can, this particular laborer in the medical vineyard should be a neurologist, for it is a fact that all will admit that after all the nervous system represents our main capital. All that will develop it and maintain it and prolong its usefulness, should be known and made a part of the armamentarium of the general practitioner. The neurological author of "Current Fallacies" about neurasthenia, previously quoted, read a tirade in this Society a few years ago against gynecology (which by the way, was never answered), but may we not say that the criticism which may justly be directed toward the specialist who runs too much in grooves, will apply in a most pronounced way to the neurologist who dwells too much upon his particular line of thought.

In the language of the present President of this Society, the brainy and brilliant Outten, "the psychiater, whose curious art is oft too finely wrought, syllogizes mind oft while his own is pathologized by thought." In other words, the neurologist is in danger of laying too great stress upon his particular part of the anatomy and is tempted to misinterpret symptoms and dislocate disease. To him, unless he have a care, every victim of suffering or discomfort is a bundle of nerves gone wrong. The most successful workers in this field are those whose emotional centers have been kept in reserve and whose intellectual centers have been most strongly developed from the beginning and they base their work upon a foundation of broad general practice. The neurologists, like all the rest of us, should remember that every man becomes largely the crystallized result of all that he has seen, of that which he has associated with, and of that with which he has been brought most closely in contact. The psychiater then should constantly guard himself against exaggerating the neurological phenomena which present themselves to his view. He and the rest of us should remember that it is all very well to declaim against the specialist who interprets all headaches as being due to a necessity for eye-glasses, or the one who prefers to glide ever and always only in gynecic grooves, but some of our neurological brethren, God bless them, have often been known to misinterpret and exaggerate symptoms. Admitting for the sake of argument that many a woman suffering from a sore brain or a sorrowing heart has received treatment for a sore womb, that the womb of the world has been twisted and twirled in excess, that the docile, gentle and inoffensive ovary has not often enough been permitted to blush unseen and waste its sweetness upon the silent air, but all too oft has been rudely snatched from its sacred lair when it never had been guilty of doing anybody harm, still the fact remains that gynecology has relieved more sorrows, brightened more homes, saved more precious lives, and will go on saving more millions of lives that exist now only in the womb of the future than all of the other surgical specialties combined. It is the novices only who rush in where angels fear to tread, and act upon the idea that a woman's anatomic, physiologic and pathologic world is her womb. We should none of us, however, throw stones at each other, for the bulk of those in the medical profession (and out of it, too, for that matter) this side of Heaven, have their houses composed chiefly of glass.

I have in my records a half dozen cases of men of affairs approaching the fair, fat and forty age, where success had come to them after many weary years of labor; leisure, responsibility, over-eating and constipation followed; then came headaches, brain pressure, anxiety, insomnia, morbid fears followed by neurological opinion suggesting nervous exhaustion, which in its turn was followed by a frenzy of anxiety and dread of the future, all relieved within a few weeks by brisk purging, flushing of the kidneys, diaphoretics, fresh air, proper diet, a few nights of good sleep, and last but not least the instruction to buy and wear No. 16 collars instead of 14½ size which had been worn for years. Busy men when nearing the middle mile post of life as they increase in weight, often fail to realize that their necks grow more rapidly than their girth, and as a result they suffer from plain, everyday, tight collar headaches.

In a discussion of this subject at a recent meeting of this Society, a prominent member cited his own case of neurasthenia as one produced by prolonged loss of sleep and anxiety on account of sickness in his household, and that he was practically cured by many long continued hours of sleep. Here was a case of extreme fatigue diagnosticated nervous exhaustion, which was relieved by hours of sleep. Fancy, if you can, any one, the picture of intellectual health and animal vigor, as having had neurasthenia and been cured of it inside of a few weeks.

Constipation, excessive eating, lack of exercise and absence of proper exposure to fresh air upon the part of one of the strongest, most healthy looking and most robust members of our profession, resulted in a collapse which was interpreted as neurasthenia and treated as such, and kept under treatment for several years and the victim is not well yet, and the question may well be asked whether he ever will be. His neurologist flattered his vanity by telling him that he had neurasthenia as the result of overwork. Overwork forsooth! A practical all around physician would have inquired into his habits of life and ascertained the fact that he was a gourmand, that he ate as much of the richest food, being possessed of epicurean tastes, as would have been sufficient for three men. Being a specialist, with his work confined almost entirely to ill-ventilated offices in an old

styled, illy plumbed house on one of the prominent thoroughfares of the downtown portion of the city, the conditions were favorable to accumulation of poisons. He was in the position of a furnace supplying force to a mechanism wherein the fuel was shoveled in, in enormous quantities, a poor draft was given, the amount of oxygen was not sufficient, the ashes of combustion and clinkers were not properly removed and as a result there was an explosion upon the part of the outfit. Had the doctor referred to, fallen into the hands of an all-around many-sided physician, he would probably have been purged early and often for at least a week, for it would have taken that length of time however energetic his doctor might have been, to have cleared out the accumulations in that alimentary canal. At the same time his kidneys would have been flushed with a view to the more complete removal of poisons which are eliminated through this channel. The activity of the skin would have been encouraged, and during this time the poisoned nerve centers having unfitted him for exercise, he would have been furnished muscular exercise through the medium of massage. I venture the opinion that he would have been rid of his leucomaine and ptomaine poisoning within a very short time, and having been placed upon proper diet and instructed to take proper exercise both in walking and horseback riding, he would have been in shape for work promptly.

Malaria, cold and rheumatic conditions are often potent factors of so-called cases of neurasthenia. Chilling of the surfaces even if malaria be ruled out, and certainly where the system is depressed, no matter what the case we may have under our care, malaria can not often be ruled out of our philosophy, particularly in the Mississippi Valley. But even though it be not considered, with the nervous system, (which after all is our power of resistance against disease) below par, the susceptibility to cold so-called, is great. Chilling of the surfaces, driving the blood inwardly and interrupting the equilibrium of the circulation, still further adds to the difficulties which confront us, and begets a condition of disease which has been long considered under the term of rheumatic, to which Dr. Hans Froelich in a paper recently presented to the profession, has given the name of lymphostasis (*Medical Mirror*, January, 1894).

Dr. Froelich says that with such patients there is always too rich a supply of food with too little combustion, caused by insufficient peristaltic and voluntary motion. These circumstances, single or combined, then cause an engorgement of the concentrated lymph, which condition is first noticed in the fissures and tissue spaces, the source of the lymph system.

It will thus be seen that the rheumatic and gouty elements, the presence of uric acid and the deposit of fibrinous materials along the track of nerves, in other words, a lymphostasis should be constantly kept in mind, and so too the fact that in proper regulation of diet, massage and flushing of eliminative organs lies relief.

In closing, I desire to emphasize the following points:

1. The majority of cases of so-called neurasthenia are either victims of (*a*) nerve weariness dependent upon misdirected energy without proper rest at proper intervals; and (*b*) nerve poisoning, the result of constipation, improper food and accumulation of the ashes of combustion, leucomaines and ptomaines—a disposition to use the stomach too much and the rectum too little, and a failure to appreciate the importance of pure air as a rejuvenator of tired and poisoned nature; or else (*c*) nerve demoralization resulting from unrelieved peripheral irritations.

2. There is less harm in the victim of disease directing his attention to special organs and peripheral points as the offenders of his comfort, than there is in having his mind absorbed in the contemplation of his nervous apparatus. In other words, it is an evil day for any one, man, woman or child, when the attention is concentrated upon the nerve centers, when the energies are directed toward watching nervous symptoms; in fact, it would be well for them if they never had a knowledge of the anatomy and functions of their nervous system, and this knowledge should be the last presented to them for consideration.

The best way to cure the discomforts occasioned by nerve weariness and nerve poisoning, and even those of nervous exhaustion, which are far more serious, is to prevent them; and it should be our constant desire to impress upon the families with which we come in contact the importance of building up the nerve capital of the child from the day of its birth and even before its birth, indirectly through the mother. We should endeavor to teach the burden bearers and battle wagers of the world that the fruit bearers have a nervous system more easily fatigued and more easily put on edge than their own. Then will we help them to realize that marriage is not a failure. With a view to the building up and maintainment of nerve force and guarding against nervous bankruptcy, both on the part of parents and children, we should teach them the importance of proper food, proper clothing and a properly opened condition of the animated system of sewerage. We should impress them with the fact that the daily visit to the Temple of Cloaca, with satisfactory results, is quite as important as the morning and evening prayer. When we recall the fact that 90 per cent. of the women of the world are much more constipated than the traditional owl, we will realize what room there is for improvement in this direction. A special missionary work should be entered into on the part of the profession among the teachers of our schools, for they need not only to know the importance of the flushing out of the alimentary canal, so far as they themselves are concerned, but its importance as a stimulator of the wit and the ability of the young idea in the direction of shooting properly. All along the line we are safe in keeping in mind the cardinal principles both as preventers and curers of the conditions mentioned, namely, elimination, disinfection, nutrition, tranquilization and oxygenation. Large quantities of pure water serve, whether preceded by medicament or not, as excellent stimulators of the eliminative organs.

Food that is easily digested and readily assimilated is important, and in this connection the fats, hydrocarbons, are more valuable even as nerve builders than as enemies to tuberculosis, and that is saying a great deal. Under this head, butter and milk stand preëminent.

Sleep is indeed "tired nature's sweet restorer," and it represents the life of the individual. Mothers should be impressed with the fact that children who

are poor sleepers run the chance of growing up with wrecked nervous systems. The average mother, as well as the average child, does not sleep enough.

The limits of this paper will permit of but a few points in the way of treatment. As a sleep producer, I believe that trional in 10, 20 or 30 grain doses, is the best remedy we have at hand. No exaltation, no depression and no bad effects follow its use. I observe in a recent number of one of my exchanges, a very pronounced tribute to this remedy by Dr. J. B. Mattison, of Brooklyn, N. Y., a high authority. His experience is entirely in harmony with my own.

The digestion should be helped in order to secure nutrition in better form in every way possible. I have no sympathy with those who inveigh against the general aids to digestion. Just as well say that when a man's leg is broken or injured he should not wear a crutch as to say that when the digestive powers are crippled, crutches are not indicated. Pepsin which assists in the digestion of albuminous foods, and diastase which directs its energies toward the digestion of starchy foods are of value. Papoid is also an excellent helper of digestion. Remembering that we have a condition of general debility all along the line, tonics are certainly indicated, and there is none better in all the world as a toner up of digestive and general nerve activity than strychnia.

For long, arsenic in the form of Fowler's solution has been a sheet anchor in the treatment of chorea and allied conditions, and believing as I do that in neurasthenia, which is a disease of adult life, that the conditions are almost identical to those which are present during childhood when chorea prevails, (hysteria, chorea and neurasthenia are all a species of physical insanity) I consider arsenic of great value. Within the past few months I have administered to these cases a preparation which was introduced to the medical profession by Dr. Wm. F. Barclay, of Pittsburg (one of the most reputable physicians in the State of Pennsylvania, a man who is an expert chemist and a thoroughly reliable observer) and to which has been given the name of arsenauro, which is in fact a beautiful and attractive liquor of the bromid of gold and arsenic. (Every 10 drops, the ordinary dose, contains one thirty-second grain of gold bromid and one thirty-second grain of arsenic bromid. I have a very large number of patients using this compound in 10 drop doses three or four times a day and uniformly with good effect.

Let us not forget that the majority of these cases, whether spurious or bonafide neurasthenia, have usually a rotten, crowded condition of the alimentary canal, a long history of constipation leading up to leucomaine and ptomaine poisoning and that the entire system of secretory glands is deficient and perverted in activity, and that flushing out of the emunctory system is called for. As an all around excellent stimulator of elimination, tongalin (Liq. tong. salicylat—Mellier) is indicated. Pains which are present are well met by the salicylic acid contained in the compound and which is of the best form, being made from the oil of wintergreen. The pilocarpin, cimicifuga and colchicin which it contains are all stimulators of elimination. I usually administer from a teaspoonful to a tablespoonful at bedtime and oftener if necessary in order to clear out the bowels thoroughly.

In cases of la grippe which are accompanied by so-called rheumatic symptoms and great nervous prostration, the tongalin is particularly indicated as a flusher of the sewerage system.

Change of scene and air are often indicated, and to my mind, no better place in all America can present itself than Hot Springs, Arkansas. Here we have the elevated mountainous atmosphere, the ideal water and facilities furnished for drinking it in large quantities, and being hot it is all the more promptly eliminated, and at the same time the bathing in the hot water is very beneficial in the direction of relieving the pains which so frequently accompany these conditions.

The judicious administration of electricity is certainly indicated, but I am strong in the belief that more are benefited by judicious massage, both manual and mechanical, then by electricity.

WHAT THE GENERAL PRACTITIONER SHOULD KNOW ABOUT DISEASES OF THE EYE.

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In the issue of the Journal of February 3 Dr. W. A. Fisher reviews an article of mine on the above subject read before the Tennessee State Medical Society.[1] In the article I stated that it was not expected that every doctor should become a specialist but that he should understand enough to know his ignorance; that it was not necessary for him to be able to fit glasses but he should understand the main indications for the use of spectacles, viz.: Presbyobia, diminished vision, asthenopia, headache, functional nervous diseases, etc.; he should be able to diagnose between cataract and glaucoma as a cause of poor vision, and also be familiar with the diagnosis of inflammations of the conjunctiva, cornea and iris; he should be informed on the indications and contra-indications for the use of atropin, eserin and similar drugs. My article was an endeavor to outline a statement of the *minimum* amount of knowledge which a general practitioner should possess who desires to practice medicine conscientiously. More information on these subjects might be useful, but the above seemed to me to be indispensable. I advocated, further, that the doctor should not attempt to use the ophthalmoscope. It is on this latter point that Dr. Fisher takes issue with me, and he truly states that my position is different from that of most of the teachers of the day.

To this I can reply that it accords with the practice of the day. The great mass of practitioners have decided that it is not best that they should attempt to use the ophthalmoscope. It has seemed to me that one of the main causes that the doctors know so little of this branch is that their teachers try to cover too much ground and the medical student gets a working knowledge of very little in most of our colleges.

The Doctor is unfortunate in the examples he presents in advocating the use of the ophthalmoscope by the general practitioner. He asks: "It is of importance to diagnose glaucoma early, but if he is barred from the use of the ophthalmoscope how can he make the early diagnosis?"

[1] Alabama Medical and Surgical Age, June, 1893. Virginia Medical Monthly, July, 1893. Atlanta Medical and Surgical Journal, August, 1893. American Practitioner and News, December, 1893.

The diagnosis can certainly be made by the increased tension which does not require a great amount of skill if it be at all marked. The diagnosis with the ophthalmoscope depends on the excavation of the optic nerve mainly and this does not occur *early*. In the case of glaucoma cited, the pain and diminished vision would suggest glaucoma. Confirming this there would have been an anesthetic hazy cornea, a shallow anterior chamber, a dilated pupil, enlarged episcleral veins, a history of halos and increased presbyopia, although some of these symptoms would have been wanting.

The case of Dr. Shinn was one of amblyopia from tobacco or alcohol, and could have been diagnosed by the central scotoma for red more certainly than by the ophthalmoscope. The Doctor relates a case of cataract and asks why the ophthalmoscope should be ignored. Practically no one makes a diagnosis of cataract with the ophthalmoscope except it be in incipient cataract. A general practitioner ought to be able to diagnose a cataract which was so far developed as to cause the sufferer to be sent to the asylum, especially if he should dilate the pupil. The gradually failing vision without inflammation and the age of the patient would indicate the trouble which would be confirmed by the appearance of the pupil. As to fitting glasses, I said the practitioner need not do this work. So far as the specialist is concerned it would be better if spectacles were fitted by doctors than by jewelers and traveling charlatans. Many defects of the eye would be discovered which are now unnoticed. The more the profession know of the eye the better for the competent oculist. From a theoretical standpoint it might be better for all practitioners of medicine to master the ophthalmoscope, but I believe the student would better spend the time in studying the diagnosis of glaucoma and cataract by other means or with physical diagnosis and kindred studies. The graduate should be required to be informed on the matter indicated in the article but it is not necessary for him to handle the ophthalmoscope nor is it expedient as a rule that he should do so.

CLINICAL HISTORY OF THE CASE OF PRESIDENT JAMES ABRAM GARFIELD.

BY ROBERT REYBURN, A.M., M.D.

PROFESSOR OF PHYSIOLOGY AND CLINICAL SURGERY MEDICAL DEPARTMENT HOWARD UNIVERSITY, WASHINGTON, D. C., AND ONE OF THE ATTENDING SURGEONS IN THE CASE OF PRESIDENT GARFIELD.

(*Continued from page 502*).

IV.

August 8, 6 A.M. He had five ounces of koumiss. At 8 A.M. seven ounces of koumiss. At 8:40 A.M. he took five ounces of claret. August 8, 8:30 A.M. Temperature 98.4; pulse 94; respirations 18. August 8, 12 M. Temperature 100.2; pulse 104; respirations 20. August 8, 7 P.M. Temperature 101.2; pulse 108; respirations 19.

The President's wound was dressed at 8 A.M. and it being evidently necessary to make a more free opening in the wound to facilitate the escape of pus, he was etherized this morning, and the operation performed. Dr. Reyburn administered the ether, and it acted very quickly and pleasantly. The incision was extended downwards and forwards, and a counter-opening was made into the track of the bullet below the margin of the twelfth rib; this was done by Dr. Agnew. Two drainage tubes were then inserted. The President bore the operation well. He was given some claret at 12 M. At 1 P.M. he took seven ounces of koumiss which he vomited soon afterwards. He took no nourishment until 5 P.M. and then only small doses of milk and lime water were given him during the evening until his stomach recovered from the nausea resulting from the etherization. The wound was dressed as usual at 6 P.M.; it looked well, but had a profuse discharge of pus and bloody serum. The President slept well during the night, but had fever which partially abated towards morning.

August 9, 8:30 A.M. The President has a higher temperature than he has had for a number of days at this hour of the morning. At 8 A.M. his wound was dressed, and it was found that the pus was being freely discharged through the counter opening made yesterday. August 9, 8:30 A.M. Temperature 99.8; pulse 98; respirations 19. August 9, 12:30 P.M. Temperature 99.7; pulse 104; respirations 19. August 9, 7 P.M. Temperature 101.9; pulse 106; respirations 19.

Since yesterday afternoon small quantities of liquid food given at short intervals have been retained, and during the day larger quantities were administered without gastric disturbance. He had an enema at 5 P.M. The wound was dressed at 6 P.M. The track of the new wound was found to be closed evidently causing some irritation. The President slept well (without the use of any anodynes) but sweat a good deal during the night, and complained of weakness this morning (August 10). Professor Agnew left at 2 P.M. August 9.

August 10, 5:30 A.M. He was given five ounces of milk with half an ounce of lime water. At 8 A.M. the wound was dressed, and a profuse discharge of pus came from the new opening, which evidently relieved him very much. His temperature fell to normal this morning. August 10, 8 A.M. Temperature 98.5; pulse 104; respirations 19. August 10, 12:30 P.M. Temperature 98.6; pulse 110; respirations 18. August 10, 7 P.M. Temperature 101; pulse 108; respirations 19.

August 10, 8:15 A.M. He took half an ounce of brandy. At 9 A.M. he took breakfast, a little chicken toast, potatoes and strawberries. At 11:15 A.M. he had half an ounce of brandy. At 12:15 P.M. he had six ounces of milk with half an ounce of lime water. At 3 P.M. he had six ounces of koumiss. At 4:15 P.M. he had half an ounce of brandy. At 5:15 P.M. The President has passed quite a comfortable day, and had no rise of temperature until the evening. The wound was dressed at 6 P.M. and was much improved in appearance, and with a free discharge from the deeper parts of the wound. He has taken half an ounce of brandy four times during the past twenty-four hours and an adequate supply of liquid food.

August 11. The President slept well during the night only awaking once. At 4:30 A.M. he had six ounces of milk. At 6:30 A.M. he had six ounces of koumiss. At 8:30 A.M. he had three ounces of bouillon, and two teaspoonfuls of meat juice. At 10:40 A.M. he had for breakfast the same as yesterday. The wound drained well, and there was not such an accumulation of pus as usual, in the deeper parts of the wound. Granulations are showing themselves on

Entered according to Act of Congress, May 29, 1893, by ROBERT REYBURN, M.D.

the edges of the wound. August 11, 8 A.M. Temperature 98.5; pulse 104; respirations 19. August 11, 12:30 P.M. Temperature 98.6; pulse 110; respirations 19. August 11,7 P.M. Temperature 101.2; pulse 108; respirations 19.

At 12 M. he had six ounces of milk. At 2 P.M. he had four ounces of bouillon, and two teaspoonfuls of meat juice. At 4:10 P.M. he had six ounces of koumiss. During the day he had four doses (of half an ounce each) of brandy, at intervals of four hours. The President had an excellent day until 4 P.M. when the febrile rise took (101.2). On dressing the wound at 6 P.M. the flow of pus not as abundant as usual. After dressing the wound the President seemed to feel relieved, and fell asleep about 6 P.M. Professor Hamilton arrived at 10 P.M.

August 12, 1:15 A.M. he had six ounces of koumiss, and the same at 6 A.M. At 8 A.M. he was given half an ounce of brandy. During the night he was somewhat restless, and awoke at 5:30 A.M. After being sponged off with alcohol he went to sleep again and slept until 7:30 A.M. At 8:40 A.M. he took two ounces of bouillon, and two teaspoonfuls of beef juice. He breakfasted at 10:50 A.M. on a raw beef sandwich, and milk toast and seemed to enjoy it. No brandy was given at noon at the request of Professor Hamilton. At 1 P.M. he had six ounces of koumiss, and at 3 P.M. he had six ounces of milk. At 5:30 P.M. he had six ounces of koumiss. Dr. Bliss was compelled to go home to-day at 1:30 P.M. as he was suffering from septic poisoning received through a cut in his hand while dressing the wound of the President on August 8.

August 12, 8:30 A.M. Temperature 98.6; pulse 100; respirations 19. August 12, 12:30 P.M. Temperature 99.3; pulse 100; respirations 19. August 12, 7 P.M. Temperature 101.2; pulse 108; respirations 19.

The President has been doing fairly well to-day, though slightly feverish. It was determined to abstain from giving the President any brandy or other stimulants for the term of twenty-four hours. The wound was dressed as usual, and the discharge at both morning and evening dressings was not as abundant as customary. He had the same febrile rise (101.2) that he had last evening.

August 13, 8:30 A.M. The President did not sleep as well as usual during the early part of the night. After midnight, however, his sleep was more refreshing, and only broken at long intervals. This morning his temperature did not fall to the normal point (as it has done for several days past) and remained at 100.8 during the morning dressing. After the morning dressing he improved, and his temperature fell to 99.2. August 13, 8:30 A.M. Temperature 100.8; pulse 104; respirations 19. August 13, 12:30 P.M. Temperature 99.2; pulse 102; respirations 19. August 13, 7 P.M. Temperature 100.7; pulse 104; respirations 19.

August 13, 2 P.M. The fever indicated in the morning bulletin has gradually receded and the President is in good spirits and expresses himself as feeling very comfortable. The day is extremely oppressive, over 90 F. in the shade; but the President's room is kept comparatively comfortable by means of the oooled air, which is forced into it, the temperature being kept about 80 F. Early this morning at 3 A.M. he awoke and took six ounces of milk; at 6:45 A.M. he had six ounces of koumiss; at 8 A.M. he had three and one-half ounces of bouillon, and two drachms of meat juice. The stimulants which had been suspended during the past twenty-four hours were resumed to-day. The President showed such exhaustion after their suspension that the unanimous opinion of the surgeons was in favor of their resumption. Professor Hamilton left for New York at 10:15 P.M. At 8 A.M. the President was given half an ounce of brandy; at 10:30 A.M. he breakfasted on a little stewed dried beef, toast, potatoes and a little onion. At 11 A.M. he had six ounces of milk. At 1:10 A.M. he had three ounces of chicken jelly, and half an ounce of brandy. At 4 P.M. he had six ounces of milk and at 5 P.M. he had an ounce of brandy and three grains of bisulphate of quinia. At 5:45 P.M. he had four ounces of bouillon, and two drachms of meat juice. The President's wound was dressed as usual this morning and evening, and a free discharge of pus came from it at both dressings.

August 14. The President slept fairly well during the night, but was slightly feverish, though he said that he felt quite comfortable. The morning dressing seemed to tire him, and there was a good deal of irritability of the stomach. At 2:15 A.M. he had six ounces of milk; at 5 A.M. six ounces of koumiss; at 8 A.M. half an ounce of brandy in six ounces of milk, and three grains of bisulphate of quinia. He breakfasted at 10:15 A.M. on a little steak, potatoes, and a few blackberries. At 12 M. he was given three grains of bisulphate of quinia with half an ounce of brandy; soon after this he vomited. His temperature this morning at 8 was one degree less than at the same hour yesterday morning. His temperature at the evening dressing of the wound was about the same as that of last evening.

August 14, 8:30 A.M. Temperature 99.8; pulse 100; respirations 18. August 14, 12:30 P.M. Temperature 99.8; pulse 100; respirations 18. August 14, 7 P.M. Temperature 100.8; pulse 108; respirations 19.

August 14, 12:30 P.M. He was given three drachms of beef juice, which he retained. He then went to sleep until 3 P.M. when he awoke and shortly afterwards vomited. At 5:30 P.M. he again vomited about four ounces of sour liquid tinged with bile. All nourishment was suspended, and he was given a teaspoonful of the following mixture in water every four hours:

℞ Tincture lavandulæ comp aaj drachm.
et tincturæ cardamoni comp: . . . aaj drachm.
Acidi carbolici grs. iv.
Alcohol: diluti jss uncia.
Misce.

At 9:45 P.M. he vomited again, and at 9:50 P.M. he was given one drachm of aromatic mixture. At 11:30 P.M. he vomited six ounces of greenish biliary fluid. He complained of pain in the epigastrium, had considerable restlessness with fever. His pulse reached 120 per minute.

August 15, 3 A.M. The President has awakened at intervals of about half an hour, and complains a good deal of the pains and distress in the stomach. He has retained two teaspoonfuls of milk and lime water, which have been given every half hour since 11 P.M. (of August 14). His pulse is still 120 and very weak. After consultation with Drs. Bliss and Woodward, Dr. Reyburn gave the President three-sixteenths of a grain of sulphate of morphia hypodermatically. After receiving the injection he went to sleep in a short time and slept soundly until 7:30 A.M.

August 15, 8:30 A.M. Temperature 100.2; pulse 108; respirations 20. August 15, 12:30 P.M. Temperature 99; pulse 118; respirations 19. August 15, 7:30 P.M. Temperature 99.6; pulse 130; respirations 22.

During the morning the President's stomach was very irritable, and he was given only three teaspoonfuls of milk and lime water at 7:30 A.M. which was all the nourishment he was able to retain. For the irritability of the stomach he was given twelve powders each containing one-twelfth of a grain of calomel with one grain of subnitrate of bismuth. He took one of these every hour until seven were taken.

The condition of the President at this time excited very grave apprehensions in the minds of the attending surgeons. His stomach could not assimilate food and just as soon as this occurred he rapidly developed symptoms of exhaustion. During the afternoon and evening his pulse went up to 130 per minute, whilst his temperature kept falling. After consultation, alimentation by the rectum was determined on, and there is every reason to believe that our doing so saved the President from rapidly impending death. The following was the formula used, viz: The yelk of one egg, one ounce of bouillon, one and a half ounces of milk, one half ounce of whisky, and ten drops of deodorized tincture of opium. Mix and administer at the temperature of 100 F. as an enema per rectum. The administration of these enemas was highly beneficial to the President, and he showed the restorative and invigorating effect of their use almost immediately. From August 15 until August 18 he was unable to take any food whatever (except three teaspoonfuls of beef essence) and in fact for about one week subsequent to that date he was nourished almost exclusively in the same way. At 10:30 A.M. he had nutritive enema (see formula given above). At 9:15 and at 11 P.M. the vomiting again recurred, and very hot water in teaspoonful doses was given; this seemed to relieve the nausea.

August 16. During the night the President suffered from nausea until 3 A.M. when a nutritive enema was given him, which he retained. After this he went to sleep, and slept until 7:30 A.M. At 8 A.M. the wound was dressed as usual. There was a free discharge of pus from the wound, and the President was much exhausted by the dressing. Had nutritive enemas at 3:15 A.M., at 8 A.M., at 12 M., at 4. P.M. and at 8 P.M. During the afternoon the President reacted a good deal, and seemed to be much better. At 5:30 P.M. he vomited about three ounces of a greenish brown fluid with but little odor. The wound was dressed at 6 P.M. It seemed rather dry, but there was a fair amount of discharge from it.

August 16, 8:30 A.M. Temperature 98.6; pulse 110; respirations 18. August 16, 12:30 P.M. Temperature 98.3; pulse 114; respirations 18. August 16, 7 P.M. Temperature 98.9; pulse 120; respirations 18.

August 16, 7 P.M. Temperature 98.9; pulse 120; respirations 19.

August 17. At 3 A.M. the President had nutritive enema, and again at 8 A.M. He slept well during the night, and looks better this morning. August 17, 8:30 A.M. Temperature 98.3; pulse 110; respirations 18.

August 17, 12:30 P.M. Temperature 98.7; pulse 112; respirations 18. August 17, 6:30 P.M. Temperature 98.8; pulse 112; respirations 18.

At 10 A.M. he fell asleep, slept soundly and awoke refreshed at 11:15 A.M. He did not vomit during the day, and the nutritive enemas were well retained, and seemed to nourish him sufficiently. Professor Agnew has been here continuously on duty since 11 A.M. of August 14, and as the grave symptoms presented by the President seemed to demand the presence of all the surgeons, Professor Hamilton was sent for and arrived at 10 P.M., August 16. During the afternoon a teaspoonful of beef extract was twice administered by the mouth, and was retained. Small quantities of cold water and cracked ice were also given without causing nausea. At 12:30 P.M. the President was given the nutritive enema; at 12:40 P.M. one drachm of extract of beef; at 1:45 P.M. another drachm of extract of beef; at 5 P.M. a second nutritive enema, and at 11:45 P.M. a third drachm of extract of beef. During the day the President seemed quite comfortable until about 9 P.M., when he complained of pain and slight swelling of the right parotid gland. The wound was dressed as usual night and morning. The inner track of the wound seems to be closing up, and the eleventh rib at the seat of the fracture is covered with granulations.

August 18. The President slept well almost all the night, and awoke at 6:30 A.M. apparently much refreshed. He was then washed and sponged with alcohol, and his position changed. During the night the swelling of the right parotid gland had increased very rapidly, and the following local application was applied:

℞. Iodoformi
Et balsam Peru āā drachm j.
Collodii. uncia j.
Misce.

At 7 A. M. he had nutritive enema, and also at 1:30 P.M. At 9:30 A.M. he had half an ounce of koumiss, and the same at 10 A.M. and at 11 A.M. At 2:30 P.M. he had two ounces of koumiss, and two tablespoonfuls of milk gruel. At 4:30 P.M. he had nutritive enema. At 7 P.M. he was given three tablespoonfuls of milk gruel and at 11:30 P.M. he had nutritive enema.

August 18, 8:30 A.M. Temperature 98.8; pulse 104; respirations 17. August 18, 12:30 P.M. Temperature 98.4; pulse 108; respirations 18. August 18, 6:30 P.M. Temperature 100; pulse 108; respirations 18.

The President asked for and retained several small portions of liquid nourishment during the day and evening. He bore the evening dressing fairly, but complained a good deal of the pain in the parotid gland. Professor Agnew left this evening for Philadelphia.

August 19. The President was somewhat restless and slightly feverish from 10 P.M. last night to 2 A.M. this morning. At that hour he began to perspire, and then fell asleep, and slept until 7:30 A.M. At 8 A.M. the wound was dressed, and the soft catheter used to wash out the wound was passed along the lower track of the wound twelve and a half inches, and quite a free discharge of pus came from the wound.

At 7 A.M. he had four ounces of koumiss; at 7:30 A.M. nutritive enema; at 8:30 A.M. four ounces of koumiss; at 10:15 A.M. two ounces of milk gruel. At 11:20 A.M. he began to perspire, having had a slight rigor. He was rubbed dry, and wrapped in warm woollen cloths, with heat applied to his extremities. There is a slight swelling of the right side of the face, around the right eye, but the pain

and swelling of the right parotid gland has much diminished. There being a tendency to diarrhea one drachm of subcarbonate of bismuth was given to the President at one dose. At 1 P.M. he had nutritive enema; at 3:30 P.M. three ounces of milk gruel; at 4 P.M. six ounces of koumiss; at 6:30 P.M. nutritive enema and at 7:20 P.M. three ounces of milk gruel. At 7:30 P.M. the bowels were moved.

August 19, 8:30 A.M. Temperature 98.4; pulse 106; respirations 17. August 19, 2:30 P.M. Temperature 98; pulse 106; respirations 17. August 19, 2:30 P.M. Temperature 100; pulse 106; respirations 18.

Professor Hamilton left for New York in the 2:10 P.M. train to-day. Professor Agnew came from Philadelphia to Washington to-night (August 19).

August 20. The President slept tolerably well, but wakened several times during the night. He stood the dressing of the wound very well this morning. The President has slightly relaxed; he had two loose passages, one at 1 A.M. and one at 12:15 P.M. At 1:30 A.M. he had nutritive enema; at 3 A.M. three ounces of milk gruel; at 8:30 A.M. five ounces of koumiss; at 10:20 A.M. nutritive enema; at 12:20 P.M. three drachms of beefsteak juice; at 2 P.M. three ounces of milk gruel; at 4 P.M. three ounces of koumiss, and at 6:30 P.M. three ounces of milk gruel. During the day the President took in all nine ounces of milk gruel, and eight ounces of koumiss, by the mouth. At the morning dressing the wound looked well, and the pus was laudable in character.

After the operation of August 8 the flexible tube used to wash out the wound at each dressing readily followed the track of the ball to the depth of three and a half or four inches. At the dressings, however, a small quantity of pus came, as was believed from the deeper parts of the wound, from the part of the track beyond the above mentioned point. The pus flowed either spontaneously or after gentle pressure had been applied over the anterior surface of the right ilium. This deeper part of the track was not reached by the tube until yesterday morning, when the separation of a small slough permitted the tube to pass downwards and forwards for the distance of twelve and a half inches from the external opening of the last incision.

August 20, 6:30 P.M. The President was somewhat exhausted by the evening dressing, and has a little more fever this evening. To-day the following ointment was ordered for application to the inflamed parotid gland:

℞. Unguenti belladonnæ.
Iodoformi.
Balsam: Peruvian.
Misce.

The swelling of the right parotid gland appears to be unchanged.

August 20, 8:30 A.M. Temperature 98.4; pulse 98; respirations 18. August 20, 12:30 P.M. Temperature 98.4; pulse 107; respirations 18. August 20, 6:30 P.M. Temperature 100; pulse 110; respirations 19. At 10 P.M. he was given nutritive enema.

August 21. The President awoke more frequently than usual during the night. At 3:40 A.M. he fell asleep, and slept soundly until daybreak. He took liquid nourishment in small quantities during the night. The wound was dressed as usual at 8:20 A.M. The secretion from the outer surface of the wound was rather scanty, and there was not so much secretion as usual from the deeper track of the wound.

August 21. At 3:30 A.M. he was given four ounces of koumiss; at 4:50 A.M. three ounces of milk gruel; at 7 A.M. nutritive enema; at 7:45 A.M. four ounces of koumiss; at 10:10 A.M. three ounces of koumiss; at 12:45 P.M. four ounces of milk gruel. At 1:30 P.M., in endeavoring to hawk up the secretion from the right parotid gland, which was very tenacious, he brought on an attack of vomiting. At 3:20 P.M. he was given the nutritive enema. At 5:15 P.M. he vomited six ounces of biliary fluid of a greenish yellow color. The President having vomited three times during the afternoon, the administration of food by the mouth was temporarily suspended. The parotid swelling is painless but stationary. August 21, 8:30 A.M. Temperature 98.8; pulse 106; respirations 18. August 21, 12:30 P.M. Temperature 99.4; pulse 108; respirations 18. August 21, 3:30 P.M. Temperature 99.2; pulse 108; respirations 18.

President Garfield was some of the time entirely, and all of the time very largely, sustained by rectal feeding from the 14th of August until his death on September 19. The value of this method of supplying waste in grave disease has never been more strikingly shown than in this instance, because in all probability there was never a patient more closely observed by his medical attendants, and because the quantity and quality of the rectal diet were most carefully regulated, both as to mode and time of administration. During the stage of inflammation of the parotid gland (eight days) this mode of sustenance was entirely relied upon, he being unable to take any food by the mouth and stomach, and only very small quantities of cracked ice and water, which were frequently rejected.

The quantities carefully measured, were prepared at the dispensary of the Surgeon-General by Hospital Steward W. F. Crusor, U. S. A., in accordance with the following formula:

"Beef Extract.—Directions: Infuse a third of a pound of fresh beef, finely minced, in fourteen ounces of cold soft water, to which a few drops (four or five) of muriatic acid and a little salt (from ten to eighteen grains) have been added. After digesting from an hour to an hour and a quarter, strain it through a sieve and wash the residue with five ounces of cold water, pressing it to remove all soluble matter. The mixed liquid will contain the whole of the soluble constituents of the meat (albumen, creatin, etc.), and it may be drank cold or slightly warmed. The temperature should not be raised above 100 F.; as at the temperature of 113 F., a considerable portion of the albumen, a very important constituent, will be coagulated."

Two ounces of beef extract, two drachms of beef peptonoids, and five drachms of whisky were given with scrupulous regularity every four hours, day and night. Occasionally five to fifteen drops of deodorized tinct. opii were added as an additional nerve stimulant and anodyne, and also to secure retention of the enema. They were usually retained without causing any discomfort on the part of the patient, and, as a rule, once in twenty-four hours a discharge of healthy feces occurred, generally of such consistence and form as would justify the belief that digestion had taken place in the small intestine. For the first five or six days the yolk of an egg was added to the injections, but in the judgment of the surgeons was the cause of annoying and offensive flatus. This symptom was promptly relieved by discontinuing the egg, and temporarily adding about a drachm of willow charcoal to the enema. Charcoal tablets by the mouth were also occasionally used.

There was a strong desire on the part of the physi-

cians to discontinue the use of stimulants, but on each occasion when the attempt was made the pulse became more frequent and feeble, so that we were forced to resume their use. Later in the history of the case, after the removal to Elberon, alimentation both by the rectum and the mouth was found to be borne without evidence of peristaltic antagonism.

August 22, 8:30 A.M. Temperature 98.4; pulse 104; respirations 18. August 22, 12:30 P.M. Temperature 98.4; pulse 104; respirations 18. August 22, 6:30 P.M. Temperature 100.1; pulse 110; respirations 19.

A feeling of uneasiness prevailed to-day among the medical attendants in consequence of the unfavorable condition of the President. He is greatly troubled by the tenacious mucus which accumulates in the back of the throat, and in the effort to free his mouth and throat he twice brought on attacks of vomiting yesterday. Happily after midnight the President who had been restless, fell into a sound sleep. He slept more quietly during the after part of the night, and has been able to retain liquid nourishment when taken by the mouth, as well as the nutritive enemas. During the day there was no recurrence of the vomiting and nausea. The parotid swelling is not materially smaller but is painless, and there is less of the accumulation of mucus in the mouth and throat. During the morning he took about twelve ounces of milk gruel and koumiss, and at 7 A.M. an enema of beef extract was administered. During the day for the first time was noticed a slight incoherence of speech, immediately after awaking from sleep. This seemed to disappear as soon as the senses became fully under control. The heat of the weather has somewhat moderated to-day, and it was not considered necessary to use the cooling apparatus for the President's room.

August 22, 2:10 P.M. The President has passed a quiet afternoon, and sleeps a good deal of the time. Up to the present time he has taken and retained twenty-four ounces of liquid nourishment consisting of milk porridge and koumiss. He also continued to take at stated intervals small quantities of the same kind of food during the evening without disturbance of the stomach. The wound was dressed as usual, and the process of repair seems to be going on in all parts of the wound exposed to view.

August 23, 8:30 A.M. Temperature 98.4; pulse 100; respirations 18. August 23, 12:30 P.M. Temperature 98.9; pulse 104; respirations 18. August 23, 6:30 P.M. Temperature 99.2; pulse 104; respirations 19.

August 23, 8:30 A.M. The President slept during the greater part of the night but awoke at intervals. He has taken since last night a larger quantity of liquid food by the mouth than in the corresponding hours of any day during the past week. During the night he received two nutrient enemas, and the use of the nutrient enemas was continued at longer intervals during the day. He continued to take liquid food during the afternoon and evening, and had no recurrence of gastric disorder. The parotid swelling remains unchanged, but the mucus which accumulates in the back part of the mouth is less viscid, and now gives but little trouble. This morning in addition to his koumiss and milk porridge, he was given the juice of a steak, which he took with relish. Professor Agnew, who has remained on duty since August 20, returned to Philadelphia to-day, having been relieved by Professor Hamilton. In spite of all our efforts to nourish the President he is emaciating so rapidly that it is distressing to look at him. His weight when he was wounded was 210 pounds, and his weight now is probably not more than 130 or 135 pounds. This emaciation is accompanied by such great exhaustion as to give rise to the most gloomy forebodings on the part of his medical attendants. During the last three or four weeks the President has often expressed the wish to be in his old home; he longed to be back in Ohio, "on the old sod once more; to walk down the streets of Cleveland, meeting and greeting familiar friends."

(To be continued.)

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

The Third Annual Meeting Held in Chicago, Sept. 12, 13 and 14, 1893.

AUGUSTIN H. GOELET, M.D., President.

(Continued from page 514).

A CONTRIBUTION TO THE ELECTRO-THERAPEUSIS OF SALPINGITIS.

DISCUSSION.

DR. A. LAPTHORN SMITH said that if this paper had been read before the Philadelphia Obstetrical Society, the author would be glad to escape from the room with his life. At the same time, he quite agreed with the author in his statements. He felt quite sure that the tubes can be catheterized. Dr. Wallace showed him in his Liverpool hospital six cases at one time, in which he had introduced a uterine sound into the tubes. Again, he had himself frequently had cases in which fluid accumulations in the tubes were discharged spontaneously. The source of the discharge had been proven by the use of clean, dry, cotton tampons. In view of these facts, why can not we empty the tubes in the natural way through the uterus? A few more papers of this kind, he thought, would stem the tide and control the present operating furor.

DR. N. W. WEBER, of Detroit, said that if there are no other triumphs to be ascribed to electricity than those achieved in the relief of ovarian neuralgia, and the great distress attendant upon pyosalpinx, and various pelvic adhesions, it certainly has accomplished a great deal. He could recall the sneering doubt with which the report of Dr. Sprague's second case was received in their State Society; yet he felt satisfied from what he had seen that the author was doing a great work. We should endeavor to suppress this great tendency to perform severe abdominal operations on all sorts of slight pretexts.

DR. MASSEY said that while appreciating this conservative surgery, it should not be forgotten that this work is for experts only. In 1888 he had himself brought the subject of treating such conditions by intra-uterine negative galvanization up before the Philadelphia Obstetrical Society. He succeeded at that time in emptying a number of tubes.

DR. SARAH A. STEVENSON, of Chicago, said that notwithstanding the law which has been laid down that electricity is contra-indicated whenever there is pus present, she had for a long time employed it in such conditions. Studying Bozeman's experiments in catheterization of the ureters, she had become convinced that it was entirely feasible to drain the Fallopian tubes in a similar way, but she had hesitated hitherto to employ it herself. She was therefore pleased to learn of Dr. Sprague's results.

DR. GEHRUNG remarked that as electricity is known to cause dilatation of various apertures, it would seem that this agent would greatly facilitate the catheterization of the tubes.

DR. SPRAGUE, in closing the discussion, said he had been agreeably disappointed at the way his paper had been received, for he expected it would be very severely criticized. It was the report of the very discussion to which Dr. Massey had referred that first led his thoughts in this direction.

DISCUSSION.

"WHAT ARE THE POSSIBILITIES OF ELECTRICITY IN THE TREATMENT OF FIBROID GROWTHS?"

The disputants were requested to confine their remarks to the special points presented in the following synopsis:

a. Symptomatic Cure. (Hemorrhage, pain, pressure symptoms, strength and nutrition.)

b. The Growth. (Arrest, retrogression, disappearance, recurrence.)

c. Kind of current.

d. Properties of the Current. (Electrolytic, cataphoric.)

e. Action of the Current: 1, nerve (vaso-motor, motor innervation, sensory); 2, muscle (irritability of, structural changes in.)

f. Contra-indications.

g. Change of method, current strength, polarity, length of séances, frequency of application and duration of treatment.

Dr. J. H. Kellogg read a paper on

WHAT ARE THE POSSIBILITIES OF ELECTRICITY IN THE TREATMENT OF FIBROID GROWTHS?

I began the treatment of fibroid growths by the electrolytic method something more than five years ago, and am still employing this method of treatment with confidence and satisfaction, although, as I am willing to confess, with more moderate expectations respecting the possibility of a radical cure of the disease. The Secretary has arranged this subject under convenient headings for discussion, and this synopsis, I believe, covers practically the whole ground. In opening the discussion I will touch briefly upon each point.

1. *What are the possibilities of electricity as regards a symptomatic cure?* One of the most prominent and serious symptoms connected with fibroid growths of the uterus is hemorrhage. Certainly, every physician who has had any considerable degree of experience must have been convinced of the value of electricity, especially the constant current employed after the method of Apostoli, in the control of the hemorrhage which usually accompanies fibroid growths. That electricity is capable of controlling this hemorrhage, I think is generally admitted among gynecologists, even those who do not consider the remedy of value in relation to other symptoms.

That local applications of electricity are of value as a means of relieving the pain which frequently accompanies the development of uterine fibromata, is also equally well attested. In my own experience I have found it a very valuable measure.

Symptoms, such as the interference with the functions of the bladder and other adjacent organs are relieved in cases in which the growth is diminished in size and perhaps, also to some extent in other cases.

The general strength and nutrition of the patient are as a rule, I think, from my experience and that of others who have had an extensive use of this remedy, improved in a very marked degree under the influence of the galvanic current. This improvement may be due in part to the suppression of the hemorrhage, but I think it is in many cases due to the influence of the galvanic current upon the abdominal sympathetic. The great sympathetic centers, located in the abdomen, have charge of the most important processes of nutrition. These are incidentally brought under the influence of the galvanic current in the treatment of fibroids, and it is, I believe, very largely through this means that the patient's nutrition, blood quality and general strength are improved.

2 *What are the effects of electricity in relation to the growth and development of uterine fibroids?*—That the electrical current will arrest the growth of fibroid tumors is a question which is still contested by many gynecologists, but the statistics which have been published by Keith, Apostoli, Massey, the writer and various other electro-therapeutists, it seems to me, must be accepted as evidence that fibroid growths, at least in certain cases, may be arrested by proper applications of the constant current. In my own experience, arrest of the growth has been secured in 75 per cent. of the cases treated, and in 55 per cent. there has been a diminution in the size of the tumor. In a few cases the tumor has entirely disappeared, but usually, even in the most favorable cases, some small evidence of the tumor remains behind. I think this will be the rule, except in cases in which the treatment is applied near the menopause and continued long enough to secure a decided retrograde change in the tumor, when the treatment may be so thoroughly successful that the growth may be made to disappear entirely. I have seen this occur in two patients who remained but a few months under treatment.

3. *What kind of current shall be employed?*—I think there is at the present time no question among electro-therapeutists as to what form of current has the most decided effect upon uterine fibroids. I am certain that no experienced electro-therapeutist would think of employing any other than the constant current for the purpose of antagonizing the growth of a uterine fibroid. The effects required are such as can not be obtained from the faradic or any other form of current than the galvanic.

4. *What properties of the constant current are useful in its application to the treatment of uterine fibroids?*—This portion of the subject is one which, perhaps, requires more elucidation. I have made no original experiments which will enable me to throw any new light upon this part of the question. My own belief is that the electrolytic action of the current, the action which occurs in the vicinity of the electrodes, is that which is of the greatest service in the treatment of the class of morbid conditions under consideration. This belief has led me to employ in connection with my treatment a coulombmeter by the reading of which I obtain directly the measure of the actual amount of electrolytic work done. In experiments which I have made upon living rabbits and thick portions of fresh beefsteak, I find that there is a definite relation between the amount of work indicated by the coulombmeter and the work done in the tissues; but it is necessary, also, to take into consideration the indications of the milliampèremeter. I do not wish to be understood as saying that the same amount of work will be done by one milliampère of current in ten minutes, as will be done by ten milliampères in one minute; but I am sure more uniform dosage may be obtained by the employment of the coulombmeter in connection with the milliampèremeter than by the use of the milliampèremeter alone. It is possible to obtain the number of coulombmeters by multiplying the number of milliampères by the time of the application; but the coulombmeter saves the trouble of this computation, giving the results by direct reading.

5. *What is the action of the constant current when applied to fibroid growths of the uterus?*—It is evident that not only the tissues of the uterus, but all the other organs intervening between the electrodes are brought under the influence of the electrical current. But it is doubtless through the influence of the current upon the nerves, muscles and vascular structures of the uterus and the morbid growths connected with it that the beneficial results observed are obtained. Through the influence of the current upon the vaso-motor nerves, the current produces contraction of the arterioles such as is seen when it is applied to the skin, and thus diminishes the blood supply of the tumor and cuts off to some degree its nutrition. The motor nerves of the uterus are powerfully stimulated by the current, and this must also exercise some favorable influence upon the growth. The anesthetic effect of the positive pole, well recognized in electrical applications to other parts of the body, is here of great service in the relief of pain. The effect of mild galvanic applications is to increase muscular irritability. This is one of its physiologic effects. The large current necessary for the most satisfactory results in the treatment of these growths may have the effect to set up degenerative changes in the morbid structures of the growths.

I am convinced, however, that the most important effect of the current is that upon the vascular structures of the uterus. I have frequently noticed after the application of the current, especially when I employed a large quantity, as from 200 to 300 milliampères, that slight evidences of inflammatory reaction have appeared, as evidenced by increased tenderness, slight swelling and other evidence of a circumscribed phlebitis. In two or three such instances the phlebitis has extended to the vessels of one leg. In one case, that of a woman having a very large fibroid reaching two or three inches above the umbilicus, in which I applied a very strong current, probably about 350 milliampères, the patient became very ill and was confined to her bed for several weeks. Both limbs were enormously swollen with phlebitis. The patient had a high fever for several days and I despaired of her life; but she made a good recovery and at the end of three months the tumor had decreased greatly in size and at the present time, five years since the treatment was applied, the patient is hard at work every day in a laundry. She has been able to engage in this laborious employment for the last four years. I believe that the amount of blood supply is diminished by the succession of inflammatory processes set up in the vicinity of the internal electrode by means of which the vessels are plugged up and that this is the principal means by which the constant current is of use in the treatment of fibroid tumors.

6. *Contra-indications for the employment of electrolysis for uterine fibroids.*—According to my experience, electrolysis is

not properly applicable to the treatment of uterine fibroids in the following cases:

a. Rapidly growing tumors not accompanied by hemorrhage. These tumors are either fibro-cystic or soft edematous myomata; and experience shows that neither class is amenable to treatment by electrolysis. Soft edematous tumors are not benefited even by the removal of the appendages. Hysterectomy is the only remedy in these cases.

b. Rapidly growing tumors which make their appearance after the menopause, or which take on rapid growth at this period, are not favorably impressed by any mode of applying the constant current with which I am familiar; although Dr. Massey has reported some success by means of abdominal puncture.

c. In cases in which an ovarian cyst exists as a complication of uterine fibroids, the use of electricity is inadvisable, as it is likely to increase the growth of the cyst; and as an operation must ultimately be performed for the removal of the cyst, it is better to remove the appendages completely with the cyst, or perform hysterectomy, than to depend upon the uncertain and possibly injurious results of an application of the constant current.

d. The constant current is also of doubtful value in cases in which the uterine fibroid is complicated by serious disease of the appendages. In these cases, applications even of a very mild character are often followed by inflammatory reaction, so that the current can not be tolerated in doses of sufficient strength to accomplish positive results.

e. It is also evidently useless to continue applications of the current in cases in which no good results are obtained after thorough trial for several months. Some cases will prove rebellious to this, as well as to all other non-surgical measures of treatment. Such cases require removal of the appendages or hysterectomy. I have secured excellent results in a considerable number of such cases by the removal of the appendages only. I prefer this method to hysterectomy in cases in which it is applicable, but have performed hysterectomy in a considerable number of cases with satisfactory results.

f. I mention, lastly, still another class of cases in which I consider surgical measures preferable to the use of the constant current; namely, cases in which the patient is unable for any reason to submit to the use of the constant current for a sufficient length of time to secure satisfactory results. The patient may reside at a distance and be unable on account of poverty to remain under treatment for six months or a year, the shortest length of time in which any very marked results can reasonably be expected. In such cases, and in various other circumstances, I think the patient should be allowed to decide whether the slow and less certain, but also less dangerous, method of electrolysis shall be employed or the more radical, though also somewhat more hazardous surgical method.

7. *Methods of employing electricity in the treatment of uterine fibroids.*—The strength, polarity, time, frequency, duration, and after care are questions of great practical importance for consideration in the discussion of this subject. Briefly, my own experience is this as regards the strength of the current. I am inclined to use a current of less quantity than when I first began the employment of the constant current in the treatment of uterine fibroids. Instead of using 250 to 300 milliampères, I now ordinarily employ 100 to 200. My usual rule is to make the current as strong as the patient can bear without too great discomfort. I endeavor to lessen the pain, and hence increase the current by employing with the constant the sinusoidal current with very rapid alternations. As previously stated, I use a coulombmeter in connection with the milliampèremeter as a measure of the work done. If I use a weak current I make the application for a longer time, applying as a rule from 80 to 100 coulombs of current, sometimes more. A weak current does not produce so strong an effect as a strong current, even although the number of coulombs may be made the same in each case by increasing the time for which the weak current is used. On this account, I use a larger number of coulombs when I employ a weak current, so as to approximate as nearly as possible the results obtained by a stronger current. The coulombmeter is not, like the milliampèremeter, a necessity, but is a very convenient instrument.

I almost invariably employ the positive pole for the internal electrode, on account of its hemostatic properties. One of the greatest drawbacks in these cases is the fact that at the beginning hemorrhage or menorrhagia is frequently excited, resulting in the discouragement of the patient and interference with the treatment. The positive pole may be slower in its action, but it is certainly less painful, and its use is more convenient than the use of the negative pole.

As regards the time of the application, I give little attention to the matter of time. As I have said, the amount of work done, as indicated by the coulombmeter, gives more useful information than any timepiece can give.

The frequency of the application must be regulated by the patient's toleration of the treatment. My usual practice is to make the application once or twice a week—rarely more than twice, and frequently but once.

The duration of the treatment is necessarily long. I have never been able to continue the treatment more than a year in any case. Dr. Apostoli reports success in cases after three years of treatment. I have seldom been able to continue treatment more than four to eight months, as my patients are almost all from a distance, so that I can not keep them under treatment for an indefinite length of time. I usually see decided indications of improvement after three to six months' treatment.

The after care in these cases is a matter which, in my opinion, receives too little attention. My usual custom is to give the application in the afternoon or evening and then send the patient to bed with instruction to remain twenty-four hours, or even forty-eight hours if there is any tendency to inflammatory reaction. Immediately after the application the patient receives a vaginal douche consisting of boiled water or a solution of bichlorid 1 to 10,000. The day following the application, two or three vaginal douches are administered. In case of painful symptoms, fomentations over the lower abdomen or a hot hip pack is applied. If there is a tendency to flowing, the alum vaginal pack, or packing the vagina with equal parts of alum and subcarbonate of bismuth is employed.

I tabulated a year or two ago the results of sixty-two cases. I found that 82 per cent. were very greatly benefited. Seventy-five per cent. of the entire number were symptomatically cured. In 55 per cent. the tumors were reduced; and in 14 per cent. the tumors disappeared entirely. In the cases in which the tumors disappeared, the growths were interstitial or submucous, and were in most cases small or moderate in size. A study of my cases led me to observe a marked difference in the results obtained in the different classes of fibroid tumors according as they were subperitoneal, submucous, or interstitial in character. In all the cases in which the tumors were greatly reduced in size or disappeared entirely, the growths were submucous or interstitial in character.

Another condition which favors good results in the treatment is the approach of the menopause. In my experience, the treatment unquestionably hastened the development of the menopause. My personal belief is that the constant current operates as a curative agent in these cases in precisely the same manner as does the menopause; namely, by causing shrinking of the blood vessels, thus cutting off the nutritive supply of the growth. The cicatricial tissue formed as the result of the repeated applications of the current closes up the small vessels, in this respect operating as does the retrograde change by which a withering of all the blood vessels of the uterus and appendages takes place at the menopause.

Dr. Felice La Torre. Privat-docent in Obstetrics at the University of Rome and member of the Society of Obstetrics and Gynecology of Paris, sent a contribution to the discussion which was read by the Secretary,

ON THE ACTION OF ELECTRICITY ON UTERINE FIBROMATA.

To establish in an exact manner, in the present state of our knowledge, the action of electricity on uterine fibromata, is in my opinion a problem whose solution is rather difficult; for we do not know yet in what the current consists, and what the electric phenomena are that it produces on the tissues. Nevertheless, since in these later times certain modifications in the tissues by means of the galvanic current (Apostoli's method) have been determined we may, however, by analogy, arrive at some hypotheses.

In reference to this, the American Electro-Therapeutic Association has done well to put on the program of their discussions, the action of electricity on uterine fibromata.

I am not just now in the best condition to take part in the debate, being absent from Rome; if I permit myself to do it by this paper it is to respond to the amiable and flattering invitation of our illustrious President to whom I tender my heartfelt thanks, and to submit to the Congress a new point of view in the study of the action of electricity on uterine fibromata.

The effects of electrical treatment of uterine fibromata

manifest themselves in two ways: 1, arrest of hemorrhage —an effect almost constant; 2, diminution in size of tumor —rare effect. How does this happen?

Every one knows that the action of the continued current is threefold, viz: polar, interpolar and extrapolar action. We understand each other as regards the signification of these terms; I shall not dwell on it. The extrapolar action has no direct influence on the fibromata; I do not take this into account here.

Let us now see what the principal modifications are from the polar and interpolar action on the tissues, and how they exert their influence in the arrest of hemorrhage and in the reduction of the fibroid tumor.

I. *Polar Action.*—One can say in general that the result of the polar action of the continued current, positive pole, according to the researches of Ciniselli, Klein, J. Parson, Villes, Apostoli, Piccinini, MacGinnis, La Torre, etc., is as follows:

a. A chemic caustic action with hard eschar.

b. An alteration (sclerotic at positive pole, imbibition at negative) a macroscopic and microscopic alteration of the tissues in general and of the vessels and blood in particular.

c. An energetic contraction of the uterine muscle.

2. *Interpolar Action.*—This exists, as shown by the experiments of Ciniselli, Dorsey, Shaw, Steavenson, Willis, Witte, Decio, etc. We have:

3. *Its Electrotonic Action.*—Exaggerated function—circulation and nutritive processes with increased activity.

4. *Its Cataphoric Action.*—Transmission of substances from the positive to the negative pole.

5. *Its Catolytic Action.*—Decomposition of complex bodies into their constituent elements.

We can from this conceive how the hemostatic effect of the galvanic current may be sought for in the polar action of the positive pole, and the reducing effect in the interpolar action aided by the polar action.

In what way does the polar action arrest hemorrhage?

In the beginning, it was thought that it was the galvano-caustic eschar which arrested the hemorrhage, but no one thinks it any longer; especially when the case is that of a large uterus where the cauterization is limited to a small surface. This is true in so far as arrest of hemorrhage has been obtained without introducing the electrode into the cavity of the uterus, by simply resting it against the cervix. I have had a few of these cases. It is evident that in these cases there is no question of intra-uterine chemico-cauterization and eschar.

On the contrary, it is much more probable that the arrest of hemorrhage is due to the contraction of the muscular elements. We know, in fact, that the continued current causes contraction of muscular fiber more easily than any other form of electrization, and that the unstriped fibers respond more promptly than the striped. In favor of these facts is the frequent expulsion of polypi from the uterine cavity after application of the continued current. Now the continued current causes the muscular fibers to contract energetically in every direction, thus compressing the vessels which penetrate the uterine walls transversely and in this way hindering an abundant afflux of blood to the organ whence the arrest of the flow.

In what way does the interpolar action reduce the fibroma?

This is a more difficult question, but I shall try to note the principal points. I shall not mention in this case all the opinions and all the theories advanced; I shall only touch upon the most plausible of these.

Milne Murray believes that the vessels of the capsule of the fibroma lose their function, whether by the interpolar action or by the polar contraction as well; the tumor consequently deprived of its nutrition must necessarily begin a regressive course.

Shaw, having observed that in some fibromata, subjected for a long time to electrical treatment, the weight diminished at the same time that the quantity of albuminous substances increased, believes that the current acts by producing direct electrolytic modification in the tissues of the tumor and still more in the liquids of the tumor.

Willis E. Ford believes also that it is in the liquids of the tumor, in the interpolar space, that the principal modifications take place; these are supposed to be chemic decompositions, resolution of complex bodies into others more simple, and to the elimination of products of these decompositions could be attributed probably, certain general disorders of the patients subjected to electrical treatment.

Ciniselli, on the other hand, finds it probable that the current produces a permanent modification on the nutrition of the tumors. This hypothesis is proved by the fact that there is found in the urine of patients treated by the galvanic current a greater quantity of sediments after the treatment than before, and an increase in the specific gravity.

These were the theories until quite recently, when Decio of Milan, in a remarkable work: "The Galvanic Current in the Cure of Uterine Fibro-Myomata" (*Annali di ost. e di gin. Milano*, 1893, No. 3 e 4), offered a new theory which seems to me quite plausible, studying from a new point of view the reducible power of fibromata. He believes one of the modifications to be a disturbance in the molecular interchange, due without doubt to electrolytic phenomena; that is, to certain special movements of molecular interchange among the elements. In what this consists is not yet well known, but an approximate idea is given by the theory of Grotthus, on liquids subjected to electrolytic interpolation. Now it is precisely in these disturbances in the molecular interchange of the elements of the tumor that Decio finds a new cause of atrophy of the fibromata. He has in fact found in the urine of women with uterine fibromata, submitted to electrical treatment (Apostoli's method) a constant peptonuria, and in direct proportion with the diminution in size of the fibromata. Decio finds this analogous to that which takes place in puerperal peptonuria. And in fact we find that the transformation of the albuminoid substance of the uterine muscle into peptone after labor is always *pari passu*, with the regressive process of involution of the uterus. It is, reasoning thus, precisely in a rapid absorption of this soluble product and in a successive elimination by the kidneys, that we find the cause of the reduction in size of the uterus the first days of the postpartum state. Besides this regressive movement of involution, Fischel attaches great importance to uterine contractions; these destroy by their rapid succession the cellular elements; it is these which by their compression of the nutritive vessels diminish the afflux of oxygenated protoplasm; it is these, finally, which hasten the metamorphosis of the proteid substances of the uterine parenchyma.

According to Fischel, it is especially to the slight uterine contractions during pregnancy that we may attribute the transient peptonuria of some pregnant women.

Now we have the same compression with the same effects in the fibromatous uteri submitted to the action of the galvanic current.

We have, then, the same causes and the same effects in the regressive changes of the puerperal uterus as in the myomatous uterus. Here we have a physiologic peptonuria. Decio says: "Here an artificial, electrical peptonuria." Decio has moreover observed that the electrical peptonuria was very manifest in cases of large tumors which had a great tendency to regressive metamorphosis; that the peptonuria was little or none where the regressive process of the tumor was doubtful, and that it was lacking altogether in the case of small uteri; a fact which he explains by the small quantity of elements causing either no peptonuria or very little. This fact has still another analogy, viz.: That the puerperal peptonuria is very insignificant or nothing at all in abortions or premature deliveries; this Truzzi explains by the moderate development of the uterine parenchyma and by the small contractile power at the moment of delivery.

Decio, then, having his views on the increase of soluble albuminous substances found by Shaw, considers that, as a result of special chemic modifications caused by the current (as Willis E. Ford has also shown by experiments on nutritive fluids), there can be a partial transformation of these juices into peptone, which, penetrating into the circulatory current—herein aided by uterine contractions—shows itself in the urine. Hence, evidently, the reduction of the fibroma.

This is a theory which I find very plausible.

Wishing to draw a conclusion, after what I have just said, we can say with much probability that electrical treatment acts on fibromata in two ways. We have:

1. The energetic contraction of the uterus under the positive polar action of the continued current, which, producing a compression of the organ, hinders an abundant afflux of blood and arrests the hemorrhage.

2. Special chemic modifications in the tissues, disturbance in the molecular interchange among the elements of the tumor under the interpolar action of electricity, causing a transformation of nutritive juices into peptones or into other sediments which are absorbed and eliminated by the kidneys, whence the atrophy and reduction of the fibromatous tumor.

(*To be continued.*)

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SATURDAY, APRIL 14, 1894.

"CHARTERED BY THE STATE."

One of the most interesting sections of the report on medical education by the Illinois State Board of Health is that concerning fraudulent medical institutions, some excerpts from which have already been given in the JOURNAL.[1] The history of these "diploma mills" furnishes a pretty conclusive argument for reform in the legislation which empowers any three or more individuals, who can "put up" between them the sum of three dollars with the Secretary of State, to flock together, start a "college" or "university" and confer degrees in medicine and issue diplomas with or without other consideration than that *ad pecuniam*.

The report furnishes the data of some fifty fraudulent diploma-selling concerns that have been started in the United States since 1833. Of this number twenty-nine have become extinct through agencies among which the Illinois Board itself has been one of the most effective, although the Board admits with some chagrin that it has been less successful in Illinois than in other States in breaking up these institutions "chartered by the State."

Its investigation and exposure in 1882, of a batch of four Boston concerns which were selling medical diplomas for $50 each, "C. O. D.," is a notable instance of the work of the Board in this direction. These concerns were organized and operated under Massachusetts legislation, similar to that of Illinois, for the incorporation of associations, universities, colleges and academies "for charitable, educational and other purposes;" and one of their most valued trade-marks was the legend, "Chartered by the State." As a result of the work of the Illinois Board and the publicity attendant thereon the Massachusetts Legislature passed an act, May 30, 1883, forbidding such incorporations from conferring medical degrees and issuing medical diplomas without special authorization from the General Assembly, and the sanction of the commonwealth has thus been withdrawn from the "diploma mills" of Massachusetts.

They still, however, continue to be chartered by the State of Illinois—as witness the "Malok brood," the Harkins' "universities" and other "colleges" and "institutes" started in Chicago during the last half-dozen years.

Early in the existence of the Illinois Board a protest was entered with the Secretary of State against the further issue of charters to this class of institutions and a demand was made for the revocation of those in existence upon proof of the fraudulent nature of the operations thereunder. The reply was, in substance, a request to be informed what the Board was going to do about it—that the law provided for the issue of the charter upon the payment of the fee, and if the Board did not like it, it had better get the law changed. Whereupon the Board asked the Legislature to except from the act concerning corporations the incorporation of medical colleges and institutions, even as corporations for banking purposes, the insurance business, the operation of railroads, real estate brokerage and the business of loaning money were excepted. But the law of 1872 still stands on the statute books and the Maloks and the Harkinses profit by it.

In the latter part of the last century the Supreme Court of Pennsylvania was empowered by the General Assembly of that State to issue certificates of incorporation to organizations for charitable, benevolent or educational purposes. But when, some forty years later, an application was made for a certificate of incorporation for a medical college, the Court refused to issue the certificate on the broad ground that the General Assembly could not have contemplated putting into the hands of a bench of lawyers the power to determine the qualifications of a faculty of teachers of medicine. And the wise and witty judge who delivered the opinion of the Court took occasion to point out that, to act upon the assumption that the General Assembly, in empowering the Court to issue certificates of incorporation, intended that any three men in any town of the State, however illiterate or irresponsible, might organize and demand of the Court a certificate—in effect, a charter—under which they might flood the State with medical diplomas, would be to place the degree of Doctor of Medicine in a situation similar to that which a celebrated Minister of France once threatened as to another kind of title—namely: That he would "create so many dukes that, while it would be no honor to be a duke, it would be no shame not to be a duke."

In the closing years of the nineteenth century a single State officer—not necessarily even a lawyer—

[1] JOURNAL AMERICAN MEDICAL ASSOCIATION, March 31, 1894.

is, apparently, accounted wiser by many State Legislatures than the entire Supreme Bench of Pennsylvania deemed itself fifty years ago.

STATE CARE OF THE INSANE IN NEW YORK.

On Oct. 1, 1893, the new system, known as "the State care" system, went into operation, by the assumption on the part of the State Commission in Lunacy, of the financial responsibility of caring for 8,700 insane poor. This number is about half the total poor insane in the State; there are 8,800 others supported in the asylums of New York and Kings Counties. An editorial paragraph in the New York *Tribune* sums up the present condition of these latter asylums in the following terms:

"The management of the New York asylums has always been excellent, and there is no pressing need of the transfer of the institutions to the State. In Kings County the institutions have been brought under political influence, and their management has been fraught with incompetence and scandal. The asylums at St. Johnland and Flatbush ought to be turned over to the State. The insane patients would receive more scientific treatment and more humane care; and a heavy financial burden now borne exclusively by Brooklyn taxpayers would be distributed among the counties."

These remarks indicate a true diagnosis and prognosis in respect of asylum management. There are already indications, on the part of certain "ring" politicians in Kings County, that the insane poor of that region will be passed over to the care of the State Commission, provided that the sums of money that have lately been expended on certain large asylum buildings in Suffolk County, can be repaid by the State. The insane poor would probably hail the change of custodians, if they could vote on the question, inasmuch as their dietary has been such that not a few of their number have been patient, under attacks of scurvy as well as under mental alienation.

A long letter from Albany, in the newspaper above named, states that the question of dietary of the insane is a foremost one, at the present time, with the State Commission. To this end, DR. AUSTIN FLINT has been invited to frame a "generous diet" for the State's 8,000 lunatics. The first recommendation of DR. FLINT was the almost unheard-of suggestion—in any State charity or "pauper" institution—to get good cooks for each and every asylum. DR. FLINT takes the position that good cooking subserves the physical welfare of the sick, not only, but also the pocket-book of the administration. "A good cook," says he, "is an important element in economical management." He then narrates some of his earlier experience in relation to the public institutions of New York City:

"In 1867 I was appointed by the Commissioners of Public Charities and Correction of the City of New York, to inspect the methods of cooking and serving food to the inmates, numbering then more than 10,000, of the institutions under their charge. After a careful inspection, as requested, I proposed certain changes in the dietaries, and at my suggestion an accomplished professional cook, at a liberal salary, was put in charge of the kitchens at Bellevue Hospital. As a result of this, not only did the cook save to the institution the sum of his salary, but the cost of maintenance of the patients per capita was materially reduced. At that time the number of patients in Bellevue Hospital was between 500 and 600. I suggest at the beginning that a thoroughly competent male cook be put in charge of the kitchens in all institutions with 500 or more inmates, and that he be required to personally supervise all the cooking, and not the cooking for the medical staff only. While it may be proper to provide for ordinary paupers and criminals little more than enough to keep them in fair physical condition, the insane poor, though a charge upon the State, should receive better consideration. Again, a most important part of the treatment of the insane relates to general nutrition, and many patients suffering from mental diseases require a great abundance of nutritious food, which contributes very largely to their cure, and thereby tends to relieve the State from their care and maintenance for a long period."

Writing in the line of this suggestion, DR. FLINT recommended the following quantities of supplies for 100 persons for thirty days:

Meat with bone, including salt meat, fresh and salted fish, and poultry (lb)	2,250
Flour (may be in part substituted by cornmeal and maccaroni) (lb)	3,000
Potatoes (lb)	1,500
Milk (quarts)	750
Eggs (dozen)	493
Sugar (lb)	429
Butter (lb)	429
Cheese (lb)	429
Rice (lb)	108
Hominy (lb)	108
Oatmeal (lb)	108
Coffee	215
Tea (lb)	26

The large purchases of food-stuffs to support a population of nearly 9,000 souls, will enable the Commission to obtain very low rates. The asylums, for example, will consume 6,000 barrels of flour and 250 tons of sugar in a year. The Commission aims to supply the same quality and relative quantity to the inmates of each hospital—whereas under the old system there were frequent departures from impartial treatment, at least, so it has been charged.

The Commissioners report that for the month of October they have effected an aggregate cutting down of the estimates of the trustees of the various asylums by $55,000, and for November $35,000. The inmates of the asylums will make all their own clothing. The inmates of New York's asylum on Blackwell's Island do so, and it is perfectly feasible in all the State hospitals. All farm work also ought to be done by the inmates of the hospitals. It will be good for the health of the patients to have them work out of doors. All the vegetables and farm products, hay and the like, thus can be raised by the inmates of the hospitals, and large sums saved. The inmates of the hospitals also ought to make the mattresses of these institutions, and by degrees these mattresses, made of hair, will be substituted for the old straw ones.

One of the novel features of the new *regimé* will be the discontinuance of the tobacco ration. On this subject DR. MACDONALD is reported as saying:

"It is highly unwise to give insane patients, who are a peculiarly nervous class of people, tobacco either to chew or to smoke. We found upon investigation that the supplying of tobacco to the inmates of the hospitals was costing the State the large sum of $15,000 annually. But that was not the worst of it; the health of the patients is seriously affected, and when smoking is permitted there is danger of fire. One hospital has had four fires in the last year, all, there is reason to think, the result of tobacco. Why, on Ward's Island there are 2,000 men patients who have not used tobacco in any form since 1877, and they are in excellent health. We

have, therefore, refused to allow any money in the hospital estimates for the use of tobacco."

A great saving has been made by cutting off a long dead-head "family" list, by reducing the equestrian stock, and by dismissing fancy help. One institution formerly governed by four florists, now must get along with one only. The amount of the current appropriation for the State insane is $1,300,000, all of which must be strictly accounted for by the three Commissioners, at the head of whom is Dr. Carlos F. MacDonald. The hospital trustees are not permitted to spend a dollar without estimate and consent, and all expenditures must be submitted monthly for audit.

The unfortunate lunatics will, under the new *regime*, have a more generous diet—minus the nicotine element—with a greater amount of that occupational exercise that is salutary to the mind diseased. The work in which the State Commission is engaged is one worthy the best minds of the State, and we would feel more hopeful of good results if another medical man had a place on the Commission.

MEDICAL EXAMINING AND LICENSING BOARDS.

The next annual meeting of the National Conference of State Medical Examining and Licensing Boards will be held in the city of San Francisco, June 5, 1894, during the session of the American Medical Association. Dr. Charles K. Cole, of Helena, Mont., the Secretary of the Conference, has issued a circular calling for reports on the various subjects with which these Boards are concerned, and proposes to tabulate and present to the Conference the information received in continuation of the work in this connection previously done by the late Dr. Rauch, the founder of the Conference and its President at the time of his death.

Each Board is asked to report the period of its existence; the number of candidates examined during such period, by years, and the number passed and furnished license to practice; its organization with reference to schools of practice; its judgment upon the advantages and disadvantages of mixed Boards and of separate Boards for each school of practice—regular, "homeopathic," "eclectic;" its judgment as to the number of members which should constitute a Board and the proper appointing power; "should teachers in medical schools be eligible to membership on State Examining Boards?" Should certificates be interchanged between State Boards? The leading defects in the laws concerning such Boards; the requirements as to period of study and curriculum which should entitle colleges to recognition as in "good standing" for purposes of registration; the litigation had by the Board and its results; the number of practitioners in the State, by schools of practice, in the Army, Navy and Marine-Hospital Services, and those practicing illegally; all legislation concerning medical practice within the jurisdiction of the Board.

This list of subjects embraces many of direct interest to every member of the profession, and the session of the Conference is likely to attract attention.

VITAL STATISTICS IN NORTH CAROLINA.

Dr. R. H. Lewis, of Raleigh, Secretary of his State Board of Health, is earnestly engaged in promoting an improved system of vital registration in North Carolina. The last *Bulletin* contains his statement regarding the chief obstacles in the way of the proper collection of statistics in the rural and urban populations under his charge. We quote a portion of his article:

"One of the most important functions of a sanitary bureau is the collection of vital statistics. Section six of our law says: 'Monthly returns of vital statistics, upon a plan to be made by the State Board of Health, or their Secretary acting under their instructions, shall be made by the County Superintendent to the Secretary of the State Board.' The plan devised by the late Secretary, the lamented Dr. Wood, and still in vogue as the best available, is not calculated to secure complete and accurate statistics, but merely a general idea of the prevalence of particular diseases, especially those of a communicable character, in the counties, and the number and causes of death in the cities and towns. Indeed, the conditions with us are such—an extremely conservative and rather sparsely settled rural population in the main—that obtaining reliable statistics from the State at large is simply out of the question at present and we fear will be for many years to come. And yet it is of peculiar importance to our State, inasmuch as immigration is greatly desired, that we should have accurate and reliable statistics, especially in mortuary matters.

"Even in cities and towns it is not possible to obtain full and reliable mortuary statistics except under a strict enforcement of ordinances imposing a decided penalty for the burial or removal from the corporate limits, of a dead body except upon a burial permit issued by a designated official, based upon a death certificate, giving, chief among other things, the cause of death signed by the attending physician, or cases where there was no attending physician, by the nearest friend, and sworn to by him before a magistrate. The authorities should impress this ordinance particularly upon the undertakers in such a manner as to effectually prevent their undertaking the preparations for burial until the burial permit is produced. Something less than a year ago we sent to every town in the State having five hundred or more inhabitants, and to all county-seats of less population, a model ordinance with sample blanks, in which the regulations suggested above were set forth, in the hope that it might be generally adopted and mortuary statistics collected in every place on the same plan. While only two towns have formally adopted the ordinance as a whole, a number have it essentially, and the statistics sent in we believe to be generally reliable. But we can not help feeling when we note a death rate very much smaller in one town than in another of about the same sanitary conditions, that the former either has an imperfect ordinance or does not enforce a good one. We are not willing to admit, that any municipality would deliberately 'fudge,' as we used to say in marbles, on its sisters.

"We have brought forward this subject because of its importance and in the hope that those of our readers living in cities and towns will interest themselves in the matter sufficiently to inquire as to the ordinance on the subject and as to the enforcement of the same. The display of such an interest on the part of the medical men of any city or town would surely have its effect upon the authorities and make for the perfecting of the returns."

Whatever of influence this Journal may have with the medical men of the "old North State" is unhesitatingly thrown in favor of the difficult but necessary task that has been assumed by Dr. Lewis. We trust he will be heartily supported.

WHAT ARE PRIVILEGED COMMUNICATIONS?

At common law, confidential communications made by a patient to a physician are not privileged. By statute they are, however, rendered otherwise in most of the States. In Indiana, for example, physicians are prohibited from testifying as to matter communicated to them, as such, by patients, in the course of their professional business, or advice given in such cases. With this for a basis, the Supreme Court of Indiana has, in the case of Springer v. Byram, decided Feb. 15, 1894, examined quite a number of authorities and summarized the law as follows: The privilege may attach, notwithstanding the presence of third persons in the sick-room, where the consultation is had. If the attending physician calls in another physician for consultation, the communications made to the latter are privileged. Where there are two physicians, the patient does not, by calling one of his physicians as a witness, waive his privilege to object to the testimony of the other. Communications made by a patient to his physician, for the purpose of professional aid and advice, are privileged, because intended to be private and confidential, and can never be divulged without the consent of the patient; it being the privilege of the patient, and not of the physician. The privilege of exemption from testifying to declarations made and facts actually known is extended to a physician who derives his knowledge from the communications of a patient who applies and makes disclosures to him in his professional character. The immunity extends to all such facts, whether learned directly from the patient, or acquired by the physician through his own observation or examination. Neither can disclosures be made by other persons whose intervention is strictly necessary to enable the parties to communicate with each other. But if parties sustaining confidential relations to each other hold their conversation in the presence and hearing of third persons, whether they be necessarily present as officers, or indifferent bystanders, such third persons are not prohibited from testifying as to what they heard. Thus, the court holds, in this case, that persons in charge of an ambulance sent by a stranger to take an injured party home after an accident, are not forbidden to testify as to what such party then said to a physician as to the cause of the accident.

CORRESPONDENCE.

Proposed Revision of the Code of Ethics of the American Medical Association—Report of the Committee on Revision.

To the Editor:—After more than ten months of the year have passed since the last annual meeting of the American Medical Association, the majority of the Committee appointed nearly two years since to inquire whether any revision of the Code of Medical Ethics was desirable, have made their report in the Journal of the Association of the 7th inst. As less than half of the State and Territorial medical societies will have regular meetings between this time and the meeting of the Association in San Francisco, it is apparent that no proper consideration can be given to this report by the several State medical societies for the purpose of instructing their delegates regarding it, as was contemplated by action taken at the annual meeting in Milwaukee. And but few readers of the Journal will fully comprehend the changes contained in the revised Code and their real import, unless they read it in direct comparison with the present Code, item by item. For the majority of the Committee, instead of pointing out such sections or parts of the Code as they deemed wrong or defective, and presenting such substitutes as they believed necessary, as such committees usually do, have simply re-written the whole Code, preserving so much of the language of the present Code as to make the casual reader think that no very important or radical changes had been made in the revised document.

A closer examination, however, will show that by silently omitting several whole sections relating to some topics; dropping a word here and a line there from other sections, and introducing new sections ostensibly for better covering the so-called progressive changes in the profession itself, the Committee have placed their revised Code on a radically different basis, and have so constructed some of its details as to violate the plainest principles of equality and justice. The character of the revised Code plainly shows that its authors have had for their chief objects: 1, the elimination from the Code of every item that tended to make a distinction between regular and irregular practice, between modern scientific medical education and the metaphysical dogmas of past centuries; 2, the careful introduction and recognition of class distinctions in the profession; and 3, the actual substitution of the license from some board or tribunal *legally* authorized to grant it, in the place of a *regular* medical education, as the test of recognition, both in consultation and professional fellowship.

In the work of *elimination*, the majority of the Committee have entirely omitted the sections relating to the "obligations of patients to their physicians" and of the "public to the profession;" and also of Sections 2 and 3 under the head of "Duties for the Support of Professional Character." By these omissions they have destroyed the completeness of the Code, for it is just as important for the physician to know what are the just obligations of his patients to him, as it is to know his obligations to his patients.

And if it is important that the members of the profession should be taught their obligations to the public, they should be equally informed of the just obligations of the public to them. It is no just excuse for these omissions to say that the Code was not intended for the perusal of patients or the public, for it was really intended for both; and if physicians were more diligent in placing copies of the Code in the hands of their more intelligent patrons it would greatly benefit all parties. By omitting from the Article on "Duties for the Support of Professional Character," Section 3, they have erased from the Code the only rule directly enjoining a high standard of moral excellence and purity of character on the part of the physician; a rule which in substance, first appeared in the celebrated oath of Hippocrates and has been retained in every code of ethics since. If, as is said in the "Proem" or Introduction to the revised Code, "Ethics is that science which treats of human actions and mental affections considered as virtuous or vicious, right or wrong," why omit from a code of ethics all precepts relating to the maintenance of a noble, vir-

tuous and temperate life as essential to a truly successful professional career?

Under the same heading, "Duties for the Support of Professional Character," the revised Code reproduces as Section 2, Section 4, of the present Code in full as follows: "It is derogatory to the dignity of the profession to resort to public advertisements or private cards or handbills inviting the attention of individuals affected with particular diseases—publicly offering advice and medicine to the poor gratis, or promising cures; or to publish cases and operations in daily prints, or suffer such publications to be made; to invite laymen to be present at operations, to boast of cures and remedies, to adduce certificates of skill and success, or to perform any other similar acts. These are the ordinary practices of empirics, and are highly reprehensible in physicians." But to this well-recognized section the revising Committee make the following remarkable addition: "It shall not be considered as a violation of the spirit of this section, however, for physicians engaged in the work of medical education, either singly or associated in colleges, or for physicians practicing in hospitals, whether private or public, general or special, to announce the fact or allow it to be announced to the profession in the advertising pages of strictly medical journals, or for physicians devoting special attention to one of the recognized special departments of medical practice to *note* the fact on their *signs* or *private cards*." Read in plain direct language, this means that every physician who claims to give "*special attention*" to some particular class of diseases may "invite the attention" of those affected by such diseases by advertising the same on his door plate, sign board, and private cards as much as he pleases, while the first half of the section makes the doing of the same thing by the general practitioner not only "derogatory to the *dignity* of the profession," but "highly reprehensible." Will the members of the Committee of Revision inform us on which of the "eternal principles of justice" alluded to in their "Proem" this distinction is founded? The next section, which relates to the holding of *patents* is so far emasculated as to make it prohibit only the holding of patents for *secret nostrums*.

By omitting all mention of surgical instruments and appliances, and also of the prescribing of secret nostrums, the inference necessarily follows that if this Revised Code should be adopted it would be no longer "derogatory to professional character" to hold patents for all kinds of instruments and appliances used in medical and surgical practice, and to prescribe secret nostrums and trade-mark medicines, *ad libitum*. Surely this would be progress, but in what direction—that of science and honor, or that of mammon and dishonor?

It was doubtless the same train of thought leading to the proposed changes in the two sections last noticed, that prompted the Committee to introduce into the Revised Code a new chapter on "Special Departments in Medical Practice," with three Articles: 1, on the Necessity for Specialties; 2, on the Education of Specialists; and 3, on Specialists as Consultants.

Under the first head, the necessity for specialists is made to rest on the broad assertion that "the field of medical knowledge is now so vast that no one mind can compass it in all its details. Nor can any one hand attain the dexterity essential for the successful performance of all the delicate and daring operations of modern surgery." And it is added that, "*differentiation* in study and labor of whatever kind is the test of civilization." Yet in the very next Article, on the education of the specialist, it is stated that they must not "omit one jot or one tittle, either of the preliminary or the technical education insisted upon as essential for the physician," and consequently "specialists should not be something less than general practitioners, but general practitioners and *something more*." In other words, the present field of medical knowledge is so vast that no one mind can compass it, and therefore differentiation in study and labor, the very test of civilization, necessitates division into specialties; nevertheless, the specialists must not differentiate or abate one jot or one tittle, but barbarously struggle to cover the whole field, that they may be "general practitioners and something more." That is something more than the whole. What kind of philosophy or logic is this?

In the third Article of this remarkable chapter it is declared to be "the obvious duty of general practitioners, when cases come under their care for the successful management of which they have not had the requisite training, or do not possess the necessary facilities and appliances, to recommend and introduce such cases to a competent and reputable specialist, and thus prevent them from drifting into the hands of charlatans." Now is it not equally the "obvious duty" of the specialists, when cases come to them not embraced in their specialty, to recommend and introduce such cases to a reputable general practitioner, and if so, why not incorporate it in the Code? Why put the ethical injunctions all on one side? Is there not the same danger that the unfortunate patients might drift into the hands of charlatans in the one case as in the other? Perhaps, however, the members of the Committee regarded every case safe that reached the hands of a specialist, inasmuch as they had declared him to be both "general practitioner" and specialist or "something more." If it is really desirable to introduce into the Code any mention of particular grades or classes of practitioners, instead of this illogical chapter, the Committee on revision might have properly incorporated the substance of the resolutions adopted by the Association in 1869, which simply declare that specialties are "recognized as proper and legitimate fields of labor," and that "specialists shall be governed by the same rules of ethics and professional etiquette as have been laid down for general practitioners." This would have kept the Code in harmony with, instead of in violation of, that "eternal principle of justice" which accords to every member of a profession equal rights and privileges.

But the climax of degradation is reached in this Revised Code in its Chapter II, Article II, Of Consultations, Section 2, where it is declared that, "a thorough education, preliminary, scientific and technical, furnishes the only presumptive evidence of professional abilities and acquirements, and ought to be the only acknowledged right of an individual to the exercise and honors of his profession. Nevertheless, as in consultations the good of the patient is the sole object in view, and as this is often dependent on personal confidence, no intelligent practitioner, who has a *license* to practice from some medical board of known and acknowledged *legal authority*, and who is in good moral and professional standing in the place where he resides, should be refused consultation, when it is requested by the patient." Here, after the usual flourish about "a thorough education," etc., we have a complete abandonment of the authority of the profession to decide what shall be the character and qualifications of those who are to be recognized in consultations and fellowship, and its transference to *any medical board* of known "*legal authority*," to grant a license to practice.

This is done by simply omitting from the corresponding section in the present Code the word "*regular*" at its beginning, and from between the words, "intelligent," and "practitioner" further on; and the omission of the words, "recognized by the Association," directly following the words, "acknowledged legal authority." Also the omission of all of the last paragraph of the section as it is in the present Code. By these omissions they have removed from this Revised Code, every vestige of authority for the profession to

decide what shall be the education and qualification of those who are to be admitted to its own fellowship and consultation, and have given that authority directly to an indefinite number of medical schools and medical boards of every *ic* and *ism*, regular,homeopathic,eclectic,physiopathic,etc.,all possessing "acknowledged *legal authority*" to grant degrees or licenses. Consequently no one holding a license from any of these sources should be refused consultation and fellowship by the members of a great and beneficent profession. Yet it is well known that there is scarcely a medical impostor or charlatan in the country who does not hold a license or diploma from some one of these schools or boards having legal authority to grant the same.

It seems to me the learned and highly esteemed members of the profession who constitute the majority of the Committee on Revision of the Code, in their anxiety to free the Code from all allusions to regular or irregular practice, to genuine or bogus systems of medical education, and to ethically recognize special privileges for specialists, have so far obscured their own mental vision with an almost tiresome protestation in favor of "education, preliminary, scientific and technical," that they have not clearly seen the abyss of incongruities into which they have drifted. If the time ever comes when each State shall have only one board of medical examiners, before which all candidates for admission into the profession shall be examined on all branches alike, and with substantial uniformity in their standards, it will then be easy to adjust the details of the Code to the *legal requirements*. But until that time does come it is hoped that the great body of the medical profession in this country will adhere to the present Code, which has met with the unqualified approval of the profession of all other enlightened countries. And even then let those who are on the stage of action be careful to make the changed conditions or relations of the profession conform ethically to the "eternal principles of justice," instead of trying to make the "eternal principles of justice" conform to the professional requirements.

Yours truly, N. S. Davis.

Chicago, Ill., April 9, 1894.

In Favor of the Old Code.

To the Editor:—If there were any argument required to prove that the Code as it now stands is a masterpiece in dignified statement of what constitutes professional conduct, that argument in most convincing power would be furnished by placing the alleged "old," "obsolete," Code side by side with the productions of the would-be revisers of it.

The Code has been sneered at as a meaningless wordy-make-up hundreds of times, and yet somehow, notwithstanding that it is meaningless, just as soon as a man does an unprofessional thing the old Code tells him of it. The Code appeals to the highest principles in man. Anything which antagonizes the Code is something which is of a lower order than the highest principles in man. Mr. Editor, there are a great many men in the world who enjoy being members of an honorable profession, and who never do anything toward maintaining the honor of the profession. These men are anxious to share in the profits, financial profits too, which such an organization carries with it, and if you have never done so before, turn to the proposed revision as published in the last Journal, and see how "carefully" the old Code has been "studied," along lines which affect consultation fees.

It will be vastly more to the honor of the profession to throw the Code overboard and openly indorse tomfoolery and quackery, than to do the humiliating thing of subscribing to a silly apology for doing for money what everybody knows to be a disgraceful thing.

J. L. Tracy, M.D.

Professor John Tyndall.

Mt. Carmel, Ill., April, 1894.

To the Editor:—Your notice, on page 523 of the Journal of April 7, of Prof. John Tyndall's donation to Harvard, does very meager justice to his noble acts. He came to this country in October, 1872, and delivered lectures in Boston, Philadelphia, Baltimore, Washington, New York, Brooklyn and New Haven—thirty-six in all; the total receipts for which were $23,100. After deducting his actual expenses there was left $13,033. This he placed in the care of a board of trustees, consisting of Prof. Joseph Henry, Dr. E. L. Youmans and Gen. Hector Tyndale, with a request that the interest on the same be used to send two especially promising American pupils to one of the European universities. The trustees found considerable difficulty in carrying out the instructions, and did not use all the interest as it accrued. At the end of thirteen years the fund had increased to $32,400. Prof. Tyndall then decided to divide this into three equal parts; and gave one part to Columbia College, one to Harvard University, and one to the University of Pennsylvania, to be used in the establishment of three permanent fellowships in physical science.

J. Schneck, M.D.

Is After Medicus.

Seattle, Washington, April 4, 1894.

To the Editor:—Every reader of the Journal of the American Medical Association, and especially every member of the Association who ranks himself a gentleman, will indorse the remarks of Dr. S. Solis-Cohen and treat "Medicus" with contempt. Very truly, Emil Bories, M.D.

ASSOCIATION NEWS.

The Association Train will leave Chicago Monday, May 28, via Santa Fe R. R., Rio Grande Western, and Southern Pacific, for San Francisco via Denver, Colorado Springs, Leadville, Manitou, Glenwood Springs, Salt Lake, Ogden, Truckee and Sacramento. Returning, after the meeting, the train will pass through Sacramento and Northern California to Portland, thence east by way of the Northern Pacific R. R. to St. Paul. C. M. & St.P. R. St. Paul to Chicago. A stop over at Yellowstone National Park for those who desire it has been arranged, and it has been understood that at several places on the journey there will be short stops. President Hibberd's party in a special car join the train at Chicago, and the St. Louis party are expected to join at Kansas City. From all points east and south, concentrating on this train should be effected at Chicago and St. Louis. For all information relating to this train, fares, etc., address J. M. Connell, 212 Clark st., Chicago, or any agent of Santa Fe line in other cities. Rates promised are the lowest excursion rates at time of departure.

This is the only route on which arrangements have been perfected by the Trustees.

SOCIETY NEWS.

The North Philadelphia Medical Society was organized April 2, Dr. William G. Howell was elected President, and Dr. J. B. Brackbank Secretary.

The Chicago Medical Society.—The Publication Committee, on behalf of the *Chicago Medical Recorder*, will give two prizes of $100 each for the best papers submitted before the Chicago Medical Society during the year 1894–5. The editor, Dr. Church, must be notified of each paper entering the contest at the time it is read before the Society. It is intended to increase the amount and number of these prizes

as the profits from the *Recorder* may justify, and all members of the Society are urged to continue their cordial support of the journal and, other things being equal, to give our advertisers the preference when prescribing. It is also suggested that whenever a worthy article for physicians' use is presented by agents, the advice be given to advertise in the *Recorder*. The *Medical Recorder* is now self-sustaining, and will require no further financial aid from the Society, but in the way suggested much can be done toward increasing the fund for prizes, which will secure original and valuable work and add greatly to the importance of the Society.

(Signed) E. J. Doering,
John A. Robison,
Archibald Church.
Committee on Publication.

April 2, 1894.

Association of American Anatomists.—The sixth annual meeting of this Association will be held in connection with the Congress of American Physicians and Surgeons, May 29 to June 1, 1894, in the city of Washington, D. C. This will be the first meeting since that of December 27 to 29, 1892, at Princeton, N. J. The sessions will be held in the Preparatory Department of the Columbian University, H Street, between Thirteenth and Fourteenth, within a few steps of three lines of street cars, and only a few blocks from the principal hotels and Government Departments.

Members who expect to attend will please notify the Secretary and forward to him the titles of papers, etc., which they expect to contribute. The final program will be issued about May 1.

Thus far the following titles have been received:

Dr. Harrison Allen, University of Pennsylvania, "Morphology as a Factor in the Study of Disease." This paper will be read at the general meeting of the Congress on the afternoon of May 29. The discussion will be led by Dr. Thomas Dwight, of Harvard, Dr. Fred H. Gerrish, of Bowdoin, Dr. Frank Baker, of the University of Georgetown, and Dr. Burt G. Wilder, of Cornell.

Also by Dr. Allen two papers: "The Study of the Human Cranium," and "On the Shortening of the Face-axis in the Evolution of the Mammalia."

Dr. Carl Heitzmann, of New York City, "Identity of Structure of Protoplasm with that of Striped Muscle."

Dr. B. G. Wilder, of Cornell, "Relation of the Olfactory to the Cerebral Portion of the Brain." Also "Notes on the Anatomy of the Orang."

Dr. D. K. Shute, of Columbian University, Washington, "Perineum and Perineal Body."

Dr. Wm. P. Carr, of Columbian University, Washington, "Theoretical Anatomy of the Sympathetic System."

Papers are also promised by Dr. Thomas Dwight, of Harvard; Dr. Frank Baker, of Georgetown University, and Dr. D. S. Lamb, of the Army Medical Museum. The titles have not yet been reported.

It is requested that nominations and recommendations for membership be sent to the Secretary before the time of meeting. D. S. Lamb, M.D., Secretary and Treasurer,
800 10th Street, Washington.

March 31, 1894.

Texas State Medical Society.—The twenty-sixth annual meeting of the Texas State Medical Society will be held in the Senate Chamber, Capitol Building, Austin, Texas, April 24, 25, 26 and 27, 1894. The following papers are announced:

Bacteriologic Aspects of Croupous Pneumonia. H. A. West, M.D., Galveston.

The Therapeutic Uses of Spartein. David Cerna, M.D., Galveston.

Hydrotherapy. D. R. Wallace, M.D., Waco.

The Relation of Pharmacy to Medicine. James Kennedy, M.D., Galveston.

Introducing the Subjects of Dosimetry and Subcutaneous Medication. D. R. Wallace, M.D., Waco.

The Present Status of Symphyseotomy, and its Relation to other Obstetrical Operations. J. F. Y. Paine, M.D., Galveston.

Report of a Monstrosity without Limbs or Sexual Organs. Matthew M. Smith, B.Sc., M.A., M.D., Austin.

Tuberculosis of the Joints; its Etiology and Treatment. Wm. M. Cunningham, M.D., of Bastrop. Discussed by Drs. W. F. Starley of Tyler, and I. E. Clark of Schulenberg.

Diseased Joints in Children. Samuel E. Milliken, MD., New York.

The Treatment of Neglected Cases of Hip Joint Disease. J. E. Thompson, M.D., Galveston.

Removal of Female Breast and Axillary Glands for Malignant Disease. B. F. Britain, M.D., of Arlington.

A Report of Six Cases of Depressed Fracture of Frontal Region of Skull, with Two Deaths. J. S. Price, M.D., of Beaumont. Discussed by Drs. A. F. Sampson, Galveston, and Matthew M. Smith, Austin.

Brain Surgery of To-Day. Matthew M. Smith, M.D., Austin.

Concussion and Contusion of the Brain. T. F. Wynn, M.D., Pittsburg.

A Contribution to the Study of the Action of Chloroform. Drs. Edward Randall and David Cerna, Galveston.

Chloroform Anesthesia. Q. C. Smith, M.D., Austin. Discussed by Drs. H. K. Leake, Dallas, and H. C. Nott, Goliad.

Irrigation and Drainage for Peritonitis. Joseph Price, M.D., Philadelphia, Pa. Discussed by Drs. B. E. Hadra, San Antonio, and C. A. Smith, Tyler.

The Modern Treatment of Wounds. Russell A. Hibbs, M.D., New York City. Discussed by Drs. T. J. Bennett, Austin, and George W. Christian, Houston.

Report of a Case of Injury to the Chest. August Schenk, M.D., Kennedy.

Appendicitis; also Report of a Case of Congenital Displaced Enlarged Liver, Mistaken for Tumor; Operation. J. E. Gilcrest, M.D., Gainesville. Discussed by Drs. B. E. Hadra, San Antonio, and A. Sims, Weatherford.

The Operative and Mechanical Treatment of Club-Foot, with Report of Cases. T. W. Shearer, M.D., Wallisville.

A Case of Incomplete Dislocation of the Head of Tibia Inwards, with Complete Outward Vertical Luxation of the Patella. William J. Bever, M.D., Creek.

On Perineorrhaphy by Duke's Method. Thos. More Madden, M.D., Honorary Member, Dublin, Ireland.

Abscess of Spleen in Child Three Months Old; Recovery. W. A. Watkins, M.D., Kemp. Discussed by Drs. Q. C. Smith, Austin, and J. D. Burch, Aurora.

The Fitness of the Climate of Texas for Operative Surgery, Demonstrated by Results in Recent Capital Cases. By Drs. Beall, Walker and Capps, Fort Worth.

Increase of Mental Unsoundness. D. R. Wallace, M.D., LL.D., Waco.

Morphin Suicides. Prevention. Treatment of Opium Poisoning. E. D. Capps, M.D., Fort Worth.

Mind Cure. D. R. Wallace, M.D., LL.D., Waco.

Dysmenorrhea, with Sterility, and its Treatment. Sam Cunningham, M.D., Elgin. Discussed by Drs. Hibbs, of New York, and G. B. Foscue, of Waco.

An Original Method of Disposing of the Ligatures after Laparotomies in the Pelvic Region, Effecting Perfect Vaginal Drainage, with Report of Cases. James Cummings, M.D., Austin. Discussed by Drs. W. J. Mathews, of Austin, and H. H. Thorpe, of Liberty Hill.

Intra-Uterine Manipulations in Pelvic Inflammation. J. F. Y. Paine, M.D., Galveston.

Placenta Previa Treated by Cesarean Section. G. A. Moses, M.D., St. Louis, Mo. Discussed by Drs. T. D. Wooten and G. A. Cupples.

The After Treatment of Celiotomies. G. D. Parker, M.D., Houston. Discussed by Drs. A. C. Scott, of Temple, and Q. C. Smith, of Austin.

Some Clinical Observations on Hematozoa Malariæ. Wm. Gammon, M.D., Galveston.

Embarrassments of Medicine. James H. Bell, M.D., Philadelphia, Pa.

H. A. West, M.D., Secretary, Galveston.

Wisconsin State Medical Society.—The forty-eighth annual meeting of the Wisconsin State Medical Society will be held at the Plankinton House, Milwaukee, May 2, 3 and 4, 1894. The sessions will be held in the Casino Hall of the Plankinton House, beginning at 11 o'clock on Wednesday forenoon, May 2. The reading of papers and discussions will be continued Wednesday afternoon and evening, as well as during the entire day of Thursday.

The literary exercises will be resumed at 8:30 o'clock Friday morning, and the annual election of officers has been set down for 10 o'clock. At 11:45 A.M. business will be sus-

pended for a recess of fifteen minutes, when, at 12:00 M., the President of the Society will deliver the Annual Address.

The Anniversary Dinner will be served at the Plankinton House at 1:00 P.M. The members of the Society will meet in the Club Room and be called in seniority of graduation, and, preceded by the invited guests, will march in procession to the banquet hall. Tickets to the dinner, for which there is no extra charge, should be procured of the Treasurer, Dr. S. S. Hall, as early as possible—preferably when registering at the beginning of the meeting—that the Committee on Arrangements may know the number to provide for. The Committee announces that no person will be admitted to the dinner without a ticket. It is expected that the Anniversary Banquet will be one of the very pleasantest features of the session, as it surely was last year, and every member is urgently requested to be present.

The following is a partial list of papers which will be presented at the meeting:

Annual Address by the President, Dr. B. C. Brett, Green Bay.
Address in Surgery, Dr. H. Reineking.
Knee Joint Disease, Dr. Wm. Mackie, Dr. H. M. Brown.
Injuries of the Cranium and Contents: Diagnosis, Dr. B. G. Gudden; Treatment, Dr. W. H. Earles; Medico-Legal Aspects, Dr. J. A. Jackson.
Hernia—Anatomical Considerations, Dr. F. W. Epley.
Treatment of Reducible Hernia, Dr. B. T. Phillips.
Treatment of Strangulated Hernia and Radical Cure of Same, Dr. A. H. Levings.
Splints, Dr. G. D. Ladd.
Varicose Veins and Their Treatment, Dr. J. R. Minahan.
Local Treatment of Acute Follicular Tonsillitis, Dr. A. B. Farnham.
Internal Treatment of Acute Follicular Tonsillitis, Dr. W. H. Neilson.
Removal of the Tonsils, Dr. Joseph Szoldrski.
Etiology, Pathology and Symptomatology of Tonsillar Hypertrophy, Dr. F. C. Rogers.
Tumors of the Tonsils, Dr. O. M. Waterman.
Discussion by Dr. J. S. Walbridge, Dr. F. C. Rogers, Dr. A. B. Farnham, Dr. H. V. Würdemann, Dr. B. Bantly.
The Pathology of Granular Conjunctivitis, Dr. H. V. Würdemann.
The Medical Treatment of Granular Conjunctivitis, Dr. C. Zimmermann.
The Surgical Treatment of Granular Conjunctivitis, Dr. J. A. Bach.
The Complications of Granular Conjunctivitis and their Treatment, Dr. E. H. Neymann.
Acromegalia, Dr. E. L. Bullard.
Pyrexia, Dr. W. H. Washburn.
Antipyretics and Their Modus Operandi. Dr. T. H. Hay.
The Present Status of the Treatment of Acute Febrile Diseases by means of Antipyretic Drugs, Dr. H. B. Sears.
Hyperpyrexia and its Management, Dr. G. M. Steele.
The Ephemeral Pyrexiæ of Childhood, Dr. H. B. Tanner.
The Pathology of Uremia, Dr. B. J. Bill.
The Clinical Aspects of Uremia, Dr. E. H. Townsend.
The Therapeutics of Uremia, Dr. C. H. Lemon.
The Principles and Ruts of the Practice of Medicine, Dr. J. R. Currens.
Waiting, Dr. S. W. French.
The Country Doctor in Obstetrics, Dr. W. T. Sarles.
Myomectomies, Dr. A. J. Puls.
Observations on Seventy Recently Performed Laparotomies, Dr. F. B. Robinson.
Complications in Abdominal Surgery, Dr. A. J. Burgess.
Perineal Repair, Dr. P. O'Keefe.
Strophanthus, Dr. D. Mereness.
The Use of Heart and Respiratory Stimulants in Anesthesia, Dr. M. H. Fisk.
The Use of Heart Tonics and Stimulants in Acute Febrile Diseases, Dr. C. M. Gould.
The Treatment of Malignant Diphtheria, Dr. S. P. Deahofe.
Belladonna, Dr. S. B. Sperry.
House Disinfection, Dr. O. T. Hougen.
The Duty of the State Toward the Inebriate, Dr. R. M. Wigginton.
Hygiene of Villages, Dr. L. H. Pelton.
Heredity and the Wards of the State, Dr. E. H. Townsend.
Five Minutes With the Typhoid Bacillus, Dr. F. J. Tower.
Provision for the Insane Awaiting Commitment, Dr. M. J. White.
Functional Nervous Diseases, Dr. Irving D. Wiltrout.
Treatment of Epilepsy, Dr. W. F. Wegge.
Report of Two Cases of Unusual Parasitic Intestinal Disease, Dr. E. F. Woods.
Stomach Catarrh and Stomach Lavage, Dr. A. F. Heising.
Broncho-Pneumonia in Children, Dr. J. Noer.
Catarrhal Pneumonia, Dr. Julia P. Kelley.
Cerebral Signs and Simulations in Pneumonia, Dr. J. R. Barnett.
Gouty Deposits of the Testicle, Dr. F. J. Tower.
Infantile Cynosis From Bismuth Poisoning, Dr. A. S. Maxson.
Treatment of Opium Poisoning, Dr. W. H. Hulburt.

It may not be practicable to follow the program in the order of time as given above, and precedence in the reading of papers will be given to members of Standing Committees.

Communications relating to any changes in the provisional program should be addressed to Chairman of Program Committee, Dr. W. H. Washburn, *prior to April 23.*

W. H. Washburn, Chairman Program Committee.
U. O. B. Wingate, Anniversary Chairman.
Ernest Copeland,
J. R. McDill,
H. P. Wenzel,
Committee of Arrangements.

B. C. Brett, President,
Charles S. Sheldon, General Secretary.

BOOK NOTICES.

A Manual of Therapeutics. By A. A. Stevens, A.M., M.D. 16 mo. cl. pp. 435. Philadelphia: W. B. Saunders. 1894. Price $2.25.

This Manual has been prepared for students, and is a concise abridgement of the greater treatises, but the author uses the old English system of weights and measures throughout instead of the modern decimal system, even in the dose table at the end of the book; an unfortunate thing for a book that aspires to be in harmony with recent text-books. Many of the unofficial drugs are briefly commented on, and with the exception noted the book is an excellent one of its kind.

Syllabus of the Obstetrical Lectures in the Medical Department of the University of Pennsylvania. By Richard C. Norris, A.M., M.D., Demonstrator of Obstetrics, University of Pennsylvania, etc. Third edition. Philadelphia: W. B. Saunders. 1894. Price $2.00.

The popularity of this Syllabus is well attested by the fact of its having passed to the third edition. It is one of the most complete of its class. In this edition the changes that have taken place in the University course have been incorporated. The copious index adds to the value of the volume.

Transactions of the third annual meeting of the Association of Military Surgeons of the National Guard of the United States, held at Rush Medical College on August 8, and at the United States Government Building, Jackson Block, August 9 and 10, 1893, Chicago, Illinois. St. Louis: Buxton & Skinner Stationery Company. 1894.

The volume opens with a transcript of the minutes of the meeting, an account of the clinics and entertainments. The papers and addresses read at the meeting then follow. The magnificent historical paper of President Senn on "Enterorrhaphy" (published at the time in this Journal), will always give a permanent value to this volume of the Transactions, if there were no other reason. The name of the organization has been changed to the less cumbersome one of "The Association of Military Surgeons of the United States."

Clinical Diagnosis. By Albert Abrams, M.D. 16 mo. cl. pp. 273. Twenty-eight illustrations. New York: E. B. Treat & Company. 1894. Price $2.75.

This book is a manual of medical diagnosis from a clinical

standpoint and is generally well written, but there is an occasional lapse. On page 110, the following title arrests attention: "The Chemical Analysis of the Stomach as a Means of Diagnosing Gastric Disturbances." On reading the text it is seen that it is the *contents* of the stomach, that are to be analyzed, and not that organ itself as the title states. The table on bacteriologic diagnosis is excellent, but the directions for demonstrating the presence of bacteria in specimens, is not given at that place but scattered through the volume. The typography is singularly unattractive, but there is much useful information in the work—a jewel which deserves a better setting.

Transactions of the American Orthopedic Association. Seventh Session held at St. Louis, Mo., Sept. 19, 20 and 21, 1893. Vol. VI. Published by the Association. Philadelphia. 1894.

This volume contains the list of officers, list of presidents, honorary members, corresponding members, minutes of the seventh annual meeting; the constitution and by-laws, the President's address and the papers read at the annual meeting.

Most of these papers have been printed in the medical journals and some of them in this JOURNAL. They do not therefore require separate mention. The volume is well printed, amply illustrated and carefully edited. There is, however, no index. A. M. Phelps, M.D., of New York, is President, and John Ridlon, M.D., of Chicago, is Secretary.

An Illustrated Encyclopædic Medical Dictionary: Being a Dictionary of the Technical Terms used by Writers on Medicine and the Collateral Sciences, in the Latin, English, French and German languages. By FRANK P. FOSTER, M.D. Vol. IV. Illustrated. Pp. 775. New York: D. Appleton & Company. 1894.

This magnificent Dictionary is now completed with the volume under consideration. We have before mentioned the receipt of former volumes, and commented upon the work. No work approaches it in completeness, and none shows more painstaking labor. The vast research required to collect and define with accuracy the medical terms used in four languages, is something that makes most men shrink from such a task, and it is not likely that the present generation will see another work of this character. The sale is necessarily limited on account of the expensive nature of the book and its extent, and every member of the profession who can afford it should lend encouragement to the publishers by adding it to his collection. No money can be expended to better advantage in enlarging a medical library, than that invested in Foster's Dictionary.

The classical training of the author leads him to great conservatism in the spelling of medical terms, and we fear that those who agreed to the spelling reform at the last annual meeting of the American Medical Editors, will meet with no encouragement in this Dictionary. That reform will come quite surely, but we must remember that the lexicographer's function is not to reform, abbreviate or alter, but to record the existing condition. It is a pleasure to once more refer to the author's remarks on pronunciation: "The Roman method, strange as it may seem to those who are unaccustomed to it, and who now see it for the first time in a medical dictionary, is the one now taught in the leading universities of this country and it will doubtless be adopted everywhere within a very few years." "The value of a dictionary," says the distinguished author, "seems to me to depend upon its accuracy, the convenience of its arrangement, and its comprehensiveness; and in the preparation of this work those qualities have been esteemed in the order in which they are here enumerated." A supplement at the end of the fourth volume contains the words omitted from the preceding volumes.

We congratulate Dr. Foster and his collaborators upon the happy completion of this book, the result of his thirteen years' unremitting labor, and congratulate the medical profession upon the acquisition of this newest and greatest monument to American scholarship.

NECROLOGY.

PETER BOWMAN, M.D., of New York city, April 5.——T. H. Rucker, M.D., formerly of New Albany, died at his home in Evansville, Ind., March 31, aged 79.——B. St. George Tucker, M.D., of Colorado Springs, March 30, aged 55. He was a son of Hon. Beverly Tucker, of Virginia, and a descendant of John Randolph, of Roanoke. He was a surgeon in the Confederate Army.——E. A. Clark, M.D., of San José, Cal., March 30, aged 65. He was a native of Tiffin, Ohio, resided in California since 1850, and had taken an active interest in political as well as medical affairs.——Charles A. Cooper, M.D., of Oil City, Pa., March 26, aged 70.——David Watson, M.D., of Bellefontaine, Iowa, March 31, aged 75.——George A. Watts, M.D., at Tripoli, Iowa, April 9, aged 94.

ON THE DEATH OF DR. RAUCH.—At a meeting of the Philadelphia County Medical Society held March 28, the following resolutions were adopted:

Resolved, That the Philadelphia County Medical Society has heard with great sorrow of the sudden death at Lebanon in this State, of Dr. John H. Rauch, of Chicago, lately Secretary of the Illinois State Board of Health; a man whose interest in the cause of medical education, and whose efforts in increasing the efficiency of the medical profession and maintaining its dignity and honor, have rendered incalculable service to the public.

Resolved, That this resolution be published in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and in the medical journals of Philadelphia.

T. B. SCHNEIDEMAN, Secretary.

PUBLIC HEALTH.

Leprosy in Texas.—A case of leprosy is reported to have been discovered in Dallas, Texas. The patient is a West Indian negro, who claims to have escaped from that country two years ago.

International Sanitary Conference.—Articles of convention were signed by the delegates to the International Sanitary Conference in Paris on the 4th inst., the United States and Great Britain making reservations as to details. A copy of the articles has not yet, April 12, reached this country, but it is claimed that if the decisions of the Conference are carried out they will prove an effectual check to the importation and spread of Asiatic cholera into Europe and thence to the United States.

Typhoid Fever.—The outbreak from typhoid-infected milk at Montclair, N. J., has been clearly traced to a dairy in Verona, where the milk cans were washed in water from a well in close proximity to the vault used by the dairyman's family in which there had been two cases of typhoid fever. Milk from this dairy was also supplied to families in Bloomfield, where eleven cases have occurred besides the sixty cases at Montclair and others at Glen Ridge and Verona—in all a total of some eighty cases up to date. The Verona dairy is quarantined and an inspection is being made of dairies on neighboring farms.

Louisiana State Board of Health.—Governor Foster, of Louisiana, has reappointed Dr. S. R. Oliphant and Mr. S. Odenheimer to succeed themselves as members of the State Board of Health. Dr. Oliphant will probably be reëlected President at the annual meeting, which takes place on the 12th inst. Dr. Lucien F. Salomon, who has for many years

acceptably filled the office of Secretary of the Board, will not accept a reëlection, his practice requiring more attention than is compatible with the duties of the office. Dr. Salomon's retirement is a distinct loss to sanitary interests in the South.

Asiatic Cholera.—Cholera of a virulent type was reported, April 5, to be "raging" in Czenstochov, a place of about 5,000 inhabitants on the Prussian frontier of Poland. The town has been quarantined.

The disease is reported, April 9, to be rapidly spreading in Constantinople, having extended from the poorer and more congested districts, to which it was at first confined, to portions of the city where the better classes live. Councillor Calliadi Bey and a servant of one of the members of the Greek legation died on the 8th inst., after an illness of only a few hours in each case. The Greek legation has been since removed and other foreign representatives are seeking temporary refuge outside the city. It was the Greek government which first announced, March 23, the existence of cholera in Constantinople.

The Smallpox Situation.—Smallpox continued to increase up to the close of March, but with the approach of warm weather it is probable that it has reached its height for the present season. New points of infection, developed since the close of Dr. Rauch's summary, and new cases in the then infected localities, have been reported as follows:

Massachusetts—In South Boston, where the disease was believed to have been "stamped out" in February, there were found four cases, March 20, and a fifth on the following day. In Springfield, March 20, "patients in the pesthouse appear to be doing well"; this is the first intimation received of smallpox at Springfield.

New York—In New York city from four to ten new cases a day are reported; on the 18th a case was removed from a house where four other cases had occurred since March 13; on the 20th a case was found among 100 boys confined in the House of Refuge; on the 22d a family, quarantined for refusing to submit to vaccination, escaped by cutting a hole through the party wall of their flat; on the 25th a policeman was found ill with the disease—judging by newspaper comments on this case it would appear that the New York police force is not vaccinated; on the 26th a cook in a fashionable bachelor's apartment house, who had been treated for a week in the house for malarial fever, was sent to a hospital by an ambulance surgeon who diagnosed his disease as typhoid fever; at the hospital he was found to be in the eruptive stage of smallpox; on the 29th, eleven cases were found in a large crowded, double tenement house in Harlem; one was dying and two others died during removal; April 4, Dr. Balch, Secretary of the State Board of Health, reports ninety-one cases with twenty deaths in New York city, during the week ended March 31; April 8, the steamer, *Obdam*, from Rotterdam, was taken in charge at quarantine with one case of smallpox on board.

In Brooklyn smallpox was declared epidemic by Health Commissioner Emery, March 26; there were eighty cases reported in January and sixty-five in February; the spread of the disease is attributed to neglect of vaccination and the concealment of cases by parents and physicians; vigorous efforts are being made to suppress the outbreak and the State is cooperating; tents furnished by Gov. Flower are used for the overflow from the crowded pesthouse; April 4, Dr. Balch, Secretary of the State Board of Health, reports 167 cases with 20 deaths in Brooklyn during March. At Utica, a new case occurred on the 26th. Cases were reported on the 19th at Manchester, Walworth and Palmyra, villages in the suburbs of Rochester. Cases were reported at Geneva and Ithaca on the 20th. A case was reported on the 23d at Mt. Vernon.

New Jersey.—Another case was found in Hoboken on the 29th, after it was believed that the disease had been suppressed.

Pennsylvania.—On the 23d the local board of health at Danville issued a proclamation declaring smallpox to be epidemic at that place and ordering schools and places of amusement to be closed. The usual local excitement followed, with villification of the board and its action, but the board was sustained by Dr. Atkinson, President of the State Board of Health, who visited Danville on the 28th and expressed great surprise that the Danville physicians let the epidemic get such headway while they were quibbling about names—whether a disease which was spreading day by day and causing numerous deaths should be called smallpox or chickenpox." Early in March the corpse of a child was taken from Danville, where the physicians were disputing over smallpox and chickenpox, to Lewisburg by the father for burial; on the 20th the father was taken down with smallpox. On the 28th, "for the first time in a number of years," a case of smallpox was found in Harrisburg; the patient had just returned from Bridgeport, Conn., and was sick on his arrival. Another case was reported in Pittsburg on the 27th, after it was believed the disease had been "stamped out;" the patient had never been vaccinated; seventeen cases in hospital April 4.

Illinois.—In Chicago the disease continued to spread without abatement during the month; the total number of cases reported during March was 305; cases having developed in the Cook County Hospital, wards 17 and 26 were put in quarantine; April 9, a prisoner at the Harrison Street police station died of hemorrhagic smallpox in his cell; 108 new cases were removed to the pesthouse during the first ten days of April; smallpox corpses were discovered by the inspectors; April 6 one, April 9 two, April 10 one.—March 26 a case was reported at Alton, Madison County, a tramp.—On the 27th, one case and one "suspect" at Hoopeston, Vermilion County.—On the 29th, one case at Greenbush, Warren County, supposed to have been contracted from tramps from Joliet; April 4 three new cases developed in this family.—April 2, two cases reported at Maywood, Cook County, contracted in Chicago.—April 5, two cases in the Grundy County poorhouse, origin, a tramp, supposed to have chickenpox, discharged April 2, before the true nature of his disease was detected.—April 5, one case in Freeport, Winnebago County.

Smallpox was discovered March 24 among seventy-seven Chinese detained in the bonded warehouse at Vancouver, B. C., destined for Portland, Seattle, San Francisco, New York and other points in the United States.

Solid Sanitary Gains from the World's Fair.—The following paragraphs are taken from an article in the *Independent*, reviewing in a sanitary way the results of the Fair at Chicago. The article opens with a statement as to the prevalence of typhoid fever in that city before the Fair began. The writer shows that in 1891 there was an average daily mortality of 5.4, chiefly young lives. This vital drain was serious, and a betterment was observed in 1892 as a result of some sanitary attempts as to water supply and sewerage, especially the former. "At the outset the daily press of the city in blind devotion to the supposed 'interests' of the city, studiously ignored the frightful facts; but the Health Board and the medical periodicals refused to be hoodwinked, and would not keep silence. They stated that in 1891 the percentage of typhoid deaths was 16.6 in 10,000, making a total of 1,997 (only three short of 2,000), and each death is justly presumed to represent ten cases which recover. It is no wonder that cautious people hesitated before planning to visit the Fair. Nobody doubted that the cause of the trouble was a polluted water supply. The London *Lancet* sent forth competent envoys to make a thorough, impartial, scientific investigation, and no doubt their report influenced many Englishmen to remain away. Matters had considerably mended in 1892, but then the mortality rate was equal to that of Philadelphia in the Centen-

nial year—it had fallen to 6.74, while in Philadelphia it was 2.22; Boston, 1.22; New York only .90; Brooklyn, .80; London .49, and in Berlin .42; these last two cities use only filtered water. It will perhaps present a more vivid picture, if we say that in the month of January, 1892, there were 311 deaths from typhoid in Chicago, and in the much more compact city of Brooklyn but 8. In May of the year 1891 half as many people died, as in the whole State of Massachusetts during the entire twelve months of the year; two-thirds as many as died in London with its 4,000,000 of people, in the entire previous year.

In Dr. John H. Rauch, Chicago has had for years a fearless and aggressive sanitarian, whose *fiat-justitia-ruat-cœlum* ideas have impressed themselves on an able and energetic set of younger men, who dared to know the worst, to show the worst, and to push forward remedial measures, and then to show to all the world as far as possible, what intelligently directed effort had accomplished.

Profs. William T. Sedgewick and Allen Hazen, of the Massachusetts Institute of Technology, had prepared a paper for the American Statistical Association called "Statistics of Typhoid Fever in Chicago," accompanied by a diagram showing at a glance the bad eminence of Chicago when compared with Philadelphia, Boston, New York and London. Every once in a little distance the line that represented that city shot up into one of those sharp peaks that tell the practiced eye that things are going badly, and the peak for 1890-'91 went many squares above the worst that had ever been known before, even in Chicago. The paper and diagram made an incisive impression far and wide, and the Secretary of the Illinois State Board of Health called a conference, at which the city, the Sanitary Department and the canal authorities—these being the parties in interest—were represented; and Dr. Reilly pointed out the coincidence between heavy rainfalls that flush out the sewage from the canal into the lake and a rapid rise in the death rate, and he also indicated the only remedy then possible—a greater pumping power; but "nothing of practical value" resulted from this conference, and it is only charitable to suppose that the explanation of what seems a criminal apathy was in the fact that the four-mile tunnel was then in process of construction and would soon be finished, and other tunnels were in process of extension.

Toward the end of 1892 it became possible to shut off the most polluted of the water intakes and begin using the extended tunnels, so that December of 1892 shows 47 deaths from typhoid against 311 in January. On May 1, 1893, the four-mile tunnel was completed; and when the American Public Health Association held its meeting in October it was found that, reckoning from Sept. 30, 1892, to Sept. 30, 1893, the mortality had gone down to a percentage of 2.64 as against 6.72 for the year before, and part of this time the old dangerous intakes were in use. The figures told their own story, and the State Board of Health of Illinois evolved a most instructive "exhibit" from this and other experiences; so that maps, charts, diagrams and statistics demonstrated conclusively that it must have been the bad water that caused the great destruction of life originally; for it was confined to no locality, and was but little aggravated in the overcrowded sections, and the amendment was equally universal.

The ventilation of the subject previous to the Fair put everybody on his guard; the Fair managers became alarmed and welcomed the "piping" of a pure supply on to the grounds from twenty-five miles away, and the principal hotels distilled their drinking and cooking water; but, in spite of all, we hear that a considerable number of people had the fever after returning from Chicago.

Somber as the picture is, it has its bright, redeeming side; everybody's attention was arrested, the eminently practical Chicagoans began to study, not only pure water supply but every phase of sanitation. They saw how innocuously all the wastes of the Fair were disposed of. Especially the women came and saw, and forthwith began to conquer. They organized sanitary associations in every part of the city, whose duty was to cleanse some special district; they mounted one of the smokeless crematories on wheels, and showed how the garbage could be destroyed without offense, by just destroying it; and now we learn that the municipal authorities have five of them at work. The whole community has been educated by the sanitary necessities of the situation. The women have been wakened, and there need be no fear that they will relax their demands for pure air and pure water, and these will be echoed all over the land by intelligent women. Score one for the solid benefits conferred by the Fair.

MISCELLANY.

Hospital Notes.

Bids have been opened for the erection of a new pathological building on the City Hospital grounds of Boston, Mass.

At the monthly meeting of the Board of Directors of the Pennsylvania Hospital, the resignation of Dr. W. H. Harrison, assistant physician of the department for insane men, was received and accepted. Dr. Horace Phillips, an ex-resident physician, was elected to succeed him.

The dedication of the new hospital in Newcastle, Ohio, took place April 3.

The annual meeting of the medical staff of Saginaw Hospital was held April 4. The election resulted in choice of Dr. W. C. Conroy, President, and Dr. W. S. Connery, Secretary.

Medical College Notes.

The Amphitheater of the new medical building of the Tulane University in New Orleans was destroyed by fire March 31. The loss will not exceed $12,000.

The Southern Medical College of Atlanta, Ga., held its annual commencement April 2, and awarded diplomas to forty-two graduates.

The Miami Medical College (Cincinnati) held its annual commencement April 4, and awarded diplomas to twenty-two graduates.

The McGill University of Montreal, Quebec, held its commencement exercises April 5. Fifty-five graduates received the degree of M.D.

The fifteenth annual commencement of the St. Louis College of Medicine was held March 27. Twenty graduates were awarded diplomas.

The fourth annual commencement of the Kansas Medical College (Topeka) was held March 28. There were seven graduates.

The Medical College of Indiana, at Indianapolis, held its twenty-fourth annual commencement March 26, and awarded diplomas to fifty-two graduates.

The Woman's Medical College of Cincinnati held its commencement exercises April 2. Fifteen received the degree of M.D.

At the thirteenth annual commencement of the Omaha Medical College seventeen graduates received their diplomas.

The Annual Commencement of the medical department of the University of Oregon (Portland,) was held April 2. There were fourteen graduates.

Not in "Good Standing."—As a result of its investigations of the St. Joseph medical colleges the Missouri State Board of Health has declared the Northwestern Medical College to be not "in good standing," and has refused to recognize the diplomas recently issued to the graduating class of fourteen. If these young gentlemen desire to practice in Missouri they must pass a satisfactory examination before the Board. Among the reasons given for "slating" the College is the want of proper laboratory facilities for instruction in chemistry and bacteriology.

Evidence of Preliminary Education.—At the January meeting of the Illinois State Board of Health, the rule concerning the evidences of preliminary education, required of applicants for matriculation in colleges of "good standing," was amended so as to read:

2. Diplomas of graduation from a good literary and scientific college or high school, or at least a second-grade teacher's certificate.

The amendment consists in striking out the alternative of an examination by the faculty of the college, and the argument advanced was that such examinations were "too often a farce, very few colleges ever finding an applicant too ignorant to be matriculated."

But now comes Dr. S. J. Talbot, Dean of the Boston Unisity School of Medicine, who points out that there are no second-grade teachers' certificates in New England, and that this action of the Illinois Board seems to "place all Eastern schools, including Harvard as well as our own, in an embarrassing position, inasmuch as, however well educated a man may be after having spent one, two or even three years in a literary and scientific college, if he has not fully completed his course and received a diploma he could not gain admission to any medical college that the Illinois Board would recognize."

This contention gains added force from a recent utterance of Dr. Bowditch, of Harvard, who finds an increasing number of medical students who have left literary and scientific colleges before completing the course, in order to devote more time to the increasing demands of the medical curriculum.

It would seem that the Illinois Board will find it necessary to revise its recent action, and the subject is important enough to receive the attention of the Conference of Examining and Licensing Boards at its forthcoming meeting.

The Michigan College of Medicine and Surgery, (Detroit,) held its annual commencement March 29. Addresses were given by Rev. Samuel Plantz and Prof. Edward W Jenks, M.D., L.L.D., of the faculty. Dr. Hal C. Wyman administered the Hippocratic oath and presented the diplomas to twenty-seven graduates. The exercises were followed in the evening by a banquet.

American College of Dental Surgery.—A class of forty-three, including two women, was graduated with the degree of D.D.S., by the American College of Dental Surgery of Chicago, April 2.

Pneumatic Tires for ambulances are being strongly urged by the local health authorities of many cities, on the ground that they will materially reduce the jar, jolting and other injurious effects of these rapidly driven vehicles.

Disposal of Garbage.—New Orleans is trying the experiment of disposing of its garbage by the Simonin process, which consists in the extraction of all fatty matter by treatment with naphtha or gasoline, after which the residue is dried and ground; the products have a commercial value as lubricating oils and fertilizers, and the process is claimed to be free from nuisance in the matter of offensive odors.

The Missouri State Board of Health unanimously passed a resolution which will have the effect of excluding female physicians as assistants at the city institutions. It provides that the assistants at the Female Hospital for the ensuing year be selected from the corps of assistants at the City Hospital, and that it is not expedient to employ female physicians at the City Hospital.

Quacks in Kansas.—County attorneys and local health officers throughout the State of Kansas have been instructed by the State Board of Health to begin an active crusade against the quacks and itinerants, the "disreputable conscienceless medical swindlers," to quote Secretary Dyker's vigorous language, "who have made Kansas their favorite haunt." Prosecutions are to be at once begun against all violators of the medical practice laws, and it is hoped thus to purge the State of its quacks and to relieve the community and the qualified practitioner of their presence.

The "Medicine Man" of Male-Kula, New Hebrides.—A large island, of the name given above, is now being rescued from savagery by missionaries going to that island from Australia. The position of woman is that of a slave and burden-bearer. An evident symbol of male tyranny is the fact that before any female on Male-kula becomes a wife her two upper front teeth are knocked out by the "medicine man," aided by half a dozen old women, who hold the girl's arms and legs while the cruel operation is being performed. This has been done to hundreds of these poor women, giving them a most hideous looking appearance when grinning at a stranger. The tide has now begun to turn, and the meetings for church and school have females in orderly attendance, as well as men and boys, a condition that was formerly quite out of the question.

THE PUBLIC SERVICE.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from March 31, 1894, to April 6, 1894.

Capt. Edward C. Carter, Asst. Surgeon, will proceed at once to Ft Spokane, Washington, and report to the commanding officer for temporary duty.

Major Charles L. Heizmann, Surgeon U. S. A., is granted leave of absence for twenty-one days, to take effect on or about April 14, 1894.

First Lieut. Edward L. Munson, Asst. Surgeon, will proceed without delay to Camp Merritt, Mont., and report to the commanding officer, for temporary duty at that post.

First Lieut. Charles F. Kieffer, Asst. Surgeon, having reported at Hdqrs. Dept. of Dakota, is assigned to temporary duty at St. Paul, Minn., and will report to the Medical Director of the Dept. for instructions.

First Lieut. Henry D. Snyder, Asst. Surgeon, is relieved from duty at Ft. Reno, Oklahoma Ter., and ordered to Ft. DuChesne, Utah, for duty at that post, relieving Capt. Samuel Q. Robinson, Asst. Surgeon. Capt. Robinson, on being relieved by Lieut. Snyder, will report in person to the commanding officer, Davida Island, New York, for duty at that post.

Major Peter J. A. Cleary, Surgeon, will be relieved from duty at Ft. McPherson, Ga., by the commanding officer of that post, on the receipt by him of this order, and will report in person to the commanding officer, Ft. Custer, Mont., for duty at that post.

The following named officers are detailed to represent the Medical Department of the Army as delegates to the Association of Military Surgeons of the United States, to meet in Washington May 1, 1894: Lieut.-Col. William H. Forwood, Deputy Surgeon-General; Major Robert M. O'Reilly, Surgeon; Major Joseph K. Corson, Surgeon; Major Walter Reed, Surgeon; Capt. John L. Phillips, Asst. Surgeon; Capt. G. L. Edie, Asst. Surgeon.

LETTERS RECEIVED.

(A) Andrews, Edmund, Chicago, Ill.; Allen, J. B., Hagerstown, Ind.; Ashmead, A. S., New York, N. Y.; Appleton, D. & Co., New York, N. Y.; Anderson, O. C., Andover, Ill.

(B) Baker, L. H., Oak Park, Ill.; Baker, Henry B., West Baden, Ind.; Beatty, R. C., Lebanon, Mo.; Bremer, L., St. Louis, Mo.; Bell, Guido, Indianapolis, Ind.; Baker, A. R., (2) Cleveland, Ohio; Buck, H. A., Vincennes, Ind.; Blakiston, P. Son & Co., Philadelphia, Pa.; Burch, J. D., Aurora, Texas; Bond, R. C., Aurora, Ind.; Bausman, A. B., Chicago, Ill.

(C) Codman & Shurtleff, Boston, Mass.; Cutter, J. A., New York, N. Y.; Castle, Wilmot & Co., Rochester, N. Y.

(D) Doliber-Goodale & Co., Boston, Mass.; Dal, J. W., Chicago, Ill.

(E) Ely, J. S., Barnesville, Ohio; Evans, Geo. W., Washington, D. C.; Ellis, P. V., Marshalltown, Iowa.

(F) Fernandez, A. M., New York, N. Y.; Fletcher, M. H., Cincinnati, Ohio; Fairbank, H. C., Flint, Mich.; Frank, Louis, Milwaukee, Wis.; Foster, C. W., Woodfords, Me.

(G) Gihon, A., Washington, D. C.; Garcelon, Alonzo, Lewiston, Me.; Goldspohn, A., Chicago, Ill.

(H) Howle, W. P., Oran, Mo.; Holton, Henry D., Brattleboro, Vt.; Hanson, A. H., Chicago, Ill.; Hummel, A. L., (4) Philadelphia, Pa.; Hanson, Z. P., Chicago, Ill.; Howe, H. H., Weston, Vt.; Howard, R. C., Durant, Miss.

(J) Jennings, C. G., Detroit, Mich.; Jones, Wm. Torrence, Keysville, Ga.; Jelks, James T., Hot Springs, Ark.

(K) Kerrick, H. C., Brockton, Ill.; Kelly, C. W., Louisville, Ky.; Kinnaman, A. S., Cleveland, Ohio; Kennedy, T. C., Shelbyville, Ind.

(L) Listol Chemical Co., Chicago, Ill.; Lüke, Dr., Koenigsberg, Germany.

(M) Marshall Printing Co., Marshalltown, Iowa; McGuire, F. C., Washington, D. C.; Magoffin, M. M., Mercer, Pa.; Mallory, C. H. & Co., New York, N. Y.; McCormick, H. G., Williamsport, Pa.; Merrill, J. C., Washington, D. C.

(N) New York Post-Graduate Medical School, New York, N. Y.

(P) Phenique Chemical Co., (2) St. Louis, Mo.; Pelton, E. R., New York, N. Y.; Phillips Brothers, Brothers, Springfield, Ill.; Phelps, R. H., Syracuse, N. Y.; Perpoena Chemical Co., New York, N. Y.; Phillips, E. L., Galesburg, Ill.; Posman, A., Paducah, Ky.

(R) Reed, A. A., Boston, Mass.

(S) Schieffelin, W. H. & Co., New York, N. Y.; Sultan Drug Co., St. Louis, Mo.; Stearns, Frederic & Co., Detroit, Mich.; Steiger, E. & Co., New York, N. Y.; Sternberg, Geo. M., Washington, D. C.; Subscription News Co., Chicago, Ill.; Smith, Prescott, Cincinnati, Ohio; Smith, A. R. G., North Whitefield, Maine.

(T) Townsend, H. C., St. Louis, Mo.; The Daggett Table Co., Buffalo, N. Y.; The S. R. Niles Newspaper Advertising Agency, Boston, Mass.; Topliff, C. L., New York, N. Y.; The Maltine Mfg. Co., New York, N. Y.; Tuley, H. E., Louisville, Ky.

(W) West Baden Sprlug Co., West Baden, Ind.; White, J. A., Richmond, Va.; Wimmer, S. J., St. Mary's, Pa.; Westermann, B. & Co, New York, N. Y.; Willard, Lee M., Merrill, Wis.; Werder, X. O., Pittsburg, Pa.; Woodbridge, J. E., Youngstown, Ohio.

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ORIGINAL ARTICLES.

PNEUMONIC FEVER—ITS SYMPTOMATOLOGY.

BY EDWARD F. WELLS, M.D.
CHICAGO.

DIGESTIVE SYSTEM.

During the chill or rigor there may be chattering of the teeth, and this usually augurs a severe attack. In one of my cases incessant and prolonged chattering occurred without the presence of a chill or general rigor, but this is rare.

A man, aged 65, was awakened at midnight with uncontrollable chattering of the teeth. I saw him within an hour and found him in a great state of nervous excitement and alarm. His subjective symptoms were a feeling of uneasiness and an indefinite dread of impending evil. The skin was pale, pinched and cool; pulse 96, respirations 20, and temperature 99 degrees. He was restless, tossed about in bed, passed his urine frequently, and his teeth chattered incessantly and uncontrollably. This latter continued for more than two hours, subsiding gradually. Although the skin was cool, yet there was neither chilliness nor rigors. The ordinary symptoms of severe pneumonic fever were developed and the patient died on the eighth day.

Grinding of the teeth is not infrequent in children, and is sometimes met with in adults. It usually indicates a cerebral complication and is of evil import. When present in children, together with brightness of the eyes, contraction or dilatation of the pupils, startings in sleep, etc., convulsions may be feared.

Extraordinary sensitiveness of the teeth was present in one of my cases.

A lady, aged 37, of nervous temperament, suffered an attack of pneumonic fever, locally affecting the base of the left lung. During the first twenty-four hours she had excessive vomiting, followed by intense headache and low delirium. Convalescence began on the eighth day. During convalescence and for some time afterward the teeth were so sensitive that she could scarcely bear them in contact and was compelled to subsist solely upon liquid foods.

Patients suffering with pneumonic fever, in common with other severe acute diseases, are seldom troubled with toothache, and its appearance may be viewed as an indication that convalescence is approaching.

The teeth—especially the upper ones—are usually covered with a soft, grayish deposit, although in the very mildest cases they may remain clean. In the cases of greatest severity—those accompanied by low, adynamic or typhoid symptoms—the teeth always, and often the gums[1] and lips also, are covered with dark-colored sordes. The extent, amount and color of this deposit is a pretty accurate gauge of the gravity of the case. Its disappearance is an unfailing harbinger of improvement.

Bowling[2] has called attention to the occurrence, in some cases, of a peculiar deposition on the teeth, just along the margins of the gums, of matters of various shades of color, ranging from a light orange to a dull vermilion, the tint being always deepest near the gums and shading off as the distance is increased. The line of deposit is about one-sixteenth of an inch in width and can usually be removed, although a permanent stain sometimes results. Bowling considers it an exudation from the gums and not a deposit from the expectoration or the ordinary secretions of the mouth, and that it differs from ordinary sordes. He noted this peculiar line in about one-third of his cases.

Although I have diligently searched for this line in a large number of cases, yet I have been able to recognize nothing answering the above description, except in a few cases, and in these I could not eliminate from my mind the belief that it was merely ordinary sordes, colored by blood from the expectoration, or from bleeding gums.

This line must not be confounded with the discoloration of the gingival margins due to the presence in the system of the compounds of lead,[3] mercury, iodin, etc., nor with the line in the same locality found in some cases of phthisis.[4]

The tongue is usually protruded in a natural manner, unless there is great prostration, cerebral excitement or coma; under which circumstances it will be extended with difficulty, excitedly, tremblingly,[4a] hesitatingly, slowly or not at all. In some low and dangerous cases it may be retracted or laterally contracted, giving it a short and blunted, or a narrow and pointed appearance.

During the progress of the disease and in different patients the tongue may present almost every imaginable appearance, ranging from the normal to one covered with a foul mucus coating or a most luxuriant fur; or denuded of epithelium, deeply fissured and as dry as a board. It may remain clean and moist—not to be distinguished from its healthy condition—not only in a few mild cases, but also in rare cases of the utmost severity, and I have even seen patients perish with such tongues.

When I first witnessed such cases I was greatly surprised, but I soon discovered that others had noticed the same fact, Louis,[5] long ago, found the tongue normal in sixteen of thirty-five fatal, and in nineteen of fifty-six non-fatal cases. I am not aware, however, that any other observer has noticed this condition in so large a proportion of cases,—I certainly have not.

In general a natural appearance of this organ, or, having departed more or less from this state, a return to such a condition, is a favorable indication.

During the early days of the attack, and in some of the milder cases throughout its entire course, the tongue is lightly coated[6] with a cream or yellowish colored mucus secretion, borne upon a more or less luxuriant fur. In the milder cases this continues to the beginning of convalescence, when the coating gradually disappears, leaving the tongue clean and of a normal appearance. In the severe cases this coating takes on a dark color and becomes dry, hard and fissured.[7] This is especially the case in those persons who breathe through the mouth. If this condition is developed it always denotes danger,[8] and if there is no accompanying thirst it is often a fatal indication. In those successful cases in which the coating becomes dry and hard the tongue sheds its epithelium and presents a scalded appearance. In this state it is very sensitive and quickly becomes

dry and glazed when exposed to the air, but is easily moistened by keeping the mouth closed or by taking a drink of water. Although a dry state of the tongue always indicates a grave case,[9] yet we should not base our prognosis exclusively upon this fact. I have seen pneumonic patients recover whose tongues were so dry, hard and fissured as to almost prevent articulation.

Returning humidity and softness, when the tongue has been dry and hard, or disappearance of the fur and coating when these have been present, are reassuring signs. A return to a natural appearance is first seen along the margins of the tongue, gradually extending towards the center. Sometimes this change occurs in irregularly distributed patches, giving the organ a very peculiar appearance. As a rule, to which there are exceptions, as before indicated, a favorable opinion as to the issue of the attack may be entertained so long as the tongue and mouth remain moist.

The coating and fur upon the surface of the tongue are liable to be discolored by the expectoration, ingesta and vomited matters. In one of my cases the tongue presented a remarkably fine olive green coating.

In many cases the tongue is broad and flabby and shows the markings of the teeth.[10] In these cases the color is apt to be gray, leaden or bluish. In other cases the tongue presents a strawberry-and-cream appearance which is very striking. Sometimes an albuminous exudation appears in patches upon the surface of the tongue. The tissues beneath the patches are inflamed and often ulcerate. This is usually an unfavorable, though not necessarily fatal sign.[11] Ulceration under the tongue[12] has been noticed by Baginsky.[13] I have not seen ulceration of the lingual frenum in any case uncomplicated by pertussis. Herpes of the tongue[14] was present in three of my cases.

In one of my cases the lingual herpes was unilateral, a group of five vesicles being arranged upon the right side. There were also herpetic vesicles at the angle of the mouth on the same side.

The temperature of the tongue is somewhat increased in the early part of the attack. It is lowered in cases attended with pronounced cyanosis or as a fatal termination is approached.

Although the condition of the tongue[15] is a very important consideration, it can never teach us so much as the ancients believed. Thus Hippocrates[16] claimed to be able to locate the disease by the coating upon the tongue. Stoll[17] thought himself able to distinguish the pains of pneumonic fever from those of rheumatism[18] by the moisture of the tongue.

During the height of the fever the secretion of saliva is diminished and in rare cases almost suppressed. A free secretion of saliva assists in keeping the mouth and tongue clean and is a favorable symptom.

Inflammation of the parotid gland is a rare complication of pneumonic fever. When it occurs the subjects are usually young—very rarely the aged. It comes on early in the attack and pursues a very acute course, attaining its full intensity in from one to three days. It is usually unilateral and tends to early suppuration. The pus, unless afforded early egress, inclines to burrow deeply and to find vent at distant points. Often but little pus escapes on incision and gangrene and sloughing are apt to result. This is a grave and dangerous complication and indicates that the general system is laboring under a heavy load of septic infection.[19]

As showing the rarity of this complication it may be stated that Huss,[20] Fismer[21] and Juergensen[22] never met with a case. It occurred but six times in 5,738 cases treated in the Vienna General Hospital. One case is recorded in the Roosevelt Hospital Reports,[23] and Holt[24] has reported one occurring in Bellevue Hospital. Stortz[25] met with it once in 259 cases, Samter[26] once in 331 cases, and Schapira[27] once in 173 cases. I have met with a single example of this complication.

A boy, aged 7, in March, 1879, suffered an attack of *febris pneumonica sinistra*, with suppuration of the left parotid gland. The patient was of delicate build, was subject to frequent attacks of catarrhal pharyngitis, and eighteen months before had had diphtheria. The pulmonary inflammation pursued an ordinary course for a week, after which the local symptoms began to decline, while the constitutional ones continued unabated, although in a changed form. In the beginning the symptoms were marked by vigor and activity, whereas they were now of a low, dragging nature. On the eighth day a hard, painful swelling appeared in the left parotid region which rapidly increased in size, became reddened and livid, and "pointed" on the eleventh day, when it was incised at several points, giving exit to about a drachm of purulent matter. Pus continued to discharge for about ten days, after which the wounds healed. Previous to incising the abscess there was a high range of temperature, with at times chilliness, profuse perspiration, vomiting and a decided tendency to somnolency. These symptoms gradually subsided, although the patient continued weak and emaciated for several weeks.

Stomatitis, a softened state of the mucous membranes of the mouth—bleeding easily on touch—with ulceration, gangrene and sloughing may occur in rare cases, especially infantile.[28] Scurvy, with ulceration of the gums and loosening of the teeth was a feature of the Nantes epidemic in 1840.[29]

Naso-pharyngeal inflammation is not very rare. In these cases the soft palate may be relaxed and the uvula swollen and elongated; diminution or abolition of sensibility is frequent and deglutition difficult. The posterior wall of the pharynx may be seen, in some of these cases, dry, glazed, ridged and furrowed. To this dried and insensitive surface particles of the expectoration are apt to adhere, giving rise to foul odors.[30] The patient sometimes complains of stiffness of the throat, with a creaking sensation on deglutition.[31] False membrane may cover the tonsils, pharynx, larynx, esophagus, etc., in rare cases. This occurred in three of my cases.[32] Alarming, or even fatal impediment to respiration may arise from edema[33] or laryngeal spasm.[34]

In one of my cases laryngismus stridulus occurred. A child, 2 years of age, had had a cough for several days, when she awoke from sleep at 10 P.M., with a frightful fit of dyspnea, and cramping of various sets of muscles. Cyanosis was extreme; the eyes rolled outward; she became limp, and seemed as if dead. She gradually revived and no more dyspnea was observed. Examination revealed consolidation of the upper lobe of the left lung. The disease pursued a severe course, with a high range of temperature, but recovery eventually ensued.

The appetite is always impaired, and is usually lost,[35] especially in the earlier days of the attack. With the beginning of convalescence the appetite gradually returns and soon becomes quite keen.[36] During the entire course of the disease fluid food is more readily taken than solid.

Digestion is often held in abeyance, and food sometimes lies for a long time in the stomach as an undigested, sour mass, to be finally gotten rid of by vomiting or catharsis.[37]

Thirst is almost always a prominent symptom in this disease.[38] It is always considerable and may be excessive. Ziemssen[39] has known even children to imbibe more than a quart of water in the twenty-four hours, and I have known adults to exceed this quantity several fold. Cold and slightly acidulated and

aërated drinks are usually relished by the patient, although plain, cold water is the one of which he tires least readily. The thirst is caused, in a great measure, by the loss of blood serum, and is proportional to such loss. It is therefore greatest when there is profuse perspirations, diuresis, diarrhea, loss of blood or extensive hepatization. These symptoms being present without thirst the prognosis is rendered doubtful. The absence of thirst in cases accompanied by stupor or other cerebral symptoms is also an unfavorable circumstance.[41]

Nausea and vomiting are very frequent and prominent symptoms of pneumonic fever, being observable, particularly at the onset, in a majority of cases.

Vomiting was present in 60 per cent. of my cases, taken *seriatim*, and in 85 per cent. of the children. This in excess of the proportion given by Rilliet et Barthez,[41] 33 per cent.; Ziemssen,[42] 40 per cent.; and Gerhard,[43] 60 per cent.—all referring to children.[44]

It is usually one of the very earliest symptoms[45] and is limited to the first days of the attack,[46] although it may, in rare cases, continue for a long time.[47] It is aggravated or excited by overfilling the stomach with food and drinks[48] and by assuming the upright position. The vomited matters consist at first of the ordinary contents of the stomach and afterwards of bilious matters, mucus, food, drinks, etc.[49]

One of my patients vomited, at different times and in various amounts, a peculiar, dark, bluish-green mucus which jellied when water was added in excess—a quart of water to a gill or half-pint of the vomitus. The patient, a female, was the subject of chronic gastro-ectasis.

At first the vomiting may not cause much distress, but later there is distressing retching and suffering. It greatly aggravates the thoracic pain and the nausea prevents the ingestion of food. Louis[50] considers it an element of danger, but this opinion I can neither confirm nor deny.

Hematemesis may be present in rare cases[51]—once in my collection.

A boy, aged 8, was taken, Sept. 18, 1875, with chilliness, followed by fever, cough, pain in the epigastrium, expectoration of sanguineous mucus and with dullness and tubular breathing over the base of the right lung. Vomiting, first of the ingesta and afterwards of mucus and bilious matter, was a prominent symptom from the beginning. On the morning of the second day the vomited mucus was streaked with blood, and later in the day he threw up a gill or more of dark coffee-ground matter. He recovered fully but afterward developed a hemorrhagic diathesis and died, two years later, as the result of numerous severe hemorrhages.

Hiccough is an occasional and a very distressing symptom,[52] especially in those cases complicated by diaphragmitis. It is often very persistent, continuing for several days,[53] or even weeks and months[54] in rare cases. It is probably due to an irritation of the pneumogastric nerve, acting upon the spinal cord and thence reflected to the phrenic nerve.[55]

Mulreany[56] reports a very interesting series of cases of pneumonic fever with hiccough as a prominent symptom.

A robust farmer, aged 40, had pneumonic fever locally affecting the right lung. There was no cough, the pulse was almost natural and the stomach retained food pretty well. There was hiccough for twelve days, with recovery of the patient.

A thin, delicate blacksmith aged 56, had pneumonic fever, with hepatization of the base of the right lung. Pain was severe and extended to the shoulder and ear. The cough was embarrassed and hiccough preceded each expiration. He obtained only occasional and short snatches of sleep. The singultus continued for twenty-six days, terminating in recovery of the patient.

A muscular man, aged 21, had pneumonic fever, locally affecting the base of the right lung. There was a rapid pulse, hurried respiration, incessant vomiting, anxiety of mind and a constant and harassing hiccough. There was no cough, neither was there pain, even on deep inspiration, but a severe lancinating pain was elicited by intercostal pressure. The vomiting and hiccough persisted for seventeen days, but gradually ceased with improvement in the chest symptoms. Recovery ensued.

A tall and muscular man, aged 22, was taken with a rigor, followed by intense headache, sopor, vomiting, profuse perspiration, high temperature, hurried respiration, cough and a scanty rusty expectoration. On the second day the breathing was very rapid and hiccough accompanied every second or third expiration. The patient daily went from bad to worse, he could not lie in the horizontal position, hiccoughed with every expiration, obtained no sleep and died, with a clear mind, on the fifteenth day.

I have met with prolonged severe hiccough only once in my experience with this malady.

A farmer, aged 30, was taken, May 10, 1879, with a severe chill, followed by fever, cough, pain in the left side, oppressed breathing, anorexia, nausea, vomiting and expectoration of rusty sputæ. I saw him first on the third day and found the entire left lung hepatized, the skin dry and harsh, cheeks dusky, tongue heavily coated, abundant labial herpes, great thirst, severe headache, loaded urine, bilious diarrhea, the pulse 140, respirations 40 and temperature 102.5 degrees. He had ridden a distance of six miles in an open wagon and through a broiling sun and returned to his home in the same manner. Upon arriving at his residence quite exhausted an intense burning pain developed in the epigastrium, with rigidity of the abdominal parietes, great dyspnea, agonizing efforts at vomiting and a persistent and distressing hiccough. The vomiting continued two days and the pain, although constantly present, became less intense after the sixth day. The hiccough persisted, with only the scantiest intervals of rest, for ten days when it ceased quite suddenly. Two days later as he was being removed from the bed to a chair, he instantly expired. The physiognomy of the patient when the singultus was at its height was pitiable in the extreme. With each spasm the face assumed a sardonic grin; the eyes were bloodshot; the skin was bathed in perspiration; the countenance was haggard and careworn, and the expression was one of deepest anxiety and a mute and pathetic appeal for succor.

Organic disease of the stomach is met with in some cases.[57] This organ, in infrequent instances, is enormously distended,[58] and it may be ulcerated or covered, in patches, by false membrane.[59] Gangrene is a peculiarity of some epidemics.[60]

The bowels are generally somewhat costive,[61] especially in the early days of the attack.[62] If allowed to take its natural course the constipation is often relieved by a very copious evacuation after a few days, to be followed by more or less looseness of the bowels. This change occurs earlier in children than in adults. In some cases diarrhea is a prominent symptom,[63] even, it may be, from the start. A fetid diarrhea is characteristic of some epidemics.[64] The evacuations may be thin and watery, with but little color, whitish and foamy, yellowish, bilious, black and tarry, scybalous, mucus, hemorrhagic, fetid, etc.

The diarrhea may be distinctly inflammatory in character.[64a] I have met a number of cases in which the pneumonic fever was ushered in by a dysenteric diarrhea.[65]

A widow, aged 60, had had dysenteric diarrhea, cough and indefinite pains in the chest for a week, when, on April 25, 1881, she had a slight chill, followed by fever, vomiting, severe pain in the left side and extreme prostration. All the ordinary symptoms and signs of a grave, low grade pneumonic fever were developed, but the prominent feature of the case, from the beginning to the end, was the fetid, dysenteric, uncontrollable diarrhea. From day to day it varied in profuseness and character, but it was always present. During the first week the stools numbered from ten to twenty daily, and they were scybalous, bilious and somewhat dysenteric. During the second week they were more frequent, yellow, gelatinous and very fetid. During the last two days the evacuations were involuntary, unconscious

and incessant. She died on the thirteenth day, and the autopsy disclosed a gray hepatization of the entire left lung, the tissues being very soft and breaking down with the lightest touch; and ulceration of the lower portion of the ileum, cecum and ascending colon. One of the cecal ulcers had perforated the coats of the bowel, but the peritoneal surface had become adherent to a loop of the small intestine and no extravasation of the intestinal contents had occurred.

Perforation of these ulcers may incite a fatal peritonitis.

A man aged 20, contracted pneumonic fever, locally affecting the lower lobe of the right lung, from which he convalesced in the usual length of time. Rather sudden death occurred and at the autopsy, in addition to the evidence of pulmonary, pleuritic and pericardial inflammation there was found ulcerative enteritis, with perforation.[66]

Peritonitis, especially purulent, has been noticed in a considerable number of cases,[67] independent of perforation. It is a very fatal complication.

The post-mortem examination, however, does not always disclose organic alterations to account for the diarrhea, even when most obstinate.

A sailor, aged 32, who had been ill for several days, was exposed to a hailstorm at sea, which was followed by chill, fever, thoracic pains, anorexia, sleeplessness and profuse diarrhea. On admission to the hospital on the third day he was thoroughly prostrated, had a short and hacking cough, scanty muco-sanguineous expectoration, a pulse of 126, temperature of 104 degrees and respirations of 42. There was a "total absence of respiratory murmur over middle and lower lobes of right lung; tongue, dry and brown; bowels very loose, requiring the stool every thirty minutes; urine free, but very dark in color." On the following day there was great dyspnea. "Crepitant ronchus could be heard all over the ward, the patient crying out for breath and sleep." He died during the night. At the autopsy "on opening the thorax considerable straw-colored serum escaped; about 1000 c.c. serum in thoracic cavity; fibrinous pleuritic adhesions throughout the right pleura, also slightly in left pleura; right lung collapsed and bathed in yellow pus; lower lobe of left lung inflammatory; right lung color of liver tissue; heart normal and perfectly healthy; liver, spleen and pancreas normal; intestines distended with flatus, but perfectly healthy."[68]

Gaseous distension of the bowels is occasionally enormous,[69] impeding respiration and becoming an element of danger.[70]

Diarrhea coming on late in the attack, with adynamic symptoms, is of evil import,[71] and this is especially the case if the discharges are fetid or dysenteric in character, or if they are involuntarily evacuated.

In my series of cases there were fourteen in which there were involuntary or unconscious evacuations of the bowels as a prominent symptom. Of these ten died and four recovered.[72] In one of the successful cases the diarrhea was hemorrhagic.[73]

A young lady, 17 years of age, who had had an attack of pneumonic fever, five years previously, was taken February 23, with headache, alarm and muscular tremor, continuing three hours and terminating in chilliness and drowsiness, followed by fever and the ordinary symptoms of pneumonic fever with hepatization of the entire left lung—the inflammation beginning above and extending downward. For seven days the temperature ranged from 102 to 104.4 degrees, gradually declining to normal on the evening of the ninth day. The pulse, when the patient was first seen was 120, but did not again exceed 92. The respirations ranged from 24 to 32. Profuse diarrhea began on the fourth day. At first the stools were olive-colored and scybalous, but afterwards they were liquid, bilious and very offensive. On the sixth day the bowels moved only three times but the passages were unconscious. On the seventh, eighth, ninth and tenth days there was a constant, unconscious and uncontrollable passage of feces. On the ninth day there was a considerable discharge of fluid and clotted blood. On the seventh, eighth and ninth days the urine was also passed unconsciously—constantly dribbling away. The urine and feces were so acrid that the vulva, nates and upper part of the thighs were greatly irritated. The mind remained remarkably clear throughout the attack. The case was one of the greatest severity; a physician of long experience and fine abilities, on the eighth day, pronouncing death inevitable. She recovered after a tedious convalescence.

Hemorrhage from the bowels is a rare complication.[74]

During an attack of pneumonic fever intestinal worms, if any are present, are apt to be discharged, and this may be a prominent feature of some cases or epidemics.[75] Helminthiasis is most common in patients from 3 to 10 years of age, being infrequent in infants and youths and very rare in adults[76] and the aged. Lumbrici are sometimes present in immense numbers[77]—"more than 1,000" being present;[78] the intestines being literally crammed with them[79]—and large numbers of them may pass away at the same time. In one case 460 were passed in a fortnight.[80]

In March, 1880, I attended two children, brother and sister, aged respectively 5 and 7 years, who were simultaneously attacked by pneumonic fever. The fever was ardent, with marked cerebral symptoms in both. On the fourth day I was shown two matted masses of lumbrici, each larger than a large orange which had been passed by the two children respectively during the preceding night. Improvement in all the symptoms began at once and both promptly recovered.

Some of the older authors considered it a very unfavorable sign to have these worms discharged, arguing that they instinctively anticipate danger, and, like rats fleeing from a sinking ship, hasten to desert their host.[81]

Jaundice, either preceding, accompanying or following the attack, will be encountered in a certain proportion of cases.[82] This proportion will be large or small, as the observer classifies every shade of yellowness of the conjunctivæ and skin as examples, or only those which are more clearly and distinctly marked. Inasmuch as a slight tinge of jaundice may arise from hepatic congestion from any cause it is quite common in this disease[83] in which such congestion is often present.[84] Severe icteric manifestations, on the contrary, are not very frequent[85] and depend, most probably, upon duodenitis, inflammation of the bile ducts or other obstructive causes. It is a prominent feature of some epidemics.[86]

It has been thought that jaundice occurs with greater frequency in those cases in which the pulmonary lesion is located upon the right side,[87] especially when at the base, but this does not accord with my experience.

Thus in my series of cases marked icterus was noticed in twenty-eight cases—5.7 per cent. Of these the pulmonary lesion was located in the right lung in thirteen, in the left in nine and in both in six cases, which is almost the exact proportion in which the local lesion is found in all cases. It may therefore be said that jaundice occurs oftenest in connection with right-sided hepatization, because such inflammation is most common in pneumonic fever.

It might be readily supposed that the circulation in the blood—already surcharged with other excrementitious matters—of the biliary principles as is the case in severe jaundice would have a deleterious influence upon the course of the disease and the fate of the patient, and such is indeed the case.

Mosler[88] lost eleven of fifteen cases—73 per cent.—in which icterus was a marked feature, and he, with Traube[89] and others,[90] regards this as one of the most dangerous symptoms that can arise during the progress of pneumonic fever. Fismer[91] puts the mortality in these cases at 20 per cent., which is about the average in general, but is slightly above that of his own cases. On the contrary, Huss[92] lost only 8.7

per cent. of his cases, and Grisolle[93] but 15 per cent. of his twenty cases—both below their averages. My own opinion is that it is a most undesirable symptom and either makes or marks a grave case. This is based upon a loss of 36 per cent. of my cases and witnessing severe and grave manifestations in nearly all of the remainder.

Leyden[94] has called particular attention to the solvent action of the biliary acids upon the red blood corpuscles, and concludes that herein lies the true explanation of the known deleterious effects of the bile in the general circulation.[95]

Secondary inflammation,[96] abscess[97] or cirrhosis[98] of the liver are some of the rarer accompaniments and sequelæ of pneumonic fever.

Enlargement of the spleen is a marked feature of some cases,[99] localities[100] and epidemics.[101] When accompanied by softening[102] it may become an element of danger. It usually returns to its normal condition after the fever declines, although some enlargement may remain permanently.[103]

GENITO-URINARY SYSTEM.

Micturition is more or less modified, but differently in the two sexes. It is usually painful and there is a burning sensation as the urine flows along the urethra. The urine may be so irritating as to cause excoriation of the external surfaces with which it comes in contact.[104]

This is mentioned as having occurred in nine of my cases—all females—and it may have been present in a lesser degree in others. In one case the vulvar excoriation was very extensive and gave rise to much distress.

In general, micturition is infrequent, the urine being passed only once or twice in twenty-four hours, especially early in the attack, although frequent micturition is not uncommon. There is usually some hesitation and delay in starting the stream of urine and the flow is retarded. This difficulty is sometimes so great that the bladder is only relieved *guttatim*[105] or by the catheter. Patients have described the sensation as being one of increased resistance to be overcome by a diminished *vis-a-tergo*. The condition is due to excessive irritability of the sacral plexus or a diminution in the functional activity of the hypogastric plexus, or both.

A blunted intellect is also responsible for a certain proportion of these cases of dysuria.

This fact is mentioned in my notes but once. In this instance the patient, an adult male, was so dull and drowsy that unless means were taken to keep him aroused, he would, whilst passing the urine, relapse into a state of lethargy, with stoppage of the flow. There was no impediment to the flow of urine so long as he was awake.

I have been unable to find a parallel case in the medical literature at my command, although they have most probably been observed by others.

Retention may occur, [106] either from vesical paralysis or dullness of intellect, but the circumstance must be rare as it was met with but once in my series of cases.

A female child, aged 5 years was taken, Sept. 1, 1875, with the symptoms and signs of pneumonic fever, locally affecting the apex of the left lung. Vomiting and helminthiasis were prominent symptoms. From the first, the urine was passed with difficulty and on the third day there was complete retention. The catheter was used and a large quantity of urine withdrawn. Retention did not recur. There was only slight impairment of the mental faculties. Crisis occurred on the fifth day, with the extrusion of a very large number of round worms. Convalescence proceeded rapidly to complete recovery.[107]

In females, especially those of advanced age or those who have borne children, there is, not infrequently, incontinence of urine with the efforts of coughing. The symptom is one indicating more than ordinary danger. Such incontinence is seldom encountered in young girls or unmarried women, although I have given a case on a preceding page. It is very rare in male adults.[108]

The urine of pneumonic fever patients is invariably altered in constitution.

Writers have generally employed the phrase, "the urine is usually altered in its constitution," but as the result of a very large number of examinations, both during the progress of the disease and after recovery, I am in a position to positively assert that whilst the malady is raging the characteristics of the urine are *invariably* other than those pertaining to health.

In quantity it is usually diminished,[109] although under peculiar circumstances it may be increased, as e.g., in the Tregagno epidemic.[110] The volume of urine passed, however, depends largely upon the amount of fluids ingested, and the quantity of these diverted into other channels.

The urine may be suppressed, which is a very grave symptom, although complete suppression has continued for considerable periods with recovery. Uremia[111] often, but not invariably,[112] accompanies prolonged suppression.

The urine is usually foamy[113] and highly colored. It may be of a dark straw color, but it is oftener that of beer. Rarely it is smoky, oily, sticky, whitish, greenish or olive. It is heavily laden with excrementitious material and has a high specific gravity.[114] The amount of urea excreted is largely increased,[115] indicating an active retrograde metamorphosis of tissue[116] and a defective assimilation of the ingesta.[117] Urea continues to be excreted in large quantities up to the beginning of resolution, and very often for several days longer. The quantity of urine is generally too small to hold the urates in solution at a temperature below that of the body and they are thrown down, together with some of the uric acid,[118] as a reddish or fawn-colored precipitate upon the urine becoming cold.[119] The amount of uric acid excreted is also, sometimes greatly increased.[120]

In Zimmermann's cases the average was, during the incremental stage, 15 grains, during the decremental stage 13.5 grains and at the crisis 37.7 grains.

Poland[121] considers imperfect respiration the cause of the presence of uric acid in excess in the urine, but this is uncertain.[122]

The proportion of hippuric,[123] sulphuric[124] and phosphoric[125] acids are not perceptibly altered in this disease as evidenced by the salts excreted.

Simon[126] and Becquerel[127] long ago noticed a diminution of the chlorids in the urine in several inflammatory disorders, but to Redtenbacher[128] is due the credit of calling attention to the fact that in pneumonic fever they are entirely absent in a great majority of cases and are diminished in all,[129] even when they are largely ingested. This diminution or absence is most marked at the height of the disease, and they reappear with the cessation of the exudative process and the beginning of convalescence.[130] Inasmuch as the pneumonic exudate is peculiarly rich in the chlorid of sodium it is believed that this salt is diverted from the urine to the inflammatory exudate. So long then as the chlorids are diminished or absent in the urine we may be sure that the local lung trouble is in an actively progressive state, but when they begin to appear abundantly we may safely conclude that the inflammatory process is stationary or declining.

The quantity of chlorid of sodium excreted in the urine by a healthy adult is about one hundred and fifty-four grains in twenty-four hours.[131] It is derived from the blood and it follows that if the salt is deficient in this fluid it will be likewise diminished in the urine. Now it is found that in pneumonic fever the blood is deficient in these salts, and it is generally believed that this is attributable to the exudative process going on in the lungs.[132] Beale,[133] who studied this subject exhaustively, came to the following conclusion: 1, chlorid of sodium is totally absent from the urine of pneumonic patients at the period of complete hepatization;[134] 2, it reappears during resolution; 3, it exists in the blood in the greatest abundance when it appears most largely in the urine and *vice versa;* 4, it exists in large quantities in the pneumonic sputa; 5, there is reason to believe that it is determined toward the inflamed lung and is re-absorbed on the resolution of the process.

Chlorid of sodium appears scantily in, or is absent from the urine in other diseases besides the one under consideration, *e. g.*, bronchitis,[135] pleurisy,[136] phthisis,[137] cholera, rheumatism, typhus fever, cerebral abscess,[138] etc.

Albumen is present in the urine in a considerable number of cases[139]—especially severe and lingering ones—of pneumonic fever.[140]

Becquerel[141] found albumen present in 9 of 21 cases, 42.8 per cent.; Caton[142] in 4 of 85 cases, 5 per cent.; Finger in 15 of 33, cases, 45.4 per cent; Fox[143] in 10 of 32 cases, 31 per cent.; Griesinger[144] in 63 of 121 cases, 52 per cent.; Metzger in none of 48 cases; Parkes[145] in 6 of 13 cases, 46 per cent.; Solon[146] in 11 of 78 cases, 14 per cent., and Ziemssen[147] in 2 of 24 cases, 8.3 per cent. It occurred in about 10 per cent. of my cases.

It may appear at any time, but is oftenest noticed at the beginning of resolution, and continues several days.[148] It is an unfavorable symptom.[149] It has been a prominent feature of some epidemics, as *e. g.*, those of Tregagno[150] and Moringen.[151]

In pneumonic fever the latent albumen is sometimes not shown by the ordinary tests, but if the urine and nitric acid are boiled together and the tube be then plunged into very cold water a precipitate appears which does not re-dissolve on boiling.[152]

The albuminuria is due to an acute parenchymatous nephritis, which is a not infrequent complication.[153] As a rule the nephritic inflammation subsides with the progress of convalescence and terminates in complete recovery,[154] although chronic Bright's disease occasionally results.[155] In such cases dropsy ensues.[156] In nephritis the urine may be dark and smoky, with a deposit of casts, blood globules and other morphologic elements.

Peptonuria may be present,[157] especially in the final stages of the disease, in direct proportion to the activity of the absorption and elimination of the exudation material.[158] It has been thought that peptones in the urine denoted suppuration, and indeed it may well give rise to such suspicion when it is persistent, without any indication of resolution and general improvement. In a case of pneumonic abscess, observed by me in 1885, peptonuria was a marked symptom for several weeks. Peptonuria is not confined to pneumonic fever, but is met with in a variety of other diseases.[159]

The presence of peptones in the urine is readily discovered by Randolph's test. This test is based upon the fact that acid nitrate of mercury causes a red precipitate when added to a cold solution of iodid of potassium. If, however, peptones or the biliary salts are present the precipitate is yellow.[160] The question as to the presence of the biliary salts is readily eliminated.

The urine may contain bile pigments, especially in those cases accompanied by jaundice.[161] Elements of the blood may also be found, and in rare cases the urine may be actually hemorrhagic.[162] Poisonous alkaloidal substances—ptomaines and leucomaines—are sometimes found in abundance in the urine of pneumonic patients,[163] and such urine is highly toxic.[164]

The vesicle mucus is increased in quantity and there is a tendency in the urine to early decomposition.[165] Senger[166] "found micrococci in almost every case which he examined," but Seitz,[167] Neumann[168] and others have obtained negative results in their search.

Melaturia may be present, either as a symptom[169] or as a preceding condition.

In a certain proportion of persons, sugar, in small quantity is present in the urine for a long time without giving rise to any marked symptoms and without being in itself a dangerous condition, yet as a rule such persons will not survive an attack of pneumonic fever.[170]

Acetone may appear in the urine,[171] especially in those cases accompanied by high fever. It is more dangerous in adults than in children, but it is always of grave import. In these cases the breath exhales an acetous, fruity odor which is very characteristic.

Kreatinin in the urine is increased in amount during the acute stage,[172] but is diminished during the decline of the disease, especially if there is rapid wasting.[173]

With the beginning of the disease and until convalescence is declared, sexual desire is either impaired or abolished.[174] With recovery it returns with renewed vigor.

In one of my cases, a male, aged 24, a masturbator, after exposure to cold during convalescence, had epididymitis and nocturnal emissions. The semen stained the linen a light, but distinct, blue.[175]

The cremasters and scrotum are relaxed[176] and the penis flaccid. Edema of the genitals may be present.[177]

1 Peebles—Am. Jour. Med. Sci., May, 1848—found the gums spongy.
2 Am. Jour. Med. Sci., July, 1852.
3 After death the blue line of lead is turned yellow by chromic acid, and the yellow to black by hydric-sulphid. See Pepper, London Lancet, 1887, Vol. ii, p. 904.
4 Thompson, London Lancet, N. Y., 1852, Vol. i, p. 95.
4*a* See also Pause, Lungenentzündung, s. 69;—Piorry, mem. sur le diag., Paris, 1831;—et al.
5 Quoted by Chomel, Pneumonie, Leipzig, 1841, s. 39.
6 Occasionally the coating is very thick.
7 See Ehrhard, Preiaschr., Regensb., 1848;—Heiss, Inaug. Diss., München, 1857;—Hoefle, Chem. u. Mikroskop., Erlangen, 1848;—Lepecq de la Cloture. Observ. mal. epidem., Paris, 1776;—Lépine, Pneumonie, Wien., 1888;—Miquel, Prüger Vierteljahrschr., 1850;—et al.
8 Dickenson, N. Y. Med. Rec., April 21, 1888, p. 442;—Henning, ibid., Oct. 15, 1879; Todd, Med. Times and Gazette, May 15, 1852;—et al.
9 See Cœlius Aurelianus, Acut. Morb., Lib. ii, cap. xxv, et cap. xxix;—et al.
10 I have met this appearance in many cases. See also Gibbs, Cincinnati Lancet and Observer, April, 1861, p. 211;—Osborn, Braithwaite's Retrospect, June, 1852, p. 31;—et al.
11 See Louis, On Phthisis, Boston, 1843, p. 301.
12 Frenum.
13 Pneumonie u. Pleuritis, Würzb., 1880, s. 131.
14 Scheef, Inaug. Diss., Tüb., 1882, s. 38, has seen herpes on the gums, and Fox, Reynolds' Syst. Med., Phila., 1880, Vol. ii, p. 175, on the tonsils.
15 See Louis, op. cit., p. 298, et Fiev Typhoide, T. ii, p. 64;—Piorry, Du Diagnos.;—Stokes, Lecturea, 1832-33;—et al.
16 Works, by Adams, Vol. i, p. 195.
17 Rat. Med., 1792.
18 As a matter of fact I have recently had under my care a gentleman suffering with rheumatism who was always able to foretell exacerbations of pain by the tongue becoming dry, and their departure by returning moisture in the organ.
19 For further information see Bohler, Clin. Méd.;—Buttermann, Inaug. Diss., Griefsw., 1882, s. 23;—Fox, op. cit.;—Green, Quain's Dic. Med., N. Y., 1883, p. 880;—Koettnitz, Inaug. Dissert., Halle, 1882, s. 34;—Lépine, Pneumonie, Wien., 1883, s. 145;—et al.
20 Lungenentzündung, Leipzig, 1861.
21 Deutsches Arch. f. K. Med., 1878, s. 391.
22 Ziemssen's Handb. d. Spec. Path. u. Therap., Bd. v, Leipzig, 1877, s. 141.
23 Twelfth Report, p. 26.
24 N. Y. Med. Gaz., Oct. 15, 1881, p. 351.
25 Inaug. Dissert., 1884, s. 66.
26 Inaug. Dissert., Breslau, 1881, s. 52.
27 Inaug. Dissert., s. 38
28 See Gerhard, Am. Jour. Med. Sci., Vol. xiv, p. 328, and Diseases of the Chest, Phila., 1860, p. 200;—Holt, N. Y. Med. Rec., Jan. 3, 1885, p. 21;—Peacock, St. Thomas' Hospt. Rpts., Vol. v;—Struver, Phila. Med. News, April 29, 1882, p. 455;—Sturges, Pneumonie, London, 1876, p. 322;—et al.
29 Laveran, Gaz. Hebdom., 1865, No. 35.
30 See Wells, St. Louis Med. and Surg. Jour., January, 1878.
31 Juarez, Volkmann's k. Vorträge, Nr. 195, s. 22;—Wells, Cincin. Lancet and Clinic, July, 1879;—Wunderlich, Spec. Path. u. Therap., Bd. ii, s. 363.
32 See also Baronius, De Pleuropneumonia, Lib. ii, Farolivii, 1638;—Chomel, Pneumonie, Leipzig, 1841, s. 245;—Doubleday, N. Y. Med. Rec., March 28, 1885, p. 343;—Walshe, Dis. Lungs, Phila, 1860.
33 Walshe, op. cit.

34 Baginsky, Pneumonie u. Pleuritis, Würzb., 1880, s. 110.
35 Aretæus, Acut. Morb., Lib. II, cap. I;—Lépine, op. cit., s. 80.
36 See Ray, Ohio Med. Recorder, April, 1881, p. 498.
37 Bruntou, Pharmacology, Phila., 1885, p. 654, has seen food lie in the stomach four days, to be then vomited.
38 Cleghorn, Epidem. Dis. Minorica, London, 1762, p. 261; Thucydides, Opera.;—et al.
39 Pleuritis u Pneumonie, Berlin, 1862, p. 231.
40 Copland, Med. Dic., N. Y., 1855, Vol. III, p. 1081.
41 Mal. des. Enfants.
42 Op. cit., p. 230.
43 Amer. Jour. Med. Sci., Vol. xiv, p. 328.
44 See also Lépine, Pneumonie, Wien., 1883, s. 78.
45 See also Hermann, Lungenentzündung, Würzb.,'1880, s. 33;—Stortz, Inaug. Dissert., Würzb., 1884, s. 57; Koettnitz, Op. cit., s. 7;—Schapira, Inaug. Dissert., Würzb., 1877, s. 30.
46 See Fox, op. cit., p. 172; Swett, Dis. Chest., N. Y., 1856, p. 105.
47 See Mulreaney, London Lancet, N. Y., 1854, Vol. I, p. 429;—et al.
48 Especially indigestible food, warm teas, slops, stale lemonade, etc.
49 Hare, London Lancet, 1889, Vol. II, p. 216, records a case of stercoraceous vomiting.
50 Fiev. Typhoide, T. II, p. 465.
51 See also Hermann, op. cit., s. 36.
52 See U. S. Marine Hospt. Rpts., 1884, p. 190; Towusend and Coolidge, Trans. Am. Climat. Ass'n.
53 See also Doubleday, N. Y. Med Rec., Mar. 28, 1885, p. 343.
54 See Weaver, London Lancet, Apr. 7, 1883.
55 Habershon, London Lancet, N. Y., 1863, Vol. I, p. 263.
56 London Lancet, N. Y., 1854, Vol. I, p. 430.
57 See Andral, Dis. Chest. Phila., 1843, Vol. II; Chomel, Fiev. Typh., p. 241; Gerhard, Dis. Chest., p. 200;—Lebert, Berliner k. Woch., Sept. 4, 1871;—Louis, Rech. sur la gastro-enterits, T. I, p. 223;—Rooseveit Hospt. Rpts., 5th, p. 25;—Stortz, op. cit., s. 66.
58 See Osler, Phila. Med. News, Jan. 21, 1882, p. 80; U. S. Marine Hospt. Rpts., 1886, p. 226.
59 Bristowe, Quoted by Osler, op. cit., p. 80.
60 See Lepecq de la Cloture, Mal. Epidem., Paris, 1776.
61 See also Chomel, op. cit., s. 142;—Gerhard, Am. Jour. Med. Sci., Vol. xiv, p. 328;—Green, Quain's Dic. Med., N. Y., 1883, p. 877;—Juergensen, op. cit., s. 113;—Lépine, op. cit., s. 80;—Sturges, op. cit. p,. 227;—Swett, op. cit. p. 89;—Ziemssen, op. cit., s. 231; et al.
62 Schapira, Inaug. Dissert., s. 31, and Stortz, op. cit., s. 60, found the bowels regular in the largest number of cases.
63 See also Caton, London Lancet, 1884, Vol. II, p. 137 —Gerhard, Am. Jour. Med. Sci., Vol. xiv, p. 328;—Grisolle, Traité de la Pneumonie, Paris, 1861;—Hermann, op. cit., s. 33;—Holt, N. Y., Med. Rec., Feb. 14, 1885, p. 174; Louis, Fiev. Typhoide;—Peacock, St. Thomas Hospt. Rpts., Vol. v.;—Wiltshire, N. Y. Med. Jour., Sept. 21, 1889, p. 328;—et al.
64 See Athenian Plague, Thucydides;—Minorica epidemic, Cleghorn, op. cit.;—Moringen epidemic, Kühn, Arch. f. k. Med., Bd. xxi;—Kouen epidemic, Lepecq. de la Cloture, op. cit.
64 a See Dillon, London Lancet, 1884, Vol. p. 27.
65 See also Bristowe, Path. Trans., Vol. viii, p. 66; Doubleday, N. Y. Med. Rec., Mar. 28, 1885, p. 34;—Eberle, Prac. Med., Phila., 1831, Vol. I, p. 284; Fox, op. cit., p. 200; Huss, op. cit.;—Twining, Diseases of Bengal, Calcutta, 1835, Vol. I, p. 64;—et al.
66 U. S. Marine Hospt. Serv. Rpts., 1886, p. 170. Another similar case is recorded on p. 232. See also 1889, p. 295.
67 See Andral, Med. Clinic, Phila., 1843, Vol. II, p. 161;—Chomel, op. cit., s. 224;—Huss, op. cit., s. 14;—Northup, N. Y. Med. Rec., June 7, 1884, p. 651;—Roosevelt Hospt. Rpts., 1875 and 1880;—Virchow, Berliner klin. Wochenschr., Feb. 6, 1888, s. 114;—Waller, Inaug., Diss., Erlangen, 1877, s. 26;—et al.
68 U. S. Marine Hospt. Rpts., 1886, p. 223.
69 See Albutt, Practitioner, Feb., 1867, p. 109;—Lepecq de la Clotnre, op. cit.;—Murphy, Cincinnati Lancet and Observer, Aug., 1863, p. 471; Ogle, London Lancet, 1887, Vol. II, pp. 56–104;—Sibson, Trans. Prov. Med. Ass.oc., 1844, London Med. Gaz., 1848, Vol. vii, p. 1087 Brit. Med. Jour., Aug. 2, 1873;—U. S. Marine Hospt. Rpts., 1886, p. 226;—et al.
70 Cunning, Trans. Dublin College, Vol. v.
71 See also Baglivi, Prax. Med., p. 35; Caille, N. Y. Med. Jour., Jan. 19, 1889, p. 62;—Chambers, Lond. Lancet, N. Y., 1862, Vol. II, p. 260; Eberle, op. cit. p. 289;—Hamilton, Fevers of India, Allahabad, 1888;—Hippocrates, Opera.;—Lépine, op. cit., s. 39;—Riverius, Prax. Med., Lib. I, p. 72;—Speck, Inaug. Dissert., Marb., 1870, s. 29;—et al.
72 Successful cases have also been noted by Sturges, op. cit., p. 262; Waller, Inaug. Diss., Erlangen, 1877, s. 20;—et al.
73 See also Fox, op. cit., p. 181;—Mays, Therap. Gaz., 1885, p. 220;—Raven, London Practitioner, Vol. xxxi, p. 35;—et al.
74 See case by Pepper, Med. News, July 5, 1890.
75 See Chomel, op. cit., s. 245;—Deidier, Obsv. de Méd., T. II;—Sauvages, Nosolog. Meth., Amstelod., 1768;—et al.
76 See case by Herbert, Lancet, 1890, Vol. I, p. 1067.
77 See Davaine, Traité des Entozoaires, Paris, 1860.
78 Flint, Prac. Med., Phila., 1868, p. 490.
79 Frank, De Cur. Morb. Hom.
80 Watson, Proc. Phys., Phila., 1845, p. 841.
81 See Copland, Med. Dic., N. Y., 1855, Vol. III, p. 1546.
82 See Chauffard, Rev. de Méd., Sept., 1887;—Fox, op. cit., p. 185; Juergensen, op. cit., s. 137;—Wüller, Zeitschr. f. k. Med., Bd. xii;—N. Y. Med. Rec., Mar. 24, 1888, p. 332;—Parmentier, Gaz. des hôp., 1887,—p. 1142; Peacock, op. cit.;—Wendt, Rev. de Méd., Sept., 1887;—Stortz, Inaug. Dissert., Würzb., 1854, s. 66;—Flamer, Arch. f. k. Med., Bd. xi, s. 58;—Chvostek, Wiener Med. Jahresb., 1867, s. 87;—Schapira, op. cit., s. 36;—Grisolle, Traité de la Pneumonie, Paris, 1864;—Speck, Inaug. Dissert., Marburg, 1870, s. 28;—Dieti, D. Aderiarre in d. Lungenentzündung, Wein., 1853, s. 2.;—Wunderlich, Inaug. Dissert. Tüb., 1858, s. 28;—Leyden, Path. d. Icterus, s. 133;—Nauyan, Arch. f. Anat. u. Phys., 1869, s. 579;—Scheef, Inaug. Diss., Tüb., 1882, s. 36;—Schæffer, Inaug. Diss. Halle, 1885, s. 137;—et al.
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CARBUNCLE: ITS ETIOLOGY, PATHOLOGY AND TREATMENT.

Read before the First Pan-American Medical Congress.

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Carbuncle was formerly looked upon as a peculiar mysterious disease having a pathologic process of its own, with little or no relationship to any other disease, either in its etiology, its pathology, or its indications for treatment.

The teaching and especially the practice of the present day indicate that we are still in bondage to the traditions of the older pathology with respect to carbuncle, chiefly because it is one of those more common diseases which have received scant attention in later years on account of the allurements of visceral surgery, and the rewards of work and study in the newer fields.

A conviction that there are established facts and available knowledge respecting this disease, which are not fully reflected in the views and the practice of to-day, is sufficient justification for an effort to ascertain and correlate what is known of the cause and nature of carbuncle, and for urging a more rational and radical method of treatment.

The observation has often been made and should be reiterated that the names, anthrax and malignant pustule, should no longer be used interchangeably with carbuncle. To avoid confusion the latter term should be reserved exclusively to designate the disease under consideration, while the former should be applied only to that disease of the lower animals which is contagious, sometimes communicated to man, and is caused by the anthrax bacillus.

Etiology.—Carbuncle is a disease of microbic origin, like all of its class. This has been demonstrated by the researches of Garrè,[1] Bockhart,[2] Baum and others. The microörganism most frequently found is the staphylococcus aureus. In the minority of cases there are present also the staphylococcus albus or the streptococcus pyogenes, or the two together with the former, but always outnumbered by it. The coccus may enter the skin through the hair follicles, the sebaceous gland ducts, the sweat glands or an abrasion of the epidermis.[3] The organism may enter also through the alimentary canal or the respiratory tract. We are nowhere more in bondage to the traditions of the elders than in the belief that this disease is of constitutional origin. The notion that it is a disease of the cachectic, the alcoholic, the tubercular and the diabetic was easily believed and necessarily prominent before local causes were demonstrated. The most that can be rightly claimed for the constitutional factor is that it increases the vulnerability of the tissues and predisposes to acute suppurations in general, rather than to carbuncle in particular. Even the diabetic, so prominently associated with carbuncle, does not often have the disease. The writer believes, with others, that the systemic vices are greatly overrated as etiologic factors, and though no statistics are at hand to prove it, it is even believed that the disease is not found more often, relatively, in the cachectic classes than in those of good health. The association of these constitutional conditions with carbuncle, in a causative relation, is probably partly accounted for by the fact that statistics used by writers and teachers have been collected more from the older large public hospitals and almshouses rather than from private practice and the smaller modern private hospitals. Whatever may be the exact facts in relation to this question it is certain that whoever ignores the local origin and local nature of the disease is handicapped and disarmed for the proper treatment of his patient.

Carbuncle is a disease of middle life, while its near relation, furuncle, is preëminently a disease of the adolescent, a clinical fact which is to be accounted for on the ground of histological variations in the skin at these periods of life as given below.

Anatomy and Pathology.—Nosologically, carbuncle is one of the acute suppurative inflammations of connective tissue, and hence is generically related to osteo-myelitis, parenchymatous abscess, acute abscess and furuncle, as well as other suppurative dis-

eases of the skin. The essential unity of the group is shown when we consider that all have a local origin, all involve the same histologic structure, and all are due to the invasion of the same pus coccus; or at least one of the pyogenic cocci. The differences in clinical history, the divergence in pathologic process and the various modes of termination which are found when we compare the several diseases of this generic group with each other, are determined by differences in the anatomic structure of the region or organ concerned. These differences are quite as marked in the skin of different regions of the body when they are compared with each other, as are those found in one organ when compared with other organs. These variations in histologic anatomy relate to thickness, density, toughness, elasticity, vascularity, the surrounding attachments and the amount and mode of disposition of the adipose tissue.

It is these variations in histologic structure of the skin in different regions of the body, or the structural differences in the various strata of the skin in a given region, that determine whether in a given case of invasion by the pyogenic coccus we shall have a superficial pustulation, as impetigo; or a deeper and more extensive suppurative process, as furuncle; or a still more deeply seated and extensive one, as acute subcutaneous abscess, or carbuncle, as the case may be. When the coccus invades the mouth of the hair follicle, sebaceous gland or sweat gland, and is arrested there, we have impetigo[2] or one of its congeners. There is little tension, no stasis, no obstruction to the outflow of fluids or pus and no slough.

When the deepest part of the epithelial structures of the follicle, or the sebaceous or sweat gland is invaded a true furuncle is the result.[2] Here there is a degree of obstruction to the outflow of fluids and pus on account of the depth and partial closure of the passage way. Hence we have tension, stasis, liquification (pus), a limiting wall, and in the center a cone-like slough which consists of the remnants of the gland or follicle surrounded by as yet undigested connective tissue, especially fibers of the yellow elastic tissue.

But when the pus coccus passes beyond the epithelial layer of the skin into the cutis vera, the result is either an acute abscess[2] with its circumscribed cavity filled with digested connective tissue and inflammatory products, or, on the other hand, a carbuncle with its dense infiltrated mass of undigested connective tissue, without any circumscribed cavity. Whether it be an abscess or a carbuncle will depend on the histologic structure of the skin of the particular region invaded. The region of predilection of carbuncle is "the dense and fibrous integuments over the posterior median line of the body." The skin of this region is characterized by:

1. Its extreme thickness, especially the relative thickness of the cutis vera.

2. The aponeurotic-like density of the papillary layer and its having few and small openings.

3. The more direct connection of the subcutaneous tissue with the reticular part of the true skin, as one continuous structure.

4. The number and size of the polygonal spaces found in the subcutaneous and reticular strata, caused by the diverging and interlacing bundles of dense and not easily dissolved fibrous tissue which make up the framework of these strata. These polygonal spaces are chiefly occupied by adipose tissue constituting the paniculus adiposus, and a delicate network of fine easily digested connective tissue.

5. The presence of Warren's fat columns, extending from the adipose tissue below, to the base of the follicles of the lanugo hairs above, with their horizontal branches.[3]

6. The dense, tendon-like, cone-shaped fibrous bundles which extend from the base of the adipose columns obliquely to be inserted into the muscular fascia beneath.

The pus coccus having passed down and invaded these tissues, a focus of inflammation is begun and we have all the factors and conditions necessary for the production of a typical carbuncle. The delicate network of areolar adipose tissue succumbs readily and liquifies, and as tension increases pus is forced to the surface through the slender adipose columns into the hair follicles as the only means of escape. Thus we have the numerous pus points, and eventually the cribriform condition of the surface of the skin so characteristic of carbuncle[4]. As tension increases, the inflammation is forced to extend laterally further and further from the original focus through the polygonal spaces and channels occupied by the rapidly dissolving delicate connective tissue and fat. Thus we have the characteristic peripheral extension and the broad, flat indurated mass pressed between the still resisting dense papillary layer above, and the muscular fascia beneath, which are still firmly bound together by the tendon-like cones of fibrous tissue. If now an incision be made into this mass there would be seen the numerous small pus points and channels but no proper pus cavity; both of which conditions are well-recognized features of carbuncle. The process continues until the skin over the original focus becomes necrotic and sloughs away, thus reducing the tension and peripheral pressure and we have the first step towards the natural limitation of the disease. But if this infiltration and induration have already extended so far as not to be influenced by this diminution of tension it will continue to spread indefinitely or until the sloughing process following in its wake has gained on it sufficiently to entirely arrest the peripheral tension. After all the long-resisting, dense, fibrous parts described above, which began to die with the skin, have yielded and sloughed piecemeal, we have the crater-like cavity co-extensive with the indurated mass.

It is said carbuncle may occur on any part of the body, but this is not correct of true typical carbuncle conforming to a fixed definition. We can not have a typical carbuncle without continued surgical tension in inflamed tissues, one part of which resists the digestion or liquifying process of suppuration longer than other parts.

Many cutaneous inflammations are loosely called carbuncles, when they are simply abscesses. But as the characteristic features of the carbuncular skin are only typical in certain regions of the body, and are found more or less perfectly or imperfectly in other regions, it will often happen that a suppurative inflammation of the skin and subcutaneous tissue can not be definitely classed either as a carbuncle, an abscess or a furuncle; or that the characteristics of one predominate while those of the others are present in some degree.

Treatment.—The general indication for treatment is the same as in any other disease, viz.: To limit

its extent and duration. The special indications are to arrest suppuration and to prevent septicemia.

The history of the means and methods of treating carbuncle would fill a volume. Palliative means are useful and to be recommended if nothing better can be done. Many good surgeons advocate a purely expectant course and discard all active means, relying on internal medication, and treating it as a self-limited disease, not to be interfered with. Most surgeons, however, recognize the necessity of doing something to hasten the sloughing in order to relieve tension, and thus limit the extent of the disease and prevent absorption of diseased products.

Caustics, incisions—single, multiple, subcutaneous and the time-honored crucial incisions are relied on. These are to be recommended, also, if nothing more efficient can be done, but they are all inadequate to fulfill the indications, although they accomplish something. Scraping, as advocated by Page and Owen[5], and Mr. Teale, of Leeds[6], and even the "excision and scraping" as advocated by Rushton Parker[7] are valuable means in certain stages, after sloughing has begun. But these means are properly applicable only to those cases where the disease has ceased to extend, and are to be considered only as adjuvants to the incisions and caustics.

The injection of various antiseptics into the mass before sloughing has begun, as advocated by some, would hardly be relied upon by any one who had an adequate conception of the anatomy and nature of the disease. But it is not my purpose to review and compare discarded or prevalent methods. As a substitute for all of these, I would advocate total extirpation of the indurated mass, as we would remove a benign tumor. If this is done early the entire skin can be saved. If it is done later, there will be some loss of skin over the original focus but the patient will be saved from all the dangers of septicemia—the cause of death in carbuncle, usually miscalled exhaustion. If the patient already have septicemia and there remains a ring of indurated tissue beyond the sloughing center, extirpation is still the best means of saving the patient's life. It should be resorted to in all cases, whatever the stage of progress, except those in which the disease has clearly run its course, when the excision and scraping of Rushton Parker would be sufficient.

It is a rational, life-saving and time-saving method, and will commend itself to all who try it. All the reasons that call for amputation of a gangrenous limb can be urged in favor of total extirpation of carbuncle. The writer has practiced total extirpation in all suitable cases for the last five or six years.

The technique of the operation requires but few words. Anesthesia is required, which should be as brief as possible and not profound if the patient already suffers from septicemia.

A crucial incision should extend to just beyond the borders of the induration. The four flaps are to be dissected up to the limits of the disease, which can usually be made out easily, contrary to what is generally taught. Then with the volsella forceps and a knife the mass is readily dissected from its attachments to the deep fascia and removed entire or in sections, according to its size and condition. The four flaps are then stitched together toward the center, more or less closely, according to the amount of necrosis and sloughing. When the extirpation is done early, there will often be no loss of skin and but little subsequent discharge. There are no blood vessels in or under the skin in the carbuncular regions that should terrorize any one.

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UTRICULITIS; A CONTRIBUTION TO THE PATHOLOGY OF THE PROSTATIC UTRICLE.

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It is well known that the genital organs of the adult vertebrate are developed from two primitive organs of the embryo, the bodies named for Wolff and Müller; and that the sex of the individual varies with the relative development attained by these organs. In the future male animal the Wolffian duct furnishes the genital canal—epididymis and vas deferens—while the Müllerian duct suffers more or less complete atrophy; in the future female, on the other hand, the Müllerian duct furnishes the genital canal—Fallopian tubes, uterus and vagina (to the

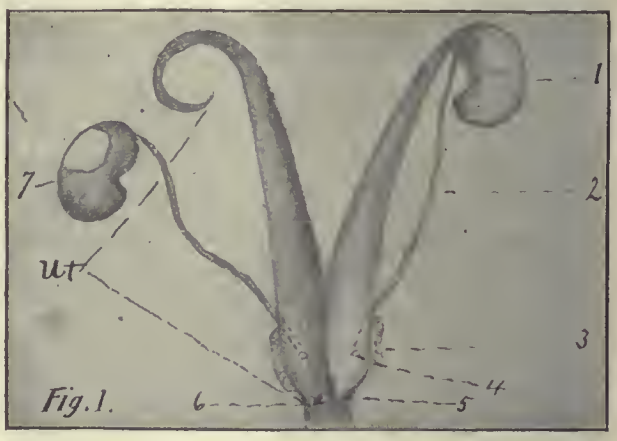


Fig. 1.—Internal genital organs of male guinea pig. 1, testicle; 2, vas deferens; 3, seminal vesicle; 5, orifice of vas deferens into utcrus; 5, orifice of uterus into urethra; 6, verumontauum; 7, testicle displaced to show extremity of uterus; *ut*, right masculine uterus (Müllerian duct). Prostate not represented.

hymen)—the corresponding portions of the Wolffian duct suffering atrophy. In the most highly organized mammals, the male genital canal acquires certain accessory sexual glands not constantly found in the lower vertebrates—seminal vesicles, prostate, Cowper's, urethral and preputial glands—while the Müllerian duct exhibits marked atrophy; in man there persist regularly only the two rudimentary extremities of this duct, the hydatid of the testicle and the prostatic utricle.

Yet in some species the Müllerian tract retains in the male, side by side with the fully developed Wolffian canal, a high degree of elaboration; among the many species of mammals that I have personally dissected, none presents a clearer picture of the complete Müllerian duct in the male than the familiar guinea pig. In this animal the testicles are abdominal organs, lying somewhat below the kidneys; the usual organs of the male mammal are well developed, but in addition there are found two large

tapering tubes, each arising as a blind extremity behind the testicle, describing almost a complete circle, passing behind the urinary bladder, and after receiving the ejaculatory duct opening into the urethra at the side of the verumontanum (Fig. 1). Each tube is therefore the complete Müllerian duct, whose homology with the internal sexual organs of the female guinea pig becomes apparent by inspection of Figs. 1 and 2; the ovaries differ from the testicles in their greater proximity to the kidneys; the Müllerian ducts (uteri) retain separate cavities until they reach the vagina.

In the human male, the lower end of the Müllerian duct persists as the so-called masculine uterus or prostatic utricle; though it is evident from comparative anatomic study that this rudiment represents the vagina rather than the uterus of the female. The term "prostatic utricle" conveys a second misconception, derived from human anatomy, as to the relations between prostate and utricle—namely that the latter is merely an appendage of the prostate. While this is usually the anatomic relation in man,

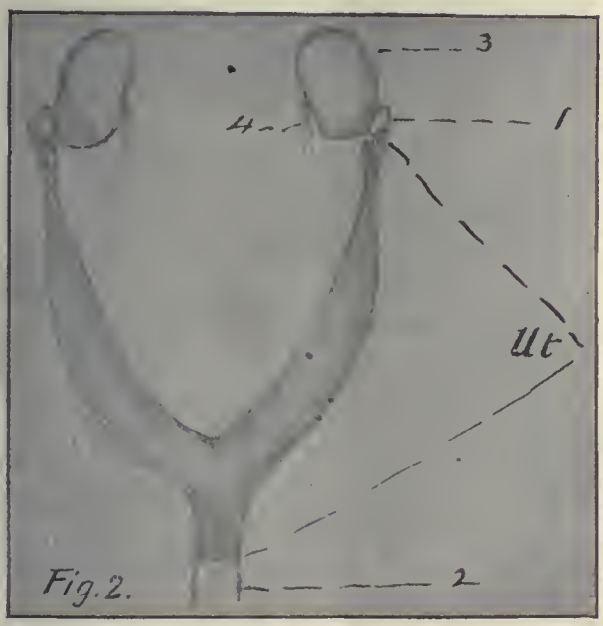


Fig. 2.—Internal genital organs of female guinea pig. 1, ovary; *ul*, left tube and uterus; 2, vagina; 3, kidney; 4, portion of ureter.

yet a study of their relations in various mammals shows this relative significance in the two organs to be reversed, *i. e.*, that the prostate is really an appendage of the utricle, an accessory and by no means constant gland of varied size and shape, always located—when present—at the orifice of the uterus (Müllerian duct). It is significant that in certain male mammals, *e. g.*, the ram, whose utricle is usually atrophied into a solid cord, the prostate is lacking entirely. In others—hare, squirrel, prairie-dog, for example—the prostate is a purely glandular structure which does not surround the urethra as in man, but lies entirely below this channel, being attached to the under surface of the utricle (Fig. 3); even in man the prostate is sometimes entirely suburethral—Dittel has dissected three such instances; and in the usual human prostate the *glandular* structures retain the original suburethral position, adjoining the utricle.

In a few animals, notably man, the prostate acquires an additional function—that of a vesical sphincter—quite foreign to its original universal office, that of a sexual gland; this is secured by the extension toward the bladder of muscular bands which encircle the urethra, *between this channel and the utricle* (Fig. 4).

This interposition of a complete muscular sphincter between utricle and urethra leads to the apparent burying of the utricle in the prostate; yet careful dissection will usually show that the body of the utricle is not surrounded by prostatic tissue; that it lies behind the prostatic sphincter (the "third lobe" of Sir E. Home) and between the upper ends of the lateral lobes, which separate to accommodate it (Fig. 5).



Fig. 3.—Part of bladder, prostate and urethra of hare, showing *suburethral* type of prostate found in many species. 1, bladder; 2, prostate; 3, urethra.

In other words its posterior surface and upper extremity are bordered, not by prostatic tissue but by the pelvic connective tissue. The clinical significance of this anatomic arrangement is apparent; a suppurative process in the utricle—and these must be frequent as extensions from the deep urethra—is separated from the pelvic connective tissue only by the thin wall of the utricle; it would seem *a priori* that peri-prostatic infection would be easier through the delicate extremity of the utricle than through the thick muscle and firm capsule of the prostate proper.

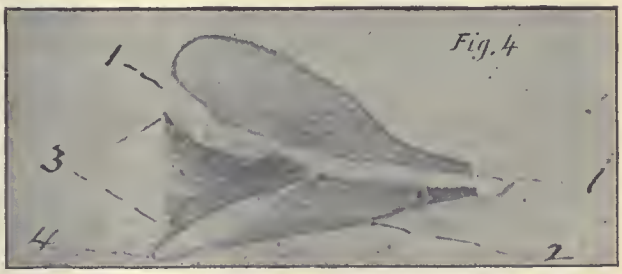


Fig. 4.—Longitudinal section human prostate, patient dead of consumption, aged 24. 1, urethra; 2, lateral lobe; 3, "third lobe" (between urethra and utricle); 4, utricle.

Though the pathologic and clinical possibilities of the utricle in man have been almost unnoticed, yet in a few cases the persistence of a large part of the Müllerian duct has been recognized; thus Martin records the persistence of Müller's ducts in a fetus at full time, and refers to a case wherein Boogaard discovered at the autopsy of an adult man, two complete Müllerian ducts extending from kidneys to urethra (Fig. 6). Rémy and Barth found in a 5-year-old boy a canal extending from a suprarenal capsule to the verumontanum, open from the summit of the

trigone; retention of urine requiring the use of the catheter, had repeatedly occurred. Reliquet found a complete Müller's duct in a man of 45 years. In Franque's case the Müllerian ducts of an adult man were found united into tubes, uterus and vagina opening into the prostatic urethra (Fig. 7).

Persistence of the entire Müllerian canal in the human male, as recorded in these cases, is doubtless a rare occurrence, a teratologic curiosity beyond clinical recognition or relief; but the distal extremity of the duct, the prostatic utricle, is a constant anatomic factor in man, to whose clinical importance it is the object of this paper to direct attention.

I have been able to find but one allusion to this topic in the literature accessible to me—the article of Englisch, who found in five out of seventy autopsies of new-born infants the utricle more or less distended, sometimes rivaling the urinary bladder in size; he suggests the probable dependence of urinary retention in the new-born upon the urethral obstruction due to this distended sac. There are recorded, however, several cases of retro-vesical cysts in adults, which, though apparently distended utricles, were assumed by the observers to have originated in the seminal vesicle. Thus N. R. Smith described as a

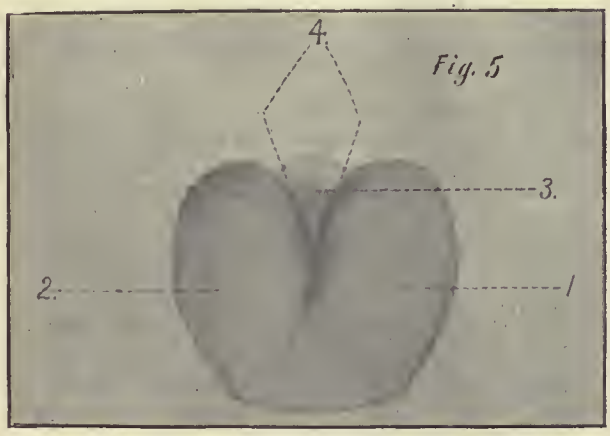


Fig. 5.—Rectal surface of human prostate (same as represented in longitudinal section in Fig. 4). 1, right lateral lobe; 2, left lateral lobe; 3, triangular space between upper extremities of lobes, occupied by utricle; 4, bristles passed into ejaculatory ducts.

"hydrocele of the seminal vesicle" in an adult, a pyriform tumor rising above the umbilicus and at first mistaken for a distended bladder; puncture per rectum evacuated ten pints of brown serous fluid. The description strongly suggests a distended utricle, the possibility of which is not mentioned by the observer. Ralfe records as a "cystic tumor of the left seminal vesicle" in an adult, a sac which was found on autopsy to have no communication with the vesicle, but arose from the prostate—probably a distended utricle; (evidently neither Smith's nor Ralfe's was a case of hydatid cyst, not uncommon in the male pelvis.)

The undistended utricle in man is a chestnut-shaped sac lined with mucous membrane in which are imbedded numerous racemose glands; its pointed extremity opens into the urethra through a narrow orifice in the verumontanum; its rounded base lies between rectum and bladder, and between the upper ends of the prostatic lobes laterally. Its depth, stated by anatomists to be one to one and one-half centimeters (four-tenths to six-tenths of an inch), I found to average in twenty-seven adults nearly one and one-half centimeters; the greatest depth I have observed is two and one-half centimeters, though Adams has measured a utricle over three centimeters deep. Occasionally distinct bifid prolongations—vestiges of the separate Müllerian canals—have been observed. In man, the ejaculatory ducts usually run in the lateral walls to separate exits into the urethra; sometimes one and rarely both ducts open into the utricle—a more frequent arrangement in other animals.

The utricle might, therefore, be expected to exhibit two morbid conditions: 1, distension of the sac with its own secretion after occlusion of its narrow urethral orifice; and 2, suppurative inflammation by extension from the deep urethra; in this case septic infection of the recto-vesical connective tissue surrounding the upper extremity of the utricle—"peri-prostatic" inflammation and abscess—would be a natural possibility.

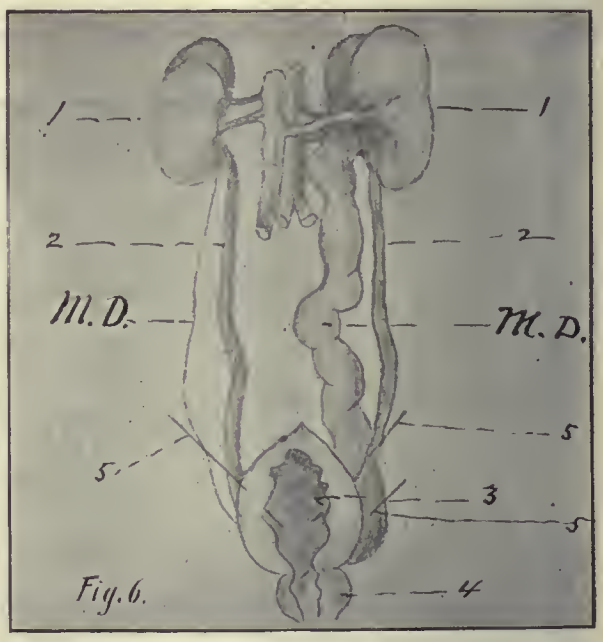


Fig. 6.—Müllerian ducts in adult man (Boogaard). 1, kidney; 2, ureter; 3, bladder; 4, prostate; 5, bristles in ureters and ducts; M.D., persistent Müllerian ducts (the right atrophied to a mere cord).

The first of these, the distension with physiologic products, has been proven by the observations of Englisch and others already mentioned; that suppuration in the utricle and vicinity is the explanation of cases of chronic prostatis, prostatic and peri-prostatic abscess, seems evident from the following personal observations:

Postmortem.—As prostatic suppuration is not commonly fatal, opportunity for postmortem observation is limited; only two cases have come under my observation since my attention has been directed to this subject:

1. A patient of Dr. J. C. Cook, of Hyde Park, Ill., about 40 years of age, had long suffered from the symptoms usual to vesical calculus; at intervals, bladder irritation and straining would become extreme, then several drachms of thick pus would be expelled from the urethra, after which the vesical symptoms would abate for a time, until the process was repeated—in short, a prostatic abscess seemed to

fill and discharge repeatedly. I saw the patient once with Dr. Cook; no stone was detected and a cystoscopic examination was agreed upon, but never executed. The patient dying a few weeks later of cystopyelitis, the bladder and prostate were kindly sent to me. There was a fibrous polyp of the fundus of the bladder; the utricle was over an inch deep, distended with pus, and projected nearly half an inch above the prostate; the surrounding recto-vesical tissue hard, the seminal vesicles somewhat distended but not inflamed.

2. A man 62 years old, upon whom I made suprapubic cystotomy for stone, died six weeks later of chronic uremia; the symptoms of vesical irritation persisted after operation. Autopsy showed chronic cysto-pyelitis; the utricle presented the appearance of an evacuated abscess cavity and extended almost to the level of the summit of the trigone; the recto-vesical connective tissue was brawny and contained a small abscess contiguous to, but apparently not communicating with, the utricular cavity.

Clinical.—While a clinical diagnosis of utricular abscess lacks the certainty of anatomic demonstration, yet the following cases seem incapable of other explanation:

A commercial traveler, aged 40, was referred to me by Dr. H. M. Lyman, of Chicago, in December, 1890. For three years he had had the usual history

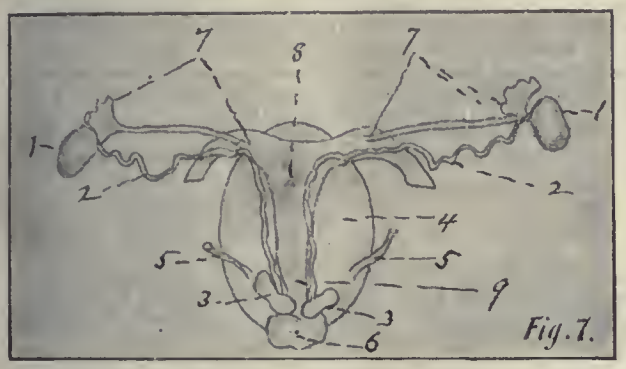


Fig. 7.—Müllerian ducts (tubes, uterus and vagina) in adult man (Franque). 1, testicle; 2, vas deferens; 3, seminal vesicle; 4, bladder; 5, ureter; 6, prostate; 7, Fallopian tube; 8, uterus; 9, vagina.

of chronic prostatitis in a marked degree, with much rectal irritation, though repeated examinations had failed to disclose any morbid condition of the rectum; no anterior urethritis in eighteen years. In December, 1890, after a severe jolting, the symptoms were aggravated, culminating ten days later in complete retention of urine. While straining to urinate he had a sensation as of "something breaking," immediately followed by a discharge per urethram of an ounce or more of thick, offensive pus; urination became at once possible.

I first saw him a few hours after this episode; the prostate was symmetrically swollen and tender, the space betweeen the seminal vesicles tense and tender, the vesicles themselves not especially sensitive.

For several months, in spite of irrigations, injections and instillations of the deep urethra, the abscess cavity kept filling and at intervals discharging (with the urine) quantities of extremely fetid pus. I then made, in the Presbyterian Hospital, a perineal urethrotomy, expecting to find and curette a prostatic abscess cavity; but the prostatic urethra appeared to the finger quite normal. The operation and subsequent drainage caused no appreciable improvement in the symptoms. About this time the probability that the utricle was the abscess cavity occurring to me, I passed a narrow knife from the perineum into the bladder between the upper extremities of the lateral prostatic lobes so as to pierce the utricle; a small drainage tube was left in the track of the knife, and the cavity irrigated with hydrogen peroxid. Complete healing was secured; urine and urination became normal and so remained a year later, when patient was last seen.

I can recall several prior cases which probably belonged to the same category, though unrecognized at the time; cases in which, as in the instance just related, perineal urethrotomy and drainage failed to relieve a chronic prostato-cystitis, or even to reveal any morbid feature of the bladder neck (tuberculosis having been certainly excluded); and in two cases of prostato-cystitis apparently due to early prostatic enlargement, thorough stretching of the prostate and drainage through a perineal incision failed to relieve, even temporarily, any of the symptoms. In one of these, complete relief followed the spontaneous emptying of a "prostatic" (perhaps utricular) abscess some months after operation. Two years ago while examining for Dr. Henrotin, of Chicago, a man 60 years old, suffering from prostato-cystitis attributed to prostatic enlargement, I compressed the recto-vesical tissue between a sound in the bladder and a finger in the rectum; the urine passed immediately afterwards contained a quantity of fetid pus. The symptoms of cystitis, which had been pronounced and constant for a year, entirely disappeared within two weeks; and fourteen months later urine and urination were still perfectly normal.

With Dr. W. K. Harrison, of Chicago, I saw a man 65 years old, who for several years had had the usual history of a prostatic; during the last six months urination had become practically dependent upon the catheter; the urine contained some blood but only a little pus. The prostate and recto-vesical tissue were swollen. Two days later I made a perineal urethrotomy; the exploring finger found a swelling at the floor of the urethro-vesical orifice which burst under pressure, discharging perhaps an ounce of pus; the empty cavity was found to occupy the position of the utricle. There was no decided hypertrophy of the prostate.

Such experiences have led me to think that utriculitis is often a factor in the production of the prostatic and vesical symptoms attributed to prostatic enlargement as well as of the apparent enlargement itself, which is certainly at times edematous and inflammatory rather than hypertrophic; and that operative measures for the relief of prostatic enlargement should provide for drainage of the prostatic urethra and of the utricle. I have elsewhere (Journal American Medical Association, April 7, 1894) described, as "posterior prostato-cystotomy," an operation which seems to possess certain advantages over the supra-pubic incision; among others it affords access to the utricle, seminal vesicles and prostatic urethra, whose morbid conditions are apt to be confounded with "cystitis."

Summary.—1. The rudimentary extremity of the Müllerian duct in the human male, commonly termed the prostatic utricle, is not wholly inclosed by the prostate, but is partly bordered by the pelvic connective tissue.

2. It presents two morbid conditions: *a*, distension with the products of its own glands; and *b*, suppurative inflammation; the latter may infect the contiguous recto-vesical connective tissue.

3. The almost complete inclosure of the utricle by the prostate results in a community of morbid processes, and of clinical symptoms.

4. In cases of prostato-cystitis from any cause, prostatic and peri-prostatic abscess, the possibly important rôle of the utricle should be considered.

5. Because of the minute size and frequent occlusion of the urethral orifice of the utricle, the usual methods of medicating the deep urethra can not be relied upon to influence a morbid process in the utricle itself.

6. The utricular cavity can be reached (aside from the possibilities of the endoscope) in three ways: *a*, through an aspirating needle passed from the perineum into the triangular space between the upper extremities of the lateral prostatic lobes; *b*, through a puncture with a narrow knife passed from perineum to bladder through the triangular space mentioned, with appropriate drainage; this can be readily added to the ordinary drainage of the bladder by perineal urethrotomy; *c*, by incision into the ischio-rectal fossa and separation of rectum from prostate.

7. Disease of the utricle seems to have been erroneously attributed to the seminal vesicle.

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CLINICAL HISTORY OF THE CASE OF PRESIDENT JAMES ABRAM GARFIELD.

BY ROBERT REYBURN, A.M., M.D.

PROFESSOR OF PHYSIOLOGY AND CLINICAL SURGERY MEDICAL DEPARTMENT HOWARD UNIVERSITY, WASHINGTON, D. C., AND ONE OF THE ATTENDING SURGEONS IN THE CASE OF PRESIDENT GARFIELD.

(*Continued from page 549*).

August 24, 8:30 A.M. Temperature 98.5; pulse 100; respirations 17. August 24, 12:30 P.M. Temperature 99.2; pulse 104; respirations 17. August 24, 6:30 P.M. Temperature 100.7; pulse 108; respirations 19.

August 24 8:30 A.M. The President passed a very good night awakening at longer intervals than during several nights past. He continues to take liquid food by the mouth with more relish, and in such quantity that the nutritive enemata were suspended for the present. Shortly after the noon bulletin was issued, an incision was made into the swelling on the right side of the President's face for the purpose of relieving the tension of the swollen parotid gland and giving vent to pus, a small quantity of which was evacuated by the operation. The seat of the incision was sprayed with carbolic acid, but no anesthetic was given him, and he bore the operation well. He has not suffered from nausea to-day. 6:30 P.M. His temperature this afternoon is, however, higher than yesterday at the same hour, and his pulse somewhat more frequent.

The President continues to be very anxious to leave the White House. To-day he asked Dr. Bliss if he could be removed by the time cold weather came. Dr. Bliss told him he would be removed as soon as his stomach was all right. "It's all right now," said the President. "I want to get away. If we can't go to Mentor, I want to go down the river on the *Tallapoosa*." (Steamship.) The President slept most of the night, but his sleep was broken and disturbed. Professor Agnew, who had returned to Philadelphia on the 23rd inst., was telegraphed for, and joined in the morning consultation of the 25th.

August 25. This morning the President is taking liquid food in sufficient quantity so that the nutritive enemata have not been renewed. August 25, 8:30 A.M. Temperature 98.5; pulse 106; respirations 18. August 25, 12:30 P.M. Temperature 99.2; pulse 112; respirations 19. August 25, 6:30 P.M. Temperature 99.8; pulse 112; respirations 19.

Many statements having become current to the effect that the condition of the President was greatly influenced by the miasma generated by the marshes which existed south of the White House; the matter was carefully considered by the attending and consulting surgeons this morning, and they issued the following bulletin after the morning dressing of the wound:

AUGUST 25, 9:15 A.M.

The subject of the removal of the President from Washington at the present time was earnestly considered by us last night and again this morning. After mature deliberation the conclusion arrived at by the majority was that it would not now be prudent, although all agree that it will be very desirable at the earliest possible moment at which his condition may warrant it. We are, moreover, unanimously of the opinion that at no time since the injury has the President exhibited any symptoms of malaria.

(Signed) FRANK H. HAMILTON,
D. HAYES AGNEW,
D. W. BLISS,
J. K. BARNES,
J. J. WOODWARD,
ROBERT REYBURN.

A little more pus came from the incision in the parotid gland to-day, but the swelling of the gland remains stationary. During the past three days the President's demands for his removal to some other locality have been frequent and almost imperative. He is most anxious to go some place, but not to the Soldiers' Home. He will not think of that. He has been very restless over the subject, and his determination to be taken to another place has been the cause of much anxiety in the sick room. Upon that subject alone he has refused to be guided by his physicians and friends. He refuses to pay any attention whatever to statements that it was impossible to take him away from the White House. After he had been told that he could not with safety be removed, he would not be in the least convinced, but would still as earnestly and persistently say that he must get away. Mentor is where he specially wants to go. Next to that he wants to be taken on board the steamer *Tallapoosa* for a cruise upon the salt water. His persistence in this matter may perhaps be explained by the fact that whenever he went upon a sea voyage he was always greatly benefited thereby. At 6:30 P.M. the wound was dressed as usual, and no unfavorable change has been observed in his condition. He has taken by the mouth a sufficient supply of liquid food.

August 26, 8:30 A.M. The President slept most of the night, awakening at intervals of half an hour to an hour. On first awakening there was, as there has been for several nights past, some mental confusion,

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which disappeared when he was fully aroused, and occasionally he muttered in his sleep. These symptoms have abated during this morning, as on previous days. At present his temperature is slightly above the normal, and his pulse a little more frequent than yesterday morning.

August 26, 8:30 A.M. Temperature 99.1; pulse 108; respirations 17. August 26, 12:30 P.M. Temperature 100; pulse 118; respirations 18. August 26, 6:30 P.M. Temperature 99.9; pulse 116; respirations 18.

After awakening this morning the President's mind seemed perfectly clear, and he conversed rationally with the surgeons about the condition of the inflamed parotid gland. At the morning dressing of the President it was observed that pus from the parotid swelling had found its way spontaneously into the right external auditory meatus, through which it was discharging; some pus was also being discharged through the incision made over the swollen parotid gland, and also into the mouth, having dissected its way along the course of Steno's duct.

His wound looks as well as it has done for some time past. His pulse and temperature are at the present higher than at the corresponding hour for some days past. He continues to take by the mouth the liquid food, and it seems to be assimilated without difficulty, nevertheless we can not but regard his condition as extremely critical.

August 26, 6:30 P.M. The President's condition has not materially changed since the noon bulletin was issued. He occasionally asks for food, and since yesterday forenoon, commencing at 11:30 A.M., the nutritive enemata have again been given at regular intervals, as a means of administering stimulants as well as nutrients. The President seems drowsy and slept a considerable part of the day.

August 27, 8:30 A.M. The President slept from half an hour to an hour or more during the night. He continues to retain the liquid food given by the mouth, and the stimulating enemata; nevertheless his pulse has become more frequent since midnight, and at 6 A.M. this morning was so flickering and irregular that it was impossible to count it. He is evidently feebler this morning than yesterday.

August 27, 8:30 A.M. Temperature 98.4; pulse 120; respirations 22. August 27, 12:30 P.M. Temperature 99.6; pulse 120; respirations 22. August 27, 6:30 P.M. Temperature 98.9; pulse 114; respirations 22. At the morning dressing no material change was observed in the wound, and the parotid swelling appeared to be in the same condition as yesterday. The temperature which was slightly subnormal in the morning, rose a little over one degree (Fahrenheit) by noon, and during the morning the pulse was somewhat fluctuating.

August 27, 8:30 P.M. There was no improvement in the condition of the President at the time the noon bulletin was issued; during the afternoon, however, his symptoms showed a slight amelioration. His pulse became less frequent, and his temperature a little lower (98.9 F.). The mental disturbance mentioned in yesterday morning's bulletin has disappeared. The parotid swelling has discharged a little pus by the opening spontaneously formed into the ear as well as by the incision made, but it is not perceptibly smaller. The liquid food given by the mouth and the enemata continue to be retained: 10:30 P. M. The President seems more comfortable. This has been a gloomy day at the White House. The surgeons and attendants were on duty all night, and for almost the first time the President expressed himself in terms of discouragement about his own case, and inquired anxiously about his symptoms. His mind is perfectly clear.

August 28, 8:30 A.M. The amelioration in the President's symptoms announced in last evening's bulletin continued during the night, and since midnight some further improvement has taken place. The pulse has progressively diminished in frequency. The stomach has continued to assimilate the liquid nourishment administered, and last evening he asked for and ate a small quantity of milk toast. Stimulating and nutritive enemata continue to be retained. There has been no mental disturbance during the night or this morning.

August 28, 8:30 A.M. Temperature 98.4; pulse 100; respirations 17. August 28, 12:30 P.M. Temperature 99.5; pulse 104; respirations 18. August 28, 6:30 P.M. Temperature 99.7; pulse 110; respirations 20.

August 28, 12:30 P.M. At the morning dressing of the President several yellowish points were observed just below the ear over the swollen parotid, and an incision being made about a teaspoonful of pus escaped. There was also some discharge of pus through the two openings (into the ear and the one made by the incision) mentioned in previous bulletins. The wound looks rather more healthy than it has been doing for several days past. Since the morning bulletin there has been a slight rise of temperature though but little increase in the frequency of the pulse.

August 28, 6 P.M. The improvement in the President's condition still continues. He continues to take willingly the liquid food given him, and also retains the stimulants and nutrients given him by enema. His pulse is stronger than it was at the same hour yesterday, and but little rise in temperature has taken place since noon.

August 28. This day (Sunday) was intensely hot, the thermometer ranging over 98 degrees F. during the entire day, and the cooling apparatus was put in operation to the great relief of the suffering President. This day prayers were offered on behalf of the President in all the churches of Washington City, and indeed in nearly all the churches in the country. During the evening I told him of the prayers so universally being offered in his behalf. With a sad and pathetic smile he answered: "I am glad of it; I have need of them."

August 29, 8:30 A.M. The President's symptoms this morning are as favorable as they were yesterday at the same hour. Last night was spent much more comfortably by the President than the previous one. He was restful and there was none of the hacking cough that had disturbed him the night before. He slept (awakening at intervals) the greater part of the night. At these intervals he took and retained the liquid nourishment administered. His mind continues perfectly clear.

August 29, 8:30 A.M. Temperature 98.5; pulse 100; respirations 17. August 29, 8:30 A.M. Temperature 98.6; pulse 106; respirations 18. August 29, 6:30 P.M. Temperature 100.5; pulse 110; respirations 18.

August 29, 12:30 P.M. At the morning dressing another small incision was made in the lower part of

the swelling on the right side of the President's face, which was followed by a free discharge of pus. A similar discharge took place through the other openings. The swelling is perceptibly smaller and looks better. The wound remains in an unchanged condition, and during the dressing this morning the catheter used in injecting and cleansing the wound passed downwards to a depth of twelve inches. There has been little rise of temperature since the morning, but the pulse is more frequent.

August 29, 6:30 P.M. The President has been comparatively comfortable during the day. He has taken the usual amount of nourishment by the mouth, with stimulating enemata at stated periods. His rise of temperature this afternoon is one degree F. less than yesterday at the same hour, and his pulse is less frequent than at noon to-day. The parotid swelling has been discharging more freely, and is continuing to diminish in size.

Queen Victoria through Minister Lowell sent on Saturday a message to Secretary Blaine saying: "I am most deeply grieved at the sad news of the past few days, and would wish my deep sympathy to be conveyed to Mrs. Garfield."

August 30, 8:30 A.M. Last night was an uneventful and quiet one for the President, as he slept the greater portion of the night. The rise in temperature last night was due no doubt to the accumulation of pus in the swollen parotid, and subsided as soon as it was evacuated.

August 30, 8:30 A.M. Temperature 98.5; pulse 102; respirations 18. August 30, 12:30 P.M. Temperature 98.9; pulse 116; respirations 18. August 30, 6:30 P.M. Temperature 99.5; pulse 109; respirations 18.

August 30, 12:30 P.M. At the morning dressing another small incision was made in the lower part of the swelling on the right side of the President's face, which was followed by a free discharge of pus. A similar discharge took place through the other openings. The wound in the body remains in an unchanged condition. There has been a very slight rise in the temperature since the morning dressing, but the pulse is more frequent. In other respects his condition remains about the same.

August 30, 6:30 P.M. The President has had a fairly comfortable day. The only solid food given him was a little soft milk toast, with occasionally a spoonful of chicken jelly. He took his liquid food as usual with the nutritive enemas. The President complained this afternoon of pain in the parotid gland, which is discharging freely, and is continuing to diminish in size. His temperature this afternoon is a degree (F.) less than it was yesterday at the same time, and his pulse is less frequent than at noon to-day. The pus in the track of the wound in the body is dissecting its way downwards towards the right iliac fossa and a probe can be easily passed downwards to the extent of twelve inches. This channel was kept free from accumulations of pus by being irrigated with weak solutions of carbolic acid or permanganate of potash twice a day; while doing this the catheter was carefully withdrawn so as to avoid undue distension of the track of the wound.

August 31, 8:30 A.M. The President passed a very tranquil night. The sensitiveness of the parotid gland of which he complained yesterday afternoon abated, and he was without pain from that cause. In addition to the liquid food given him, he received a small piece of steak of which he swallowed the juice.

August 31, 8:30 A.M. Temperature 98.4; pulse 100; respirations 18. August 31, 12:30 P.M. Temperature 98.4; pulse 95; respirations 17. August 31, 6:30 P.M. Temperature 98.6; pulse 109; respirations 18.

August 31, 12:30 P.M. At the morning dressing the parotid gland was found to be discharging freely. It has materially diminished in size, and the openings made in it show evidences of the formation of granulations around their edges.

August 31, 6:30 P.M. The President has passed a better day than he has had for some time past. He has taken his food with increased relish, and the usual afternoon rise of temperature did not occur. At the evening dressing the solution of permanganate used to wash out the parotid abscess found its way to the mouth, which it did not do this morning, showing that an opening into the mouth has spontaneously occurred.

During the past two weeks a number of pustules of acne, many of which suppurated appeared in the axillæ, and later four or five appeared on the trunk of the body; these were about the size of large peas, and were opened as soon as they suppurated. These were evidently due to the septic condition of the President's system. The small carbuncle mentioned in the report of the autopsy upon the body of the President was no doubt due to the same cause. The above were the only suppurating surfaces, excepting the incisions made into the wound, and four small superficial bedsores formed on the sacrum, which were observed on the body of the President during his illness.

Professor Agnew returned to Philadelphia to-day, and was relieved by Professor Hamilton.

September 1. About 9 P.M. last evening the President became restless and somewhat feverish. His pulse was somewhat irregular and fluctuating, and varied from 108 to 116 per minute. This condition which was unaccompanied by rigors or sweating, had subsided by midnight and after that time he slept fairly well.

September 1, 8:30 A.M. Temperature 98.4; pulse 100; respirations 17. September 1, 12:30 P.M. Temperature 98.6; pulse 108; respirations 18. September 1, 6:30 P.M. Temperature 99.4; pulse 108; respirations 18.

September 1, 12:30 P.M. At the morning dressing of the President the abscess of the parotid was found to be discharging freely and continuing to diminish in size. The state of the wound remains the same. His general condition is not materially different from what it was yesterday at the same hour, except that the pulse is somewhat more frequent. This morning in addition to his liquid refreshment he took a little beefsteak (swallowing the juice) and some gruel.

September 1, 6:30 P.M. The condition of the President has not materially changed since the noon bulletin, except that there has been a moderate rise this afternoon amounting to one degree (F). The question of the removal of the President to a more salubrious and cooler location was discussed at the meeting of the surgeons to-day, but on account of the absence of Professor Agnew the final settlement of the question was deferred until his arrival, which will take place the day after tomorrow. The President slept well during the night, and his condition was much more satisfactory than during the previous night. He waked at intervals, and at such times was

given more nourishment than usual. There was but little fever during the night. The condition of the parotid gland and wound remains the same.

September 2, 8:30 A.M. Temperature 98.4; pulse 100; respirations 17. September 2, 12:30 P.M. Temperature 98.7; pulse 100; respirations 18. September 2, 6:30 P.M. Temperature 99.2; pulse 104; respirations 18.

Among the many suggestions made respecting the removal of the President, one is for his removal by the Pennsylvania Railroad to Elberon, and the other is for a trip by water on the steamer, *Tallapoosa*.

The mails each day bring hundreds of letters containing all manner of plans for removing the President, and suggestions as to where he should be taken. After the noon examination to-day by Dr. Bliss, General Swaim, Colonel Rockwell, Ensign Hunt and Private Secretary Brown drove down to the Navy Yard to inspect the *Tallapoosa*, and see what quarters and accommodations there would be for the President on board the vessel.

September 2, 6:30 P.M. The President passed a comfortable day, and this evening appears to be better than for some days past. He has taken a larger quantity of nourishment than usual, and manifested greater relish for it. The parotid gland continues to diminish in size. Wound shows no change.

September 3, 8:30 A.M. The President was somewhat more restless than usual during the early part of the night, but slept better after 1 A.M. This morning his general condition does not differ materially from what it was at the same hour yesterday, except that there is a slight increase in the frequency of the pulse. He is a little weaker than yesterday, but otherwise there is no change.

September 3, 8:30 A.M. Temperature 98.6; pulse 104; respirations 18. September 3, 12:30 P.M. Temperature 98.4; pulse 104; respirations 18. September 3, 6:30 P.M. Temperature 99.6; pulse 102; respirations 18.

Professor Agnew arrived this morning. There is a general agreement among the medical attendants that the condition of the President is unfavorably influenced by the excessive heat of the weather, and by the noxious emanations from the Potomac River flats immediately south of the Executive Mansion. The rank vegetation which fertilized by the city sewerage, and stimulated by abundant water and hot sunshine, covers these flats during the summer, is now beginning to decay, and since yesterday morning a faint malodorous mist has hung over the river on the south side of the Executive Mansion grounds to the Long Bridge. The prevailing winds in Washington are southerly during the summer months, and these winds brought the emanations from the flats (or marshy grounds) directly to the windows of the President's room. The risk incurred in removing the President did not seem to the surgeons to be as great as it would be if he was retained in his present location in the White House. Besides his liquid nourishment the President to-day took a little milk toast, and some of the breast of reed birds. His general condition remains the same as yesterday. After consultation it was unanimously agreed that the sea voyage on the steamer *Tallapoosa* would not be advisable, nor likely to result in any permanent benefit to the President.

September 4, 8:30 A.M. The President vomited once late last evening, and once an hour after midnight. Notwithstanding this disturbance he slept well most of the night, and this morning has taken his food without any nausea. His pulse is a little more frequent, but in other respects his condition is about the same as at this hour yesterday.

September 4, 8:30 A.M. Temperature 98.4; pulse 108; respirations 18. September 4, 12:30 P.M. Temperature 98.4; pulse 106; respirations 18. September 4, 6:30 P.M. Temperature 99; pulse 110; respirations 18.

September 4, 6:30 P.M. The President has passed a comfortable day. He has taken his food with relish, and has had no return of the irritability of stomach mentioned in this morning's bulletin. The parotid swelling is now so much reduced that the contour of the face is restored. The rise of temperature this afternoon has been very slight, but his pulse is more frequent. He seemed more exhausted than usual after the dressings of his wound, and is perceptibly weaker. He is becoming quite impatient in his desire to leave the White House for Elberon. The tenacious mucus which has been discharged in great quantities from the right side of the President's mouth has been to him a great source of annoyance and distress. This was coincident with the inflammation of the parotid gland, and as it will be remembered resulted in the formation of an abscess, which opened spontaneously, through the external auditory canal of the right ear, on August 26, and on August 31 discharged itself into the mouth. During the early stages of the inflammation of the parotid there was such rigidity of the masseter muscle that the jaws were so firmly fixed as to preclude the possibility of opening the mouth sufficiently for satisfactory examination. An interesting fact was observed that the inflammation of the mucous membrane of the mouth seemed to extend by continuity to the mucous membranes of the pharynx, larynx, trachea and bronchia. The physical signs developed the fact that acute bronchial catarrh was the sequel. Hypostatic congestion of the lungs was observed for some weeks before the President was taken to Elberon, more extensive on the right side than on the left, on account of decubitus. On the right side of the body it extended to the sixth rib posteriorly, while on the left side it was comparatively slight.

September 5. The President was restless during the early part of the night, but slept fairly well after midnight. There was no recurrence of the vomiting in the night nor was there any this morning. His pulse fluctuated during the night a good deal, and he was feverish and restless. In the night he commenced talking about the arrangements for his removal, and although every effort was made to pacify him, he persisted in talking of the matter and arranging the details of his departure. Dr. Bliss and the other surgeons told him that all arrangements were being made as rapidly as possible, and that as soon as they were completed, they would start on their journey. This morning he took beef extract and chicken broth for breakfast.

September 5, 8:30 A.M. Temperature 99.5; pulse 102; respirations 18. September 5, 12:30 P.M. Temperature 99.5; pulse 104; respirations 18. September 5, 6:30 P.M. Temperature 99.8; pulse 108; respirations 18.

The first thing the President asked Dr. Bliss this morning when he went into his room was: "Well, is this the last day in the White House?" Dr. Bliss

tried to quiet him, but he said: "No, no, I don't want any more delay." About 2 A.M. this morning the special train which is intended for the conveyance of President Garfield and the party accompanying him to Elberon arrived at the Baltimore & Ohio depot. It will be composed of an anthracite coal burning engine No. 569 (selected on account of its absence from dust), President Roberts' special car, two Eastlake cars and a baggage car. Car No. 33, which is to convey the President, has been thoroughly renovated. The seats were all taken out and a false top was placed a few inches above the roof of the car, in order to give the air an opportunity to circulate between it and the roof, so as to keep the air cool. Wire gauze was fastened on the outside of the car, completely inclosing the parlor for the President, thus keeping it free from dust. The inside was hung with heavy curtains, and Brussels carpet was laid on the floor. The method of removal of the President determined on was to take him from the White House on a stretcher in a covered wagon to the corner of Sixth Street and Pennsylvania Avenue, where he will be lifted into the car provided for his reception. To make this possible, Chief Engineer Walters had on the ground this morning a force of three hundred men, who at once proceeded to lay a temporary railroad track from the east side of Sixth Street to the main railroad track, a distance of over three hundred yards. In less than two and a half hours the rails were in place, and a train with gravel to ballast it was ready to work. Professor Hamilton preceded the rest of the party, and went to Elberon in advance, so as to have everything ready before the President's arrival. Notice has been given to all conductors and engineers to be on the lookout for the warning of the coming of the Presidential train. Immediately on the receipt of information that the train has left Washington, the trains going south on the Baltimore & Potomac Railroad will be stopped or switched off, until the train containing the President has passed by. It is intended that no noise of passing trains shall disturb the President, and for that reason trains going in opposite directions will wait until the special Presidential train has passed them. It having been decided by the surgeons that the President should be removed to Elberon, situated near Long Branch on the coast of New Jersey, the journey took place to-day. The details as to the precautions taken to secure his safe transit were of the most minute character, and every provision was made to meet such emergencies as might arise; even to the extent of providing places on the road for his removal from the train, during the journey, in case he should show symptoms of exhaustion.

(*To be continued.*)

Minority Report on Revision of the Constitution and By-Laws of the American Medical Association.

To the President and Members of the American Medical Association:

Gentlemen:—At the last meeting of the ASSOCIATION the Minority Committee made a preliminary report against the Majority Committee's revision, and now proposes, as a substitute for the Majority Committee's work, the following constitution and by-laws, to which are appended some explanatory notes for the convenience of delegates.

AMERICAN MEDICAL ASSOCIATION.

PLAN OF ORGANIZATION, CONSTITUTION AND BY-LAWS.

WHEREAS, The Medical Convention, held in the city of New York in May, 1846, has declared it expedient, "for the medical profession in the United States to institute a National Medical Association"; and inasmuch as an institution so conducted as to give frequent, united and emphatic expression to the views and aims of the medical profession in this country, must at all times have a beneficial influence, and supply more efficient means than have hitherto been available for cultivating and advancing medical knowledge; for elevating the standard of medical education; for promoting the usefulness, honor and interests of the medical profession; for enlightening and directing public opinion in regard to the duties, responsibilities and requirements of medical men; for exciting and encouraging emulation and concert of action in the profession; and for facilitating and fostering friendly intercourse between those who are engaged in the practice of medicine; therefore be it

Resolved, In behalf of the medical profession of the United States, that the members of the Medical Convention, held in Philadelphia in May, 1847, and all others who, in pursuit of the objects above mentioned, are to unite with or succeed them, constitute a National Medical Association; and that for the organization and management of the same they adopt the following regulations:

CONSTITUTION.

ARTICLE I.—*Title and Objects of the Association.*

SECTION 1.—This organization is known as, and shall be designated the American Medical Association.

SEC. 2.—The objects of the Association shall be:

1. The cultivation and advancement of medical knowledge.
2. The elevation of the standard of medical education.
3. The promotion of the usefulness, honor, and interests of the medical profession.
4. The protection of public health.
5. The enlightenment of the people concerning the duties, responsibilities and requirements of medical men.
6. The encouragement of emulation among members of the profession.
7. The furtherance of concert of action in the profession.
8. The establishment of friendly relations among members of the profession.

ARTICLE II.—*Members.*

SECTION 1.—The Association shall be composed of members of the medical profession who shall be known as: 1, delegates; 2, permanent members; 3, members by invitation; and 4, members by application. These several classes of members shall collectively represent the common interests of the medical profession in every part of the United States.

SEC. 2.—The delegates shall receive their appointment from permanently organized State medical societies and associations in affiliation with the American Medical Association, from the medical departments of the Army and Navy, and from the Marine-Hospital Service of the United States.

SEC. 3.—Each delegate shall hold his appointment one year, but may be appointed every year, and shall be entitled to take part in all the affairs of the Association.

SEC. 4.—State medical societies and associations in affiliation with the American Medical Association shall be entitled to appoint delegates in the proportion of one for every ten of their regular members, and one for every additional fraction of more than half of that number.

SEC. 5.—Any medical society or association that

fails to adopt the American Code of Ethics, or that has intentionally violated or disregarded any article or clause thereof, shall not be entitled to representation in the American Medical Association.

Sec. 6.—The Medical Corps of the United States Army, Navy, and Marine-Hospital Service shall each be entitled to appoint four delegates.

Sec. 7.—The permanent members shall be those who have served as delegates and continue to comply with the requirements of the by-laws and ethics of this Association.

Sec. 8.—Permanent members may take part in the scientific and social proceedings, but shall not be entitled to vote.

Sec. 9.—Permanent members are authorized to introduce, by letter or in person, to the Committee of Arrangements, regular physicians of good repute who indorse the Association's ethics and who may wish to attend a meeting of the Association as members by invitation.

Sec. 10.—The members by invitation shall be regular physicians, in good standing, from foreign countries and from sections of the United States which are not represented by delegates or by permanent members at the meeting to which they may be invited by the Association.

Sec. 11.—Physicians who are proposed for membership by invitation shall be introduced to the Committee of Arrangements and vouched for by three members in attendance, or by letters from three absent delegates or permanent members.

Sec. 12.—Members by invitation may take part in the scientific and social proceedings of the Association, but shall not be entitled to vote; their connection with the Association shall continue until the close of the meeting at which they are received.

Sec. 13.—The members by application shall be such members of societies and associations entitled to representation by adopting the American Code of Medical Ethics, as shall make written application for admission to the Treasurer of the American Medical Association.

Sec. 14.—Each application shall be accompanied with the amount of the annual dues, and a certificate of good standing signed by the president and secretary of the society of which the applicant is a member.

Sec. 15.—The names of members by application shall be placed upon the roll of membership of the Association; these members shall have all the privileges of permanent members and shall retain their membership on the same terms.

Sec. 16.—Graduates of such regular schools of dental and oral surgery as require of their students a high standard of preliminary and general education, and a term of professional study equal to that demanded by the best class of medical colleges, and embrace in this curriculum all the fundamental branches of medicine; differing chiefly by the substitution of practical and clinical instruction in dental and oral surgery, in place of practical and clinical instruction in general medicine and surgery, shall be recognized as members of the regular profession of medicine, and be eligible to membership in this Association on the same conditions and subject to the same regulations as other members.

Article III.—*Further Conditions of Admission to Membership.*

Section 1.—All classes of members shall subscribe to the American Code of Medical Ethics.

Sec. 2.—All classes of members whose dues are fully paid shall receive gratis the Journal of the American Medical Association.

Sec. 3.—Every delegate, prior to the permanent organization of an annual meeting, shall exhibit his credentials to the proper committee and sign these regulations, inscribing his name and address in full, and giving the title of the institution from which he has received his appointment. He shall not be entitled to take part in any of the proceedings until he shall have complied with these requirements.

Sec. 4.—None of the other classes of members shall take part in the proceedings to which they may be entitled until they have signed these regulations; inscribing their names and addresses in full and specifying the capacity in which they attend: Whether as permanent members, as members by invitation, or as members by application.

Sec. 5.—No physician who shall be under sentence of expulsion or suspension from any medical society, or whose name shall have been dropped from the rolls for non-payment of dues, shall be received as a delegate to this Association, or be allowed any of the privileges of a member, until he shall have been relieved from the sentence or disability, or shall have paid all arrears of membership dues; nor shall any person not a member and supporter of a local medical society, where such exists, be eligible to membership in the American Medical Association.

Sec. 6.—No member expelled from this Association shall be received as a delegate or member, except by a vote of three-fourths of the delegates present at the meeting to which he is sent or at which he is proposed.

Article IV.—*Titular Officers and Committees.*

Section 1.—The titular officers of the Association shall be: A President; four Vice-Presidents; a Permanent Secretary; an Assistant Secretary; a Treasurer, and a Librarian. With the exception of the Permanent Secretary, these officers shall serve for the period of one year.

Sec. 2.—The committees shall be: Five standing committees; one special committee, appointed by the delegates, and as many other special committees as may be required.

Sec. 3.—The standing committees shall be: a Judicial Council; a Board of Trustees; a Committee on American Medical Necrology; a Committee of Arrangements, and a Committee on Scientific Contributions.

Sec. 4.—The special committee, appointed by and from the delegates present, shall be known as the Nominating Committee. Such other special committees as may be necessary shall be appointed by the President of the Association.

Article V.—*Amendments.*

Section 1.—No part of this constitution shall be amended, altered, rescinded, or abolished, and no addition shall be made thereto, except at a regular annual meeting of the Association, after due notice of such amendments, alterations, excission, abolition, or additions shall have been given in writing by a delegate, at the preceding annual meeting, and then only by a vote of three-fourths of the delegates present.

Article VI.—*Enactment of the Constitution.*

Section. 1.—This constitution shall go into effect immediately.

SEC. 2.—All sections or parts of sections of the prior constitution or by-laws, and all ordinances, declarations, or resolutions not in harmony with this amended Constitution are hereby repealed.

BY-LAWS.

ARTICLE I.—*Meetings.*

SECTION 1.—The regular meetings of the Association shall be held annually and shall last at least four days.

SEC. 2.—The particular place and time for each yearly meeting shall be determined by a vote of the Association on recommendation by the Nominating Committee.

SEC. 3.—Special meetings of the Association may be called, for urgent and extraordinary occasions, by the Judicial Council, but to decide the question of meeting, at least a three-fourths vote of the Council shall be required. For this end each member of the Council shall be polled through a printed communication, approved and signed by the President and Permanent Secretary of the Association together with five members of the Council, stating the particular object or objects, the place, time and duration of the meeting, and ending with, Are you in favor of holding this proposed special meeting?

SEC. 4.—Whenever the Judicial Council shall have determined the place and time of a special meeting, the Secretary of the Council shall make an announcement thereof in the JOURNAL of the Association at least three weeks in advance of the time of meeting.

SEC. 5.—No business other than that stated in the announcement shall be transacted at any special meeting.

SEC. 6.—At annual meetings of the Association there shall be two sessions each day, a morning and an afternoon session.

SEC. 7.—During the morning session of each day the general affairs of the Association shall be transacted; addresses shall be delivered; reports of committees made; communications from the Secretary read; and miscellaneous questions examined or referred to standing or special committees.

SEC. 8.—During the afternoon session of each day, beginning at 2 o'clock, essays, reports and communications of a scientific character may be presented by all classes of members. For these purposes the Association shall be divided into the following named Sections:

1. Practical Medicine and Physiology.
2. Obstetrics and Diseases of Women.
3. Surgery and Anatomy.
4. State Medicine.
5. Ophthalmology.
6. Diseases of Children.
7. Dental and Oral Surgery.
8. Medical Jurisprudence and Neurology.
9. Dermatology and Syphilis.
10. Laryngology and Otology.
11. Materia Medica and Pharmacy.

ARTICLE II.—*Nominations.*

SECTION 1.—During a recess of twenty minutes at the first morning session of the Association the accredited delegates shall meet in groups representing each of the States and Territories, the District of Columbia, the Army, the Navy and the Marine-Hospital Service; each group being authorized to select one delegate who shall serve as a member of the Nominating Committee.

SEC. 2.—The chairman of each group of delegates shall, as soon as practicable, report the name of the delegate, chosen as member of the Nominating Committee, to the Permanent Secretary who, before adjournment of the morning session of the first day, shall announce the formation of the Committee, the names of its constituent members, and the hour and particular place of the meeting.

SEC. 3.—The Nominating Committee thus constituted shall open its first session on the afternoon of the first day and elect a chairman and secretary.

SEC. 4.—In shall be the duty of the Nominating Committee to recommend to the Association for action: The President; the four Vice-Presidents; the Permanent Secretary, when that office shall be vacant; the Assistant Secretary; the Treasurer; the Librarian; the names of delegates to fill all vacancies in the first four Standing Committees, the names of three members, the first of whom shall deliver an address on general medicine, the second on general surgery, and the third on State medicine—each of these addresses not to exceed one hour in its delivery which shall be during a morning session of the Association, and to suggest the place and time of the next annual meeting.

SEC. 5.—The selection of titular officers and standing committees for nomination shall be made only among delegates present at the meeting, except in the case of the Committee of Arrangements, of the Committee on American Medical Necrology, and of those members who shall deliver addresses at the general sessions of the Association. In these cases the Committee shall act at discretion.

SEC. 6.—The Nominating Committee shall make its report to the Association during the morning session of the third day whenever practicable.

ARTICLE III.—*Duties of the Titular Officers.*

SECTION 1.—The President and Vice-Presidents shall assume the duties of their respective offices at the close of the meeting at which they were elected.

SEC. 2.—The President shall preside at the meetings, preserve order and decorum in debate, give a casting vote when necessary, and perform all the other duties that custom and parliamentary usage may require.

SEC. 3.—The Vice-Presidents, when called upon, shall assist the President in the performance of his duties, and during the absence, or at the request of the President, one of them shall act in his place.

SEC. 4.—The Permanent Secretary shall record the minutes, and authenticate the proceedings of the Association; give due notice of the place and time of each annual meeting; notify all members of their appointment and of the duties assigned them; hold correspondence with permanently organized medical societies, both domestic and foreign; carefully preserve the archives and unpublished transactions of the Association, and deliver to the Trustees all materials ordered to be published. The Permanent Secretary shall be a member of the Committee of Arrangements.

SEC. 5.—The Assistant Secretary shall aid the Permanent Secretary in recording and authenticating the proceedings of the Association; serve as a member of the Committee of Arrangements, and perform all the duties of Permanent Secretary temporarily whenever that office may be vacant.

SEC. 6.—The Treasurer shall have the immediate charge and management of the Association's funds, and shall, through the Board of Trustees, present an annual report, in detail, of the state of the treasury, and a duly authenticated account of receipts and expenditures during the current year. He shall give bonds to the Board of Trustees for the safe keeping and proper use and disposal of his trust.

SEC. 7.—The Librarian shall receive and preserve all the property in books, pamphlets, journals and manuscripts presented to or acquired by the Association; record their titles in a book prepared for that purpose; and acknowledge receipt of all property to him transferred.

ARTICLE IV.—*The Judicial Council.*

SECTION 1.—The Judicial Council shall consist of twenty-one delegates elected by the Association on recommendation by the Nominating Committee. The term of office of members of this Council shall be three years.

SEC. 2.—The Council shall appoint one of its members as presiding officer and another as secretary, who shall keep an accurate permanent record of the Council's proceedings and prepare all reports to be presented to the Association.

SEC. 3.—It shall be the duty of the Council to take cognizance of, and decide all questions of an ethical or of a judicial character that may arise in connection with the Association.

SEC. 4.—All subjects that do not pertain to the Board of Trustees, to the Committee of Arrangements, or to other committees; all questions of a personal character, including complaints, protests and irregularities in credentials; shall at once and without debate, be referred to this Council whose decisions, on these and all other questions shall be final and shall be reported to the Association at the earliest moment.

SEC. 5.—The Council shall hold its annual meeting on the day before the first morning session, and such other meetings as may be necessary during or after morning sessions of the Association. In the course of the current year, urgent questions may be settled by correspondence on the same plan as that indicated below in Section 2, Article V.

ARTICLE V.—*The Board of Trustees.*

SECTION 1.—The Board of Trustees shall consist of nine delegates elected by the Association on recommendation by the Nominating Committee. The term of service of members of this Board shall be three years.

SEC. 2.—The Board shall hold its annual meeting on the day before the first morning session, and such other meetings as may be necessary during or after morning sessions of the Association. In the course of the current year, urgent questions may be settled by written votes, provided that the questions to be determined be presented in writing, or in type, and in identical language, to each member of the Board.

SEC. 3.—The Board shall appoint one of its members as presiding officer, and one as secretary, who shall keep an accurate record of the proceedings and prepare all reports to be presented to the Association.

SEC. 4.—It shall be the duty of this Board to provide for and superintend the publication and distribution of such proceedings, transactions and memoirs of the Association as may be ordered to be published, in such manner as the Association may direct; to cause to be printed all these proceedings, transactions and memoirs in the form of a weekly publication which shall be styled THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION: and to appoint an editor and such assistants as may be needed to carry on the publication and distribution of the JOURNAL. The Board shall be authorized to determine the pay of the editor and of all subordinate persons engaged in the work of printing, proof reading, publication and distribution of all the Association's documents.

SEC. 5.—The editor of the JOURNAL shall not publish editorially, expressions contrary to the objects, ethics or discipline of the Association. Such expressions shall be regarded as disloyal to the Association whose principles he shall voice.

SEC. 6.—The secretaries of the several Sections, during the annual meetings, or as soon thereafter as possible, shall deliver to the Board of Trustees, or to its accredited agent, all papers, discussions, addresses and other documents designed for publication in the JOURNAL.

SEC. 7.—All propositions for the appropriation of money shall be referred to the Board of Trustees, with instructions to inquire closely into the nature and objects of such propositions and report thereon before final action by the Association.

SEC. 8.—Moneys derived from the business of the JOURNAL or accruing from other sources, to the benefit of the Association, and received by the Board of Trustees or its agents, shall be paid to the Treasurer of the Association.

SEC. 9.—Every order on the Treasurer for the disbursement of money in connection with the work of publication, or for the payment of other accounts against the Association, shall be indorsed by the presiding officer and secretary of the Board of Trustees.

SEC. 10.—The Board of Trustees shall hold the official bond of the Treasurer, shall annually audit and authenticate his accounts, and shall embody a statement thereof in his yearly report to the Association.

SEC. 11.—The Board of Trustees shall cause to be printed in the JOURNAL, once yearly, a list of the members, the Constitution and By-laws and the Code of Ethics of the Association, and to be inserted at the beginning of each volume of the JOURNAL the following disclaimer: The American Medical Association, although accepting and publishing the reports of the several standing committees, and memoirs, essays and discussions of members, assumes no responsibility whatsoever for the opinions, theories or criticisms therein contained, except when otherwise decided by special resolution.

SEC. 12.—No address, paper, or report shall be entitled to publication in the JOURNAL for the year in which it shall be presented to the Association, unless it be placed in the hands of the Board of Trustees, or of its accredited agent, on or before the first day of July. The document shall be so prepared as to require no material alteration or addition by its author.

SEC. 13.—Authors shall be required to return proofs of their compositions within a week after receiving them; otherwise they may be omitted from the JOURNAL.

SEC. 14.—Every paper received by the Association and ordered to be published, and all plates or other means of illustration, shall be the exclusive property

of the Association and shall be published and sold for the benefit of the Association.

SEC. 15.—The Board of Trustees shall have full discretionary power to omit from publication the whole or a part of any paper that may be referred to it by the Association, or by any of the Sections, unless specially instructed to the contrary by vote of the Association.

ARTICLE VI.—*The Committee on American Medical Necrology.*

SECTION 1.—The Committee on American Medical Necrology shall consist of one member from each State, and from each of the other interests entitled to representation in the Association.

SEC. 2.—The chairman and other members of this Committee shall be recommended by the Nominating Committee to the Association for election.

SEC. 3.—It shall be the duty of members of this Committee to procure memorials of the dead among eminent and distinguished physicians of their respective States and Territories, and transmit these memorials to the Chairman of the Committee on or before the first of April of each and every year.

SEC. 4.—The Chairman of the Committee shall make an annual report to the Association.

ARTICLE VII.—*The Committee of Arrangements.*

SECTION 1.—The Committee of Arrangements shall consist of not less than seven delegates, including the Permanent Secretary and the Assistant Secretary of the Association. The Chairman of this Committee and the Assistant Secretary, together with four delegates, shall be elected by the Association on recommendation by the Nominating Committee, and shall all be residents of the city where the meeting of the Association shall be held.

SEC. 2.—The Committee of Arrangements shall be authorized to increase the numbers of its members whenever there is need of such increase, and to hold such conferences as may be necessary prior to the annual meeting of the Association during the whole of which the Committee shall be in session.

SEC. 3.—It shall be the duty of this Committee to provide suitable accommodations for the meetings of the Association; to verify and report upon the credentials of membership; to issue credentials of membership to such physicians as fulfill the required conditions; to publish the rules governing the reading and discussion of papers, and the order of business of the general and sectional meetings; to receive and announce the titles of all papers and communications to be presented; and, with the aid of the Secretaries of the several Sections, determine the order in which the papers shall be read and discussed.

SEC. 4.—This Committee shall cause each member, of whatever class, to register, upon a blank prepared for the purpose, his name, address, source of appointment, place of residence during the meeting, and the name of the Section with which he wishes to be identified.

SEC. 5.—The Committee shall prepare a separate roll, by State and other interests represented, of all delegates present, for convenience of calling the ayes and nays when these are demanded during a morning session.

SEC. 6.—The Committee of Arrangements shall be authorized to invite distinguished laymen and also foreign medical men to take part in the scientific and social proceedings as guests of the Association.

SEC. 7.—The Association shall pay all necessary expenses for the announcement of the meeting, the publication of the programs, the cards of membership, the rental of a hall for the general meetings, and the rooms for meetings of Sections. If the Committee of Arrangements incurs other expenses it shall meet them from its own resources. The chairman of this Committee shall make his annual report at the first general session of the Association, and such special reports thereafter as may be necessary.

ARTICLE VIII.—*Dues of Members.*

SECTION 1.—The dues of all classes of members shall be five dollars a year. This shall entitle each member to receive gratis the JOURNAL of the Association for the current year. The payment of their dues shall be made by these members before they shall be entitled to take part in any of the Association's proceedings. Members not in attendance shall send their dues to the Treasurer.

SEC. 2.—Any member who shall fail to pay his dues shall no longer be entitled to receive the JOURNAL and, unless absent from the country, shall be dropped from the roll of the Association after having been notified of the forfeiture of his membership.

ARTICLE IX.—*Funds and Appropriations.*

SECTION 1.—Funds shall be raised by the Association to meet current expenses and awards, from year to year, but never with a view of creating a permanent income from investments. These funds shall be obtained from the annual dues of members, the business of the JOURNAL, and the sale of the Association's publications. Special funds may be raised through voluntary subscriptions for particular objects.

SEC. 2.—Funds may be appropriated: To defray the expenses of the Permanent Secretary in conducting the necessary correspondence of the Association, and his personal expenses in attending the annual meetings; to publish the Association's proceedings and transactions; to enable the standing committees to fulfill their respective duties, conduct their correspondence, and procure materials necessary for the completion of their annual reports; to encourage scientific investigation by prizes and awards of merit, and to defray expenses incidental to particular investigations under the instruction of the Association. Funds thus appropriated shall be paid by the Treasurer on an order from the Board of Trustees.

ARTICLE X.—*Ethics and Discipline.*

SECTION 1.—The Code of Ethics, adopted in 1847, as a condition of membership, and as it appeared with explanatory declarations in the JOURNAL of the Association, Nov. 19, 1892, shall constitute a part of the Association's laws.

SEC. 2.—The kinds and degrees of discipline of members, beyond dropping of names from the roll for non-payment of dues, shall be censure, suspension, or expulsion from the Association.

SEC. 3.—In case the Judicial Council shall be officially notified, by any organization in affiliation with this Association, of the expulsion from such organization of a member who is also a member of this Association, the name of such member shall be dropped from the roll of this Association, and he shall be notified of the fact and of the reason which led thereto.

SEC. 4.—The Judicial Council shall hear all complaints against members for conduct prejudicial to the interests of the Association or for violation of its laws. The Council shall notify any member against whom a charge has been preferred to appear in his defense, and shall at the same time furnish the accused with a copy of the charge or charges made against him. The accuser shall also be notified to appear with documents or witnesses and give evidence in the case. The accused shall be entitled to be aided in his defense by a member of the Association who shall act as his counsel, and the accuser shall likewise be aided in the prosecution by a member of the Association who shall act as his counsel. The Judicial Council shall appoint three of its members to sit as judges, who shall at the conclusion of the trial report the result thereof, for review, to the Council, whose decision shall be final.

SEC. 5.—A charge or charges against a member shall be made in writing, signed by the member making the charge or charges, inclosed in a sealed envelope, indorsed, "Charge or Charges against a Member," and shall be sent to the Secretary of the Council, to be by him presented to the Council.

SEC. 6.—The Council shall investigate all apparently flagrant violations of the Code of Ethics by a member, even without receiving formal charges from another member, and shall proceed with and decide the case as provided in Section 4 of this Article.

ARTICLE XI.—*Order of Business at the General Sessions.*

SECTION 1.—The order of business at the general sessions of the annual meetings of this Association shall, at all times, be subject to the vote of three-fourths of all the delegates in attendance; and, until permanently altered, except when for a time suspended, it shall be as follows:

1. Calling the meeting to order by the President or, in his absence, by one of the Vice-Presidents.
2. Report of the Committee of Arrangements.
3. Reception of guests.
4. Election of permanent members.
5. President's address.
6. Reports of special committees.
7. Voluntary communications, their reference to appropriate sections.
8. Recess of twenty minutes, on the first day, for the appointment of members of the Nominating Committee.
9. Announcement of the formation of the Nominating Committee.
10. Address on medicine, second day; address on surgery, third day; address on State medicine, fourth day.
11. Reports of the standing committees.
12. New business, first and fourth days.
13. Report of the Nominating Committee, and selection of the place of next meeting, third day.
14. Unfinished and miscellaneous business.
15. Reading of the minutes by the Secretary.
16. Adjournment.

ARTICLE XII.—*Rules of Order.*

Rule 1.—One hundred and fifty delegates, representing not less than twenty States, shall constitute a quorum for the transaction of business at the general sessions of the Association.

Rule 2.—Each member wishing to address the Association shall first give his name and that of his State (or, if a Government officer, his title) which shall be distinctly announced from the chair. The member may then be required to speak from the stand, but not more than ten minutes.

Rule 3.—Any member appointed on a special committee who, accepting the appointment, fails to act, shall not be continued on this Committee, and shall not be appointed on any other committee unless he offer a satisfactory excuse.

Rule 4.—No new business or resolutions by members shall be introduced at the general sessions of the second and third days, except reports of committees as otherwise provided.

Rule 5.—When a motion is under debate, no motion shall be received except motions to adjourn, to lay on the table, for the previous question, to postpone, to refer, or to amend, which several motions shall have precedence in the order in which they are enumerated in this rule.

Rule 6.—A motion for the previous question shall not be entertained unless it be seconded, and supported by at least twenty delegates. When the main question is put under force of the previous question and negatived, the question shall remain under consideration, the same as if the previous question had not been enforced.

Rule 7.—Motions to adjourn, to lay on the table, and for the previous question shall be decided without debate.

Rule 8.—Every delegate present shall vote on all questions unless excused from voting by the President with the consent of the Association.

Rule 9.—The ayes and nays on any question, when called for by five delegates, shall be decided without debate, and shall be recorded in full in the minutes of the Association.

Rule 10.—After a question has been decided in general session, except one of indefinite postponement, any two delegates who voted with the majority may, at the same or any subsequent general session of the same meeting, move a re-consideration thereof, without which no discussion of such question shall be allowed.

Rule 11.—Every delegate shall have the right to speak once on any question under consideration, but not oftener, unless by permission of the Association.

Rule 12.—All questions of order not provided for in these rules shall be determined in accordance with the rules of order embodied in Cushing's "Manual of Parliamentary Practice."

ARTICLE XIII.—*Delegates to Foreign Medical Societies.*

SECTION 1.—The President shall be authorized annually to appoint delegates to such foreign medical and other scientific societies as are in sympathy with this Association.

SEC. 2.—Suitable credentials signed by the President and Permanent Secretary of the Association will be given to those members who desire to represent abroad the American Medical Association.

ARTICLE XIV.—*The Sections of the Association.*

SECTION 1.—The several Sections of the Association shall be composed of all the classes of members. At the time of registering his name, on the blank supplied by the Committee of Arrangements, each member shall signify, in writing, the Section whose meetings he purposes to attend and with which he desires to be identified.

SEC. 2.—The Sections shall hold their sessions

during the afternoon of each day of the Association's annual meeting, beginning at 2 o'clock.

SEC. 3.—The officers of each Section shall be a Chairman, a Secretary, and an Executive Committee.

SEC. 4.—A new Chairman and a new Secretary shall be elected every year by each Section, on recommendation by a Nominating Committee appointed on the first day by the Section. On the second day the Committee shall make its report, which shall include the nomination of the Executive Committee.

SEC. 5.—The Executive Committee of each Section shall consist of the Chairman, the Secretary and three members chosen by the Section Nominating Committee, among members who have been in attendance at the sessions of the Section for at least two consecutive years. The first named shall serve one year; the second, two years; and the third, three years, so that one vacancy only shall need to be filled on each succeeding year.

SEC. 6.—The several Section Executive Committees shall unite to form one standing committee which shall be named the Committee on Scientific Contributions, and which shall annually elect one of its members as Chairman and one as Secretary.

SEC. 7.—The Committee on Scientific Contributions thus constituted shall hold daily meetings during the sessions of the Association, and such conferences at other times as may be deemed necessary.

SEC. 8.—Only questions that relate to the proper conduct of the affairs of the Sections shall be referred to this Committee, whose duties shall be solely in the direction of forwarding the scientific interests of the Sections; such as the selection of essayists, and the institution and arrangement of discussions on questions of a scientific and practical character.

SEC. 9.—The chairman of this standing committee shall make a report of its proceedings to the Association once yearly.

SEC. 10.—The chairman of each Section, at its first session, shall deliver a short address on the recent advances in the constituent branches of his Section, including suggestions of improvement in methods of observation, of study and of treatment.

SEC. 11.—As soon as elected, the chairman of a Section, aided by his Executive Committee, shall begin preparations for the annual meeting at which he shall sit. (While the Association is in session, he will be likely, by giving notice in his Section or by personal interview, to secure some very desirable papers for his Section, and thus save time and avoid extended correspondence.)

SEC 12.—The titles of papers to be read and of communications to be made at Section meetings shall be sent to the chairman of the Committee of Arrangements one month before the annual meeting.

SEC. 13.—No paper shall be read longer than twenty minutes. In case more than this specified time be required to complete the reading, the author shall omit such parts of the composition as to bring it within the prescribed limit, but the paper may be published in its entirety if the author wishes. No member shall discuss any paper more than once, or speak longer than fifteen minutes without unanimous consent.

SEC. 14.—No paper shall be read before any Section that is not in such condition as to pass at once from the author's hands to the Executive Committee of the Section. This Committee, within thirty days, shall forward the entire work of the Section to the Board of Trustees, after having carefully edited every document, and with such recommendations as may be deemed proper. But no paper shall thus be sent by an Executive Committee unless such paper embody some of the qualities set forth as follows:

1. A clear and succinct statement of the establishment or restoration of valuable discoveries, principles and modes of practice.

2. The results of well-devised original experimental research.

3. A critical and analytical review of any particular subject, such as is likely to enable the author to deduce therefrom conclusions of much value and importance.

SEC. 15.—Other papers, containing materials of more or less value, shall be returned to their authors, to be published as they may desire, with the statement that they were read before —— Section of the American Medical Association.

ARTICLE XV.—*Medical and Surgical Exhibit.*

SECTION 1.—There shall be no medical and surgical exhibit, under the authority or recognition of the American Medical Association, other than that made before the several Sections under the supervision of the committee on scientific contributions. All that is of value to scientific and practical physicians can thus find an appreciative audience, experience having shown that all other exhibits detract from Section work, and so lessen the attractiveness of the annual meetings to those whose presence is desirable.

ARTICLE XVI.—*Amendments.*

SECTION 1.—No part of these by-laws shall be amended, altered, rescinded, or abolished, and no additions shall be made thereto except at a regular annual meeting of the Association, after due notice of such amendments, alterations, recission, abolition, or additions shall have been given in writing by a delegate, at the preceding annual meeting, and then only by a vote of three-fourths of the delegates present.

ARTICLE XVII.—*Enactment of the By-laws.*

SECTION 1.—These by-laws shall go into effect immediately.

SEC. 2.—All sections or parts of Sections of the prior By-laws or Constitution, and all ordinances, declarations or resolutions not in harmony with these amended by-laws are hereby repealed.

EXPLANATORY NOTES.

NOTE 1.—In the Minority Report, the plan of organization of the Association is not changed, because it is of historical value, and because it consists of resolutions, the amendment of which should not, even if it could, be effected.

NOTE 2.—In order that the objects of the Association may be clearly understood at a glance, the Minority Committee has reproduced them in the Constitution and re-arranged them in a separate Section with distinct sub-sections suitably numbered.

NOTE 3.—In Article II of the Constitution revised by the Minority Committee, it will be seen that four classes of members are enumerated. This is necessary for the proper government and prosperity of the Association; the members classed as delegates giving it its distinctively representative character. The whole profession in the United States can thus be as well and as equitably represented by delegates from the several States as the whole people of this

country is represented in Congress by Members and Senators from the several States.

Note 4.—The revised Constitution of the Majority Committee contains by-laws and details of the duties of committees which should have no legitimate place in this Constitution. The Minority Committee has therefore endeavored to put things in their proper places, and to formulate a constitution designed as the framework upon which to construct the by-laws. The Constitution is therefore the generalization, and the By-laws consist of the particularization of the rules governing the Association.

Note 5.—In the revised By-laws of the Majority Committee no provision is made for special meetings. Circumstances may arise demanding a special meeting, and the Minority Committee has accordingly provided therefore by adding three sections, but with the purpose of making it difficult to call a special meeting which should never be held unless required to meet a very extraordinary emergency.

Note 6.—The Nominating Committee is given the prominence it so well deserves. Its abolition would be a grievous wrong to the several States and to their societies which send delegates to this Association. The Majority Committee's intrusion of the Business Committee to supersede the Nominating Committee is practically attempting to make the Sections rule the Association, although that Committee disclaims any such intention. It is partly on account of this attempt that the Minority Committee suggests the change of name from General Business Committee to Committee on Scientific Contributions, and endeavors to restrict the duties of the Committee and make it subordinate to the Association. The Sections being the offsprings of, should be governed by, the Association through a committee the formation of which is authorized by the Association.

Note 7.—The Minority Committee's revision of the By-laws contains an Article on Ethics and Discipline rendered necessary in view of the known existing circumstances. The first Section of this Article is an additional protest against any kind of revision of the Code, and the Minority Committee hopes that no change whatever will be made in this National Code of Medical Ethics. Moreover, the Minority Committee belives that if this revision of the Constitution and By-laws is adopted, it will settle forever the ethical disputes which have so much disturbed the profession, and that it will greatly enhance the harmony, prosperity and usefulness of the Association.

Henry D. Didama,
Chairman Minority Committee.

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

The Third Annual Meeting Held in Chicago, Sept. 12, 13 and 14, 1893.

Augustin H. Goelet, M.D., President.

(*Continued from page 552*).

ON THE ACTION OF ELECTRICITY ON UTERINE FIBROMATA.

DISCUSSION.

Dr. A. Lapthorn Smith had found the galvanic current arrest hemorrhage in nearly every case of this kind, even in the most desperate ones where almost every other known remedy had failed. It nearly always relieves the pain, and the failures are usually due to errors in diagnosis. Subsequently to the electrical treatment he operated in one of his cases, and found a sarcoma in which the uterus was embedded. Under such circumstances, it was impossible by palpation to make a differential diagnosis. The pressure symptoms he had found invariably relieved, most probably by the tonic action of the current on the circulation. Steady digital pressure on a fibroid for a few minutes will show the formation of an indentation. The current also improves the action of the intestinal muscles, and relieves constipation. Strength and nutrition are as a rule also improved, partly from the action on the sympathetic and partly from the arrest of hemorrhage. In about half of his cases the growth had been arrested, and in half of these it had diminished in size; in only one case was he sure it had entirely disappeared, and in this one there was no doubt about the diagnosis. One constantly hears the operators in the Philadelphia Obstetrical Society say that their most difficult cases of fibromata were difficult because of the previous treatment by electricity, but this is not true. In one case he gave one hundred applications of the galvanic current, and obtained a symptomatic cure, but the patient was not satisfied with this, and insisted on an operation. On performing laparotomy, it was found to be entirely free from adhesions. On the other hand, he had frequently been present at operations where electricity had never been used, and yet the adhesions were very extensive.

He saw no difference between a fibroid and areola hyperplasia and he maintained that a fibroid comes by obstruction of the circulation, which causes a migration of cells around the blood vessels, and change into fibrous tissue. These people are always extremely constipated, and hence there is venous obstruction. If electricity cures a fibroid it does so, he believed, through the circulation in the veins and arteries or lymphatics.

As to the contra-indications, he was in favor of taking out both fibroid and tubes when there is tubal disease, as he did not think it wise to use electricity where there is reason to suppose there is pus in the tubes. The treatment should always be so conducted as to avoid pain and not interfere with the patient's avocation. The sittings are usually from seven to ten minutes, twice a week.

If a strong current is used, patients are required to lie down for a short time, but if moderate doses have been given, even this precaution is quite unnecessary. He had never given a case of this kind mone than one huudred applications, and he usually observed marked improvement after about fifteen applications.

Dr. Cleaves said that she had found the treatment of especial value in intra-mural growths, and that in this class of tumors the pressure symptoms were invariably relieved, the general health improved, and in hemorrhagic cases there was an arrest of the hemorrhage. In a limited number of cases there was anatomic retrogression, but in no instance had she observed a complete disappearance of the tumor. She believed that the arrest of the hemorrhage was as largely due to the cataphoric action of the current as to the chemic cauterization. She called attention to the experiments made by Mr. Stewart of Owen's College Laboratory, by which he had demonstrated the increase of liquids at the negative pole and also an accumulation of salts at the negative pole. In order that there should be such an accumulation, it was necessary that first there should be a decomposition and redistribution of the salts. Fibroid tumors and inflammatory products, are rich in salts, especially in chlorid of sodium, and are very largely dependent upon the presence of these for the maintenance of their nutrition and growth. The experiments to which she referred, go to show that the removal of a considerable proportion of the salts, even if that removal were temporary would result in the destruction of the tissue, while the removal of a small proportion would affect its nutritive activity. That the contractile action of the current upon the unstriped muscular tissue of the uterus exerted a powerful influence both in controlling hemorrhage and interfering with nutrition, she believed.

Every one accustomed to making intra-uterine applications of the constant current is conscious of this, not only in the bearing down and expulsive pains complained of by the patient, but in their action upon the electrode, forcing it from its position unless carefully held there by the finger of the operator. These contractions serve to empty the blood vessels.

The action of the absorbents in removing the products of inter-polar electrolytic action must not be lost sight of. She had found the induced and static induced currents of very great avail as an adjuvant in the treatment of fibroid growths by means of the constant current. Cases in which the static induced had been used noted a marked sense of buoyancy and lightness in the pelvis, as well as a general sense of well being.

G. Betton Massey, M.D., read a paper on

THE ELECTRICAL TREATMENT OF FIBROID TUMORS.

The invitation to participate in this year's discussion on the electrical treatment of fibroid tumors was a most welcome one, as it is a subject of daily interest to me. To those among you equally interested in it with myself, the annual recurrence of this discussion suggests far more than the threshing over of old straw; it suggests rather a new harvest of ideas and practical points, to which each of us may contribute our sheaf of information.

Before referring to the special points arranged for the discussion I shall allude to the

VALUE OF EARLY DIAGNOSIS AND TREATMENT OF INCIPIENT FIBROSIS.

This convention should call the attention of the profession to the importance of an early diagnosis and early treatment of this condition.

Case after case of large growths are referred to us, but where are the little ones? Each large growth has been small at one time, though its presence has as a rule been unnoted until its relatively large bulk called attention to it physically. Its earlier manifestations were possibly slight, since I have known some tumors attain the dimensions of a small cocoa-nut without giving rise to symptoms, but it is more likely that the earlier symptoms were mistaken for something else. I do not doubt but that there are scores of women to-day in this city with undiscovered fibrous nodules within the uterine substance varying from the size of a pea to a hickory nut, who are under treatment by gynecologists for such supposed affections as displacements, chronic metritis, menorrhalgia, menorrhagia, laceration of the cervix, cellulitis and ovarian disease. I know this mistake is being made by reputedly good diagnosticians, and the evidence is contained in the histories of my cases, nearly all of whom were treated for some one of these conditions during the first three to ten years of the tumor's growth. Corroborative evidence has even been furnished by myself, in the discovery that in several cases in which an enlarged uterus had been diagnosed as chronic metritis or subinvolution, galvanic treatment led to a shrinkage of the organ everywhere but in one spot, where a small tumor was then evident.

These small growths should be searched for in obscure cases of pelvic pain, uterine enlargement, etc., and the patient placed promptly under electrical treatment when they are discovered, thereby saving her from years of misery, and at best a more prolonged treatment.

The early treatment of these tumors can not be other than advantageous as compared with late treatment. Their incipiency and smaller size are decided helps to a method that acts only by inducing retrogressive changes; yet there is another reason for early diagnosis and early treatment. All fibroid tumors are amenable to electricity in their early stages, while some, by reason of degenerative changes in the later stages of their growth, become finally unfit for it.

This slurring over the diagnosis of fibroid growths is probably due in part to the former attitude of the profession which looked on the affection as neither requiring radical measures for surgical relief, nor amenable to any other form of treatment. Patients were simply told to wait for the menopause, in the hope that change of life would bring relief. Surgeons at the present day pay but little attention also to small incipient growths, for patients at this stage seldom consent to an operation. To the electrical worker, only, the early discovery of fibroid growths is of interest, not to mention the paramount importance of early discovery to the patient to whom it may mean a still existent possibility of relief from electricity that would not be possible after time had permitted a degeneration of the growth.

1. *Hemorrhage.*—Of eighty cases under my care thirty-four have been hemorrhagic. Other cases had been troubled with this symptom at previous dates in their history, but thirty-four were markedly hemorrhagic at the inception of the treatment, some of them being in dangerously weakened conditions because of the extreme loss of blood. Each one of the thirty-four were cured of this symptom, so far as my investigations into their after condition can reach. In some of the cases a prolonged treatment was necessary to insure this result, but I have been fortunate in obtaining the co-operation of the patients in most instances. By prolonged treatment I mean an active treatment of three or four months, followed by a more desultory series of applications for three months or a year longer. During the continuance of the active treatment, frequent applications are made in order that an alterative effect may be obtained throughout the cavity. This sometimes temporarily aggravates the flow, or at least leads to a constant dribbling, but it is essential in order that a control of the case may be obtained. The desultory treatment following is applied twice or once a month, and like the earlier applications is very thorough, using from 100 to 200 milliampères. Sectional carbon electrodes are used when they can be inserted at first, but after the hemorrhagic feature has been somewhat controlled I prefer to use an elastic cotton-covered electrode as causing less irritation to the cavity. The active pole is invariably positive.

I have never yet been compelled to dilate the cervix to facilitate the insertion of an electrode, and would regard such a necessity as a confession of inexpertness.[1]

A recent case of a large hemorrhagic growth was so exsanguinated and weakened as to be brought in a chair. There was a history of a recent pelvic inflammation, and the temperature on admission to the Sanatorium varied between 101 and 102, indicating the possibility of peri-uterine mischief. Notwithstanding this contra-indication to electricity something had to be done, and it was soon seen that currents of 100 milliampères were well borne. During a period of rest following the active treatment the periods became almost normal, eight pounds in weight were gained and the health greatly improved. The treatment was given in this case to a lady continuously confined in bed, with an evening temperature varying from 99.5 to 101, with excellent results. The temperature became normal under the treatment.

This case has been specially mentioned, as it is decidedly against the rule to apply such currents during the existence of temperature variations of that extent. The wisdom of neglecting the rule in that particular case was verified by the results, but it should be borne in mind that the applications were tentatively begun, most closely watched, and prosecuted under the most favorable conditions for careful work.

2 *and* 3. *Pain and Pressure Symptoms* were present in nearly all of the cases treated and were among the earliest accompaniments of the tumors to disappear under treatment. The symptomatic cure was complete in seventy-two cases out of eighty. Of the eight failures, one was an extremely large growth in the abdomen, hanging pendulous above the pelvic brim and totally inaccessible by the vagina. Further treatment by abdominal puncture is contemplated. One case, a cystic, intra-uterine growth, succumbed to sepsis. Another was subperitoneal, loosely attached to the uterus and inaccessible to treatment. The remaining five cases fell into surgical hands after the more or less complete failure of electricity to relieve, and only one survived the operation of removal. Of these cases thus operated upon I consented to the operation in two, and the other three were operated upon either against my will or without my knowledge, and the operations were in my opinion totally inadvisable.

4. *Strength and Nutrition.*—The general health was completely restored in each of the seventy-two symptomatic cures.

5. *The Growth* was affected as follows in the seventy-two cases:

a. Arrest	10
b. Retrogression	49
c. Disappearance	7
d. Recurrence	1
e. No change	13

6. *Kind of Current.*—A continuous milliampère current has been employed in all cases, varying in strength from 30 to 400 milliampères, usually from 50 to 150. The rapidly successive induction currents from powerful primary faradic coils were used in a few muscular myomas, resulting in temporary but distinct contractions of the growths. The galvanic currents only have seemed to yield permanent results, though at present I frequently employ faradic currents simultaneously by means of a combiner, and am convinced that they do much to relieve patients of the, at times, unpleasant sensations accompanying and following the galvanic applications.

7. *Properties of the Current.*—*a.* Electrolytic. The mode of action of electricity on fibroid tumors embraces other elements of value than mere electrolysis. Electrolytic disturbance of tissue cells is probably the prime cause of arrest and regression of these growths, but it should by no means be supposed that the mode of action is by the

[1] Since writing the above, I have been compelled to use the dilator to insert an electrode within the os in a case of atresia caused by the improper placing of the electrode by a previous attendant. He had simply cauterized the mouth of a cavity that was four inches deep and capacious.

electrical decomposition of the growth into acids and bases. This occurs to some extent, but by far the greater part of the growth is removed by an apparent quickening of the metamorphic and sorbefacient processes, and this quickening will be found by experience to be not necessarily correlated in degree with the degree of electrolytic decomposition induced. Relatively weak currents, in other words, will accomplish more change in some cases than stronger ones. Another practical application of this fact enjoins us to exercise care not to nullify or interfere with the post-operative effects of one application by giving another too soon afterwards.

b. Cataphoric. I have had no practical experience with the cataphoric administration of medicaments in fibroids, but aside from this possibly fruitful question, I may say that electric osmosis is an important factor in the Apostoli treatment. The positive pole, for instance, checks hemorrhage largely by drying the tissues within the region of its polarity. With a strong current this desiccation may extend some distance from the point of contact, a whole tumor being partly deprived of its moisture, which is carried through the tissues towards the negative pole. The desiccation immediately beneath a small electrode surface is at times so great when strong currents are employed that a very powerful battery is required to keep up a sufficient current strength through the rapidly increasing resistance at this point. At the negative pole there is an increase of moisture in all galvanic applications in exact proportion to the loss at the positive pole. This physical fact renders it easier to maintain the current strength from a weak voltage when the negative pole is a small active surface; the current tends in fact, to creep upwards after being turned on to a certain point. Another practical application of the fact is the value of the negative pole in maintaining drainage from the uterus and in promoting the menstrual flow.

9. *Dosage.*—As before mentioned, the currents in my work have varied from 30 to 400 milliampères by the monopolar method, usually averaging from 50 to 150. The doses, are on the whole, smaller than I used at first, as it is my practice to be satisfied with moderate progress if unaccompanied by irritation. In an intra-uterine, sessile, vasculo-cystic tumor recently destroyed successfully by bipolar electrolysis I employed as much as 700 milliampères repeatedly in conjunction with continuous irrigation.

Polarity.—No cases were treated exclusively by one pole, except the distinct vascular growths, in which the positive pole was rigidly adhered to. Other growths were treated mainly by the negative application within the uterus.

Length of Seance.—The duration of each application has been from three to ten minutes, usually three.

Frequency of Application.—Twice a week or once a week is the usual rule of frequency, daily vaginal applications being interspersed by preference. In the latter stages of prolonged cases one treatment a month has been the rule.

Duration of the Treatment.—My cases have been under active treatment from six weeks to six months, with periods of desultory treatment usually added, lasting three months to three years longer.

Contra-indications.—Cystic growths, purulent accumulations within the adnexæ.

DISCUSSION.

Dr. Engleman thought it unfortunate that the discussions on this subject had been almost entirely from one side or the other; the surgeons ignore the electrical treatment, and the electro-therapeutists the surgical treatment. He had secured the arrest of hemorrhage and relief of pain; arrest of growth, and in some cases reduction. In inoperable cases which were doomed to suffer, the galvanic current gave more relief than any form of medication, and restored the patients to a useful life. He did not doubt that the tumors could be reduced provided the treatment was fortunately begun at the right time, but he had seen some striking instances of retrogression occurring without any treatment, and this has been the experience of many surgeons. He cited a case in which an enormous tumor had gradually disappeared, but it could not be attributed to the treatment. In another case, there was such a terrible hemorrhage that it was necessary to postpone the contemplated operation. The tumor was observed from time to time by Dr. Hodgeman and himself, and it first underwent fatty degeneration, and eventually was completely absorbed. He had come to the conclusion that we should limit our treatment with strong currents and by puncture to tumors in a healthy state of growth or of retrograde metamorphosis; but if a solid growth of any kind shows a tendency to malignant metamorphosis, electrical applications will aggravate this tendency. The specimens of fibroids which had been removed by Martin, of Berlin, seem to show that if malignant degeneration be present, electricity will hasten it, just as it will hasten fatty degeneration and absorption.

In the early days he used Apostoli's platinum trocar, yet he had seen no discomfort following such treatment, although there would be some hemorrhage. While using the coulombmeter for investigation, and as a matter of interest sometimes in clinical work, he saw no practical advantage in its use, for a current of a certain density—100 to 150 milliampères is essential.

The President said he did not hesitate to operate upon cases which did not yield to electricity, provided the symptoms warranted the complete removal of the tumor—not simply the removal of the appendages, which he regarded a useless procedure. One of the principal uses of electricity in certain fibroids of the uterus is to build up the patient's health sufficiently to admit of resorting to a surgical operation when it is demanded. We may confidently expect from electrical treatment, a symptomatic cure—the control of hemorrhage, and the relief of pain and pressure symptoms. The arrest of the growth is assured if the conditions for treatment are favorable, *i. e.*, in interstitial fibroids and in subperitoneal growths situated favorably for vaginal puncture. He had seen considerable retrogression under certain conditions, but he had never observed complete disappearance. The galvanic current is the only one suitable, and his impression was that a more profound effect was produced by strong currents of short duration than by mild currents for a longer time. Usually twice a week is sufficiently often for intrauterine applications and once a week where puncture is employed. The choice of the pole depends upon the case; in soft myomatous growths and where hemorrhage is a prominent symptom, the positive pole should be used, but where the growth is hard and fibromatous, the negative pole is more appropriate. This he considered important. He thought little could be accomplished short of six months, and the treatment should be continued so long as progressive retrogression and improvement is observed. In recent growths and in myomata we may expect more retrogression than in fibromata.

He directed attention to the danger of producing cervical stenosis, as he had seen this condition quite often in cases which had come to him from other operators. This had occurred in some instances after the use of currents of only fifty milliampères negative when the treatment had been continued for a long time.

Dr. Smith asked if there had been any evil effects from this stenosis.

Dr. Goelet replied that in one case there was complete stenosis, so that it was quite impossible to introduce an electrode or sound into the cavity, and the pain was so severe that it became necessary to do a hysterectomy.

Dr. Hayes said that for some twenty years Dr. ———— used the induced current with the positive pole directly over the tumor, and with a sufficient current to produce decided muscular contractions. The induction apparatus used by him had a large wire so as to produce a current of low voltage and slow interruption; in short, very decided muscular contractions.

When he had patients with fibroids, he employed the Apostoli method, and after two or three days gave a bath with the induced current in order to favor metabolism. For the relief of pain he had been using statical electricity, an electrode being introduced into the vagina or uterus, and a large diffusion electrode placed on the abdomen, and the current being broken in the metallic circuit by a modified Morton electrode. He thought this treatment altered cell action, and acted as a useful adjuvant to the Apostoli method, giving the best results in the shortest time.

Dr. Kellogg, in closing the discussion, said that from experiments he had made upon living rabbits, and on beefsteak, he had found that a feeble current will after a long time produce very nearly the same electrolytic effect as a more intense current will in a shorter time.

Sufficient attention is perhaps not given to the danger of puncturing the uterine wall in this method of treatment, for the reason that sometimes in the growth of the tumor a portion of the uterine wall may become very much stretched and attenuated. He mentioned this because of the paper which had been read this afternoon on passing a sound into the Fallopian tubes—an operation which he would never attempt. As a rule the opening of the tube is not large enough to admit a bristle, and hence it is extremely likely that the

tube will be punctured, and the electrode brought in contact with a loop of intestine, which it will destroy. Stenosis of the cervical canal may be to a great extent avoided by insulating the cervical portion of the electrode by a piece of gum catheter, but unless one produces stenosis, he hardly thought one would be successful in curing these cases of fibroids, this being the natural condition occurring at the menopause.

Evening Session—Third Day—September 14.

The meeting was called to order at 8:30 P.M.

J. Mount Bleyer, M.D., and M. Milton Weill, M.D., of New York city, read a paper on

The primary action of the galvanic current—it increases the amount of ozone in the blood as shown by chemical test of the blood in the arteries—with our theory of animal electricity.

Schönbein, in drawing his conclusions regarding the nature of ozone, assumed that oxygen was capable of three distinct conditions, viz.: ozone, electro-negative, antozone, electro-positive, and neutral oxygen, which, as its name indicates, has no polar distinction, but could be polarized and depolarized at will.

Of these three so-called forms of oxygen, the investigations of the observers since the day of the great Basle chemist have much changed our views. To-day we admit the existence of only two forms of oxygen—ozone and neutral oxygen, and for the sake of elucidation we give you the graphic construction of the molecule as we believe it to be:

$\overset{-}{O}\overset{+}{O}\overset{-}{O}$ = ozone.

$\overset{-}{O}\overset{+}{O}$ = neutral oxygen.

Assuming, as he and the aftercoming observers did, that oxygen in its free state was neutral, and it so proved to be, he reasoned, and it is within the pale of all researches, even up to our own time, that as soon, or rather as we have found it, just before this oxygen enters into combination with either organic or inorganic substances in the presence of moisture it becomes polarized.

Carrying these conclusions into the field of physiologic chemistry, he became convinced that the corpuscles like phosphorus were possessed of the power of polarizing the oxygen in the lungs, and further of splitting up the molecules and rearranging them in the form of ozone. His idea was that ozone existed in the blood, that it was the vital oxidizing agent by means of which the recuperative changes in the tissues were wrought, yet the years of careful work he devoted to searching, failed him in finding the slightest trace of ozone in the blood.

In his later years he became equally emphatic in his assertion that the resolution of ozone—its oxidation was so rapid that in the blood and the moistened tissues surrounding the capillaries where the real respiration is accomplished it would be next to impossible to chemically detect the presence of ozone by the most delicate test. He even went so far as to doubt its existence in the blood, that is to say, he believed that it was ushered into existence and was used up in performing its function so quickly that it was not possible to chemically isolate it, that in the blood of the capillaries—presumably the radicals, although he does not so put it—where the pressure conditions are such as to allow of the free interchange of the gases of the blood with the tissue elements, ozone no longer existed.

Like many other great minds Schönbein was right in many of his claims, but in many other of his theories he allowed himself to fall into error, for in justice to those who come after him to study this question of the physiologic significance of ozone, and with no discredit to his greatness Schönbein left much to be cleared up and explained. The ever changing and improving chemic facilities and knowledge make this task far more easy. With the advantages afforded by the chemistry of his day, Schönbein accomplished an Herculean task. That famous physiologist, His, who had grown up in the shadow of Schönbein's laboratory and influence also failed to discover ozone in the blood.

At the very time His was engaged in his futile efforts, Alexander Schmitt was at work upon the same question—ozone in the blood.

We need not rehearse the details of Schmitt's methods; suffice it to say his experiments were elaborate and carefully made, and showed beyond doubt that ozone existed in the blood; but the quantity, apparently, was very small.

Not long afterwards Kühne, improving on Schmitt's tests, proved that ozone existed in the blood in readily appreciable quantity, and the question was forever settled in the affirmative.[1]

Kühne concluded, and his deductions were not far from approximating the truth, that the red corpuscles greedily absorb ozone under the natural formation of carbonic acid, and decompose water as free oxygen is liberated.

Our experiments on the blood with the galvanic current are in a line with those of Kühne and Schmitt, only a short step in advance of those observers, a mere completion of their unfinished tasks. Whatever value the results we have obtained may have, there can be no doubt that the galvanic current applied to the living body, whatever else its action may be, increases the amount of ozone both in the corpuscle and the plasma.

Before entering into a rehearsal of the details of our experiments, let us briefly touch upon the physiology of the blood and the function of its gases; for here it is that we suspected the seat of first physiologic action of the galvanic current, and here, too, we were led to trace to its source, animal electricity, and observe its function as we suppose it, in the human economy.

The Blood—Its Gases and Solids.

The gases in the blood, the carbonic acid, the nitrogen and the oxygen, which interests us in particular, need not be gone into at length.

The oxygen in the blood exists in two forms: 1, that which is held in solution by the plasma; and 2, that which enters into combination with the constituent elements of the corpuscle.

The first variety commands our attention for the reason that to all appearances, the galvanic current first acts upon this freely dissolved oxygen and which naturally, therefore, first undergoes the transforming change from O_2 into O_3.

With a single exception, that of defibrinated blood, the blood obeys Dalton's well-known law of the absorption of gases by liquids. In vacuum 100 volumes of blood give up a trifle over 72 volumes of gas, of which in arterial blood 20 volumes, upon analysis, consist of oxygen, while in venous blood the volume is reduced to between 8 or 10.

The plasma simply holds the oxygen in solution, while the hemoglobin, which by actual weight makes up 90 per cent. of the dried corpuscle, enters into partial combination with the oxygen, although we have observed, and the observations are in keeping with those of other observers, that the oxygen in the hemoglobin is in such a loosely combined state that it readily solves its bonds of union, and under the slightest provocation goes over to the other elements for which it has affinity as soon as the pressure conditions of the plasma are changed so as to permit of a loosening of its bonds.

Plasma, or to be more accurate, fresh serum, will, upon exposure to the air, absorb no more gas than ordinary water under similar conditions, some three volumes; defibrinated or whipped blood, however, contrary to what might be expected, takes up considerably more. This will suffice for the behavior of the gases of the blood. Now a word about its solid constituents.

In general, in the plasma they are serum—albumen, globulin and crystallizable fatty and nitrogenous matter which, as we shall endeavor to show, are rendered more diffusible by this very transformation of oxygen into ozone, caused by the polarizing action of the existing animal electricity of the body, and rendered even more diffusible by the action of the galvanic current.

In the larger vessels, for example, the carotid artery which we have chosen as the seat of our experimentation, not only because it is accessible and convenient, but rather because it is a direct branch of the aorta where both the plasma and corpuscles are equipped with all the oxygen they can carry, the blood is charged to its full capacity with those elements which it is commissioned to give up to and upon which the tissues depend, particularly oxygen.

All physiologists agree that in these large vessels carrying arterial blood the hemoglobin in the corpuscle is in the form of oxyhemoglobin which signifies simply that the hemoglobin has entered into partial combination with as much oxygen as it can hold, and that it is ready to transfer this oxygen to the tissues as soon as the oxygen of the plasma has become exhausted, and the pressure conditions become so reduced as to permit the giving up of the gas.

(To be continued.)

[1] Kühne and Scholz, Virchow's Archiven, 1865.

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All members of the Association should send their Annual Dues to the Treasurer, RICHARD J. DUNGLISON, M.D., Lock Box 1274, Philadelphia, Pa.

SATURDAY, APRIL 21, 1894.

ELMIRA REFORMATORY.

For many years this institution has led all others in the world in scientific studies and treatment of criminals. The application of modern theories of the disease of criminology, has been very strikingly illustrated in the physical and mental training of the inmates of this prison. The success of these new methods has so far exceeded the expectations of its advocates, that it has attracted a worldwide interest. These methods are briefly, physical culture, baths, industrial and military training, exact life and living, mental culture and rewards and punishment as an incentive. The inmates are treated by building up the physical and mental; and the crime is assumed to be a part of his physical degeneration, to be reached and controlled by the application of exact physical measures. Experience has built up a system of means and appliances and proved their value by practical application at this reformatory, far in advance of any other in the world. Pioneer work and pioneer men always encounter savage opposition. Not unfrequently the work is halted and put back to another period.

Such a storm has just passed over the Elmira institution. It began in wild newspaper charges and concentrated in an investigation by a committee of the State Board of Charities. The chairman of this Committee died at the beginning of the investigation; the second member, a noted physician, after a few hearings went off to Europe and failed to return, and the remaining member, an impractical lawyer, continued the investigation alone and made the final report. A student of history could have formulated the charges against this institution and its management without any knowledge whatever. Such charges invariably begin with the officers, who are called cruel, unjust, unlawful, inhuman, etc.; as a result, mismanagement, incompetency, and neglect follows. Then follow charges of financial disturbances and dishonesty. Thus history was repeated in the charges in all its details in this investigation.

The financial workings were found correct, and the storm gathered round the methods of punishment by spanking. It was found from thirty years' experience by the management, that blows by a broad strap on the nates were the most effectual method of procuring obedience. This had been carried on for years under the Superintendent's direction, and proved to be an effectual stimulant to the small proportion of rebellious prisoners. Over a thousand pages of the report are devoted to the testimony concerning the horrors of this mode of punishment. Minute evidence gathered from convicts in State prisons who were former inmates and discharged prisoners, ex-keepers and others, all witnesses of the most unreliable character, is presented with a gravity that is farcical. The assertions that reddened skin from blows on the buttocks are "inhuman" and "brutal," reflects sadly on the wisdom of parents and the home experience of many centuries.

The testimony of two hundred witnesses has been spread over thirteen bound volumes of nearly four thousand pages, costing over ten thousand dollars, and finally culminating in conclusions of the opera bouffe style.

The Superintendent is found guilty; spanking is a very brutal punishment, and if persisted in, the prisoner should be so protected by a stout leather jacket, that no unnecessary injury be done him; that the Board of Managers should be discharged for disrespect to the Governor and over-confidence in the ability of the Superintendent; that nepotism is injurious, that more chaplains are essential, and a new institution is required.

The list of findings and recommendations is a fitting conclusion to an investigation based on press sensations, and conducted by non-experts, in an aimless and unreasonable way. There is not a jail, prison, asylum or hospital in the world that is managed to the satisfaction of all its inmates. There is always a class of critics, both in the press and professional circles, who assume far more perfect knowledge of any subject, than practical men who are giving their life work to it.

While the Elmira Reformatory will not suffer in any general way from this investigation, the thoroughly farcical character of such inquiries reflects on the intelligence of the community. Outside of all political sensationalism there is a scientific aspect to the subject that should not be overlooked.

Criminology has come into the realm of science, and belongs to the province of the physician. The Reformatory at Elmira has an eminent physician as President of the Board of Managers, and its resident physician is a recognized scientific student in this

field, whose papers and reports take rank with the work of the great leaders of penology. The Superintendent has been a practical worker in charge of convicts for over thirty years.

It is from such experience and training that we can hope for progress in this field. Institutions of any class under the control of politicians or non-experts who are not students of these subjects, never make any real advance, and are always open to all forms of abuses. Physicians everywhere should insist that penal institutions should have medical men to direct, and that the convict have the full benefit of all that science and experience has taught of the means and methods of cure.

It is a cause for great hopefulness that at least one pioneer work in the world is managed above political levels, by trained men and along lines of their best experience. This investigation has brought into greater prominence than ever, the folly of trusting to sensational stories of abuses in asylums, that come from inmates who have some purpose to accomplish, or some feeling of revenge to gratify. Also where a just suspicion exists of abuses, let the investigation be conducted by competent men who have only the truth to ascertain, truth that is above all doubt or question.

SANITO-VETERINARY INVESTIGATIONS.

Veterinary medicine and surgery is rapidly coming into prominence in many of the older States. Veterinary doctors are often highly educated, having medical diplomas from the best schools, but from choice turn their attention to animals and their diseases.

In a report to the Connecticut State Cattle Commissioners by Dr. Noah Cressy, an expert veterinary surgeon, occurs many very suggestive facts, which open up new fields of research. The struggling physician who feels the pressure of keen rivalry, should consider that a wide field of great usefulness is open in the treatment of diseases of animals; also where highly honorable and thoroughly scientific work can be pursued, with a more assured hope of reward. Dr. Cressy presents some additional evidence showing that the virus of smallpox in passing through the animal organization, undergoes some modification by which it is deprived of its malignancy. He asserts that cattle and other animals suffer from typhoid fever germs, and that some of the low exhaustive distempers which occur in animals have their origin in these germs.

Foul water supplies to animals are in many ways equally dangerous, and while all the facts are not clear, there is a strong probability that animals suffer the same as man. Also that animals suffering in this way may pollute the water supplies and be sources of infection to man.

Animals should always be cremated and never be permitted to undergo the slow process of decomposition, either on the surface or under the soil. Especially animals suffering from tuberculosis. The soil over the graves of animals dying of these diseases has been found to be alive with germs that can be communicated to others producing in favorable conditions similar diseases. Diphtheritic germs are found to be equally dangerous, and not uncommon among animals. Although not recognized, yet the evidence of their existence and danger is very clear in many cases.

The bacilli of cholera, typhoid, tuberculosis and diphtheria, are all distinguishable and preventable in both man and animals. The water supplies, the soil, the absence of cleanliness and sunlight, and bad insufficient food, are all mediums for their growth and propagation. Animals suffer the same as man from these scourges, and the same general principles of hygienic and preventive treatment apply. Tuberculosis is the most common and dangerous source of disease in animals at present. The bacilli of this is transmitted in both milk and meat, and the diagnosis is not clear except by the microscope. The animals may give but little evidence of their real condition, and no treatment has been found available.

Extermination is so far the best plan to limit the evils. A constitutional disease, called acute anthropoid edema, is mentioned, and cases are given, and some remarks are made of cattle tick pathology.

This report is a striking confirmation of many facts observed in human diseases, and the author suggests that the germicide remedies should be used by farmers in many ways, to great advantage. He very properly protests against the use of patent secret nostrums as in all cases worse than useless, and urges a more sanitary care of animals.

It is a pleasure to note the rapid advances in this field, and along lines of scientific inquiry, and the consequent disappearance of the old vociferous horse doctor, whose coarse drugs and coarser treatment was always a source of disgust to the physician. It is equally interesting to consider that these dreaded germ diseases so common in every practice, extend to animals and possibly in many unknown ways, may be sources of transmitting these germs. Clearly a very wide field of research opens up in this direction.

THE CHINAMAN VIEWED FROM THE SURGICAL STANDPOINT.

Dr. John C. Thomson, of Hong Kong, has written in the *China Medical Missionary Journal* regarding the fortitude of the Chinaman under the surgeon's knife. It often happens in China that the surgeons are called upon to operate in isolated localities, where the suitable anesthetic is wanting or where the

proper assistants are not at command. In a large proportion of minor operations, anesthetics are not exhibited. Under a variety of such circumstances the author has observed among the Celestials a degree of unflinching endurance of pain that would be scarcely possible in the more highly developed nervous constitution of the people of the West. There are many considerations among the Chinese that render the latter reluctant to surrender their surgically disordered members to the knife of the foreign surgeon, but when once their feelings of reluctance have been laid aside, the Chinaman becomes a "good patient." In explanation of some of the bedside experience DR. THOMSON has met with, the paper continues as follows:

"The fact is to be discounted that, in the case of the poorer Chinese, a prolonged course of low living and practical starvation has frequently added its results to the original trouble (while the native practitioners are doing their best or worst) before the case is submitted to the Western surgeon, and this materially affects the progress of many of our patients. Other things being equal, recovery and convalescence are very much more rapid and complete in the average Chinaman than in the average Englishman. Reasons for this difference are not entirely obvious, but the opinion may be hazarded that the simpler feeding habits of the Chinese and their equable mental constitution form, at least, some of the causes of the higher vitality of their tissues. The popularly accepted notion that the Chinaman lives on rice is very far from the truth, since even the poorest manage to add a few green vegetables and a little fish or pork to the rice, which is the staple national diet; but, taken all round, the Chinaman's food is certainly more simple, and probably more nutritious, than the food of an Englishman under analogous circumstances. His use of alcohol is also much less injurious to his tissues than is its use by a large proportion of Europeans. The native spirit, *samshoo*, is very extensively consumed, but it is invariably in minute quantities and never excepting with meals, intoxication being a thing practically unknown in China. The tranquillity of the Chinese mind is proverbial. A Chinaman is never in a hurry. Provided he be given a hope of ultimate relief, it rarely matters to him whether his stay in hospital is to extend over a week or a month, and this absence of all worry probably goes far, along with the other facts I have stated, to account for the kindly reaction of his tissues under the surgeon's knife."

MR. JONATHAN HUTCHINSON'S CLINICAL MUSEUM.

The President of the Royal College of Surgeons has shown anew his partiality for the pictorial element in teaching. He has developed from his atlases and archives an extensive museum of clinical surgery that bespeaks our admiration of its author's originality, industry and liberality. In this museum he has collected the experience of many years. It has, at first sight, the appearance of a pathologic picture gallery, but it is more than that. The upper parts of the walls are covered with pictures, while on shelves below them are the books pertaining to the same subjects, so that the building is rather a library with inserted illustrations than a simple museum. It is a kind of spread-out atlas of medical subjects. The pictures are not hung, but are allowed to stand on narrow shelves, so that they can be taken down or moved from place to place for examination or comparison. In the library subdivision of the museum there are two hundred thick scrap-books, into which are pasted the current literature, taken from journals and pamphlets, germane to the illustrations. Each of these books has its own subject, and each is independently indexed. All of MR. HUTCHINSON'S periodicals are remorselessly cut into for material suitable for these two hundred reservoirs of current information.

TO MEMBERS OF THE ASSOCIATION.

The editor of this JOURNAL recently received a polite letter in faultless type-writing as follows:

PHILADELPHIA, March 12, 1894.

My Dear Doctor:—I see by the program of the Section on Surgery of the AMERICAN MEDICAL ASSOCIATION that you are to read a paper on, ———. I hope you will let us publish this in "The ———." We will gladly furnish you reprints free of cost and if you send us the MS. in time will have it set up in galley proof so that you can read from this at the meeting.

Very sincerely at your service,

——— ———.

In response to which we have the honor to reply that the By-Laws of the ASSOCIATION forbid the publication in the Transactions of articles previously printed elsewhere.

Papers read at the meetings of the ASSOCIATION become the exclusive property of the Section, and if previously printed elsewhere can not be printed in the JOURNAL OF THE ASSOCIATION until the other articles shall have first been printed. This rule led to the exclusion from the JOURNAL of some valuable papers which the authors had printed elsewhere last year, and it is hoped that gentlemen furnishing papers will this time remember the By-Law and decline requests of the character quoted.

THE MARRIAGE CERTIFICATE OF BELGIUM A MEANS OF EDUCATION.—The following paragraph from the Paris *Herald* shows how vital statistical stationery may be made instructive:

"In Belgium it is the custom to give certificates of marriages in the form of little books, which also contain a summary of the marriage laws, and among a mass of other miscellaneous information directions for the feeding and care of infants. There are also places for entering the names and birthdays of the children of the marriage, the authorities considerately affording space for twelve such entries."

JOURNALISTIC ENTERPRISE.—We congratulate our esteemed contemporary, the *New York Medical Record*, on its cable reports of the Eleventh International Medical Congress. The first instance of the kind, we believe, attempted in American medical journalism.

Blank Applications for membership in the ASSOCIATION at the JOURNAL office.

CORRESPONDENCE.

Revision of the Code of Ethics.

To the Editor:—Members of the Association being privileged to discuss in the pages of the Journal, the reports of the Committee on the Code of Ethics, Constitution and By-laws, the following notes of a general examination of the Committee's work are made to call attention to the moral as well as the literary character of the "revision:"

1. After divers conferences, the Committee on Revision being divided, the majority made a report at Milwaukee in 1893, in which it gave only a vain excuse for not presenting the "revised" Code, and now prints it so late as to leave little time for publication of the objections of many members who do not regard revision as necessary. Since only seven numbers of the Journal can appear before the June meeting, the opportunities for criticism will necessarily be very limited. It is not likely that the Committee was sure of giving an unexceptionable revision in spirit and letter; otherwise the profession would have been invited, several months ago, to examine it in the Journal. The long delay in the appearance of the "revision" is therefore significant of lack of confidence of the "revisers" in their own work, and of fear of unfavorable criticism. Nearly two years have elapsed since the appointment of the Committee to perform a duty which could have been accomplished in three months, so far as it related to the Constitution and By-laws; but this Majority Committee seems to have consumed the greater part of these two years in endeavoring to pervert the Constitution and By-laws, and in making abortive attempts to "improve, abbreviate and illuminate" that admirably accurate and exemplary, concise and lucid statement of the most exalted moral maxims known as the American Code of Medical Ethics. At last this unenviable Majority Committee has completed and published, not changes or amendments, but a monstrous metamorphosis of the entire Code!

2. Bad, in all its senses, does not seem to fully qualify the "revised" Code. Its spirit is evil, its letter is execrable, and both are superlatively absurd. It is like a parody upon the original, and a contribution to ethical and ceremonial disorder and rhetorical monstrosity presented to the profession by the iconoclastic Majority Committee as an example of its instinct for destruction, its incapacity for reconstruction and its quaint gift for the invention of rules of misconduct, as well as the outcome of the greatest efforts of which it seems capable, for "ideal" codification, classification, emendation and literary composition.

3. Countless members of the profession and of the Association, who have been waiting patiently to know the result of the ethical and linguistic experiments of the Majority Committee, will read the revised Code with uncommon interest, and will be likely to look upon the success of the experiments as problematical; they may perhaps be so emboldened as to assert that the "revision" is no improvement over the original Code, and say that even if it were equal to the original it would then be a work of supererogation. They will probably regard this "revision" as infinitely inferior to the original, and go so far as to suggest that the question of revision be dismissed from further examination, and that the Committee be discharged with thanks for having given such a thorough demonstration of the futility of attempting to improve the original Code. A second reading will surely confirm these views and carry the conviction that dismissal would be a wise disposal of the revision agitation.

4. Declamation, dispute and disorder were for a time irrepressible at the Detroit meeting in 1892. Advantage was taken of the ensuing confusion, on the seventh day of June, to induce a member to offer a resolution that the President appoint a committee "to whom the Code of Ethics shall be referred for such changes or amendments as they may deem it wise to recommend, if they should decide that any change is required." The Committee was duly appointed, and met, but was soon divided because its members were not unanimous as to the alleged necessity for changes in the Code. At the meeting of the Association in June, 1893, a majority report and a minority report were presented; the majority favoring changes, and the minority being against changes. No decisive action was taken, and it was proposed to test the vote of the affiliated State organizations.

5. Each member, or rather all the members together of the Majority Committee in assuming the *rôle* of revisers might have done serious mischief had they made only a few changes, but went much farther and blunderingly carried their excesses to the point of striving to demolish and then to remodel the lofty monument of wisdom erected by able, faithful, good and true men, and have thus greatly exceeded their instructions, which ended with, "if they should decide that any change is required," they might recommend such change. They were not authorized to transmogrify the Code. The resolution did not imply any intent, on the part of the mover or the Association, to change the character of the maxims or the plan and phraseology of the Code. The result of the Committee's work shows the influence if not the direction, of an enemy bent on demoralization, disorganization and destruction. In consequence of their being thus ill advised, the radical "revisers," failing to take advantage of their lore in ethics, logic and rhetoric, have substituted bad morals stated in slovenly style, for good morals stated in scholarly style.

6. For an example of the "revisers'" ethical as well as literary acumen, the proem is worth reading; it is the stamp of all that follows! The affixion to the Code of a composition, such as this proem, is an offense to the intelligence and discernment of even beginners in medicine. Besides, it adds to the number of platitudes and to the multitude of inaccuracies contained in the "revised" Code and renders it ridiculous from the beginning. To an "abbreviated" ethical code any kind of a proem would seem like a superfluity.

7. Gross and ludicrous are the blunders of the "revision" Committee, but none is so glaringly absurd as their introduction of details of preliminary and medical education, which have no place in the letter of an ethical code. The spirit of the original Code implies the highest qualifications. Physicians who uphold the American Code are expected to be scholarly gentlemen, well versed in the science and art of medicine. The excellence of the original Code is owing largely to the discrimination and learning of its framers who were thoroughly acquainted with "languages, mathematics, literature, history, philosophy and logic."

8. Have not the "revisers" separated too widely, medical etiquette from medical ethics? Should not rules of action be closely followed by rules for guidance in the ceremony of the action? It does seem convenient and proper that rules of etiquette, either stated or implied, closely follow, or even sometimes are incorporated with, ethical rules, and it does not seem rational that they be widely separated. The selection of the plan of arrangement of rules of ethics and etiquette adopted by the framers of the original Code is one of the many evidences of their sound judgment and wisdom.

9. In keeping with their crafty policy, the "revisers" imposed many obligations upon physicians, but few upon clients and, in their unwisdom, thus lead clients to believe that physicians have no rights which need be respected. How many times will it be necessary to point out that the Code was made for the information and protection of the

public as well as for physicians, and that their obligations must necessarily be reciprocal? One of the objects of the Association, distinctly stated in the plan of organization adopted in 1847, is "for enlightening and directing public opinion in regard to the duties, responsibilities and requirements of medical men." This object can be effected only by making the public acquainted with the ethical rules and other laws of the associated profession. To say that the "Code is not designed for patients or the public," is a confession of the grossest wilful ignorance of the principles of ethics and therefore of justice. That part of the Code which points out the reciprocal relations of clients and physicians is so clear and just that no intelligent layman who reads it will question its propriety and necessity, and all thoughtful readers will surely approve other parts of this original Code which relate to the public and the State. It is not easy to follow the vagaries of the Majority Committee both in its "revision" and its report of 1893 on the Code. In the report the Committee says that the original Code contains superfluous articles and sections of articles, and that "it would be wise to re-write this Code in phraseology so plain as to make it a practical common sense document," implying that it is senseless and does not fulfill its office. In another paragraph the Committee thinks that further inquiry should be made as to whether "alterations are warranted in view of the changes incident to the last half century," whatever this may mean. In the same report, page 692 of the Journal for June 24, 1893, the Committee acknowledges that the original Code "contains the essentials for the successful conduct of a medical career, as these have been learned by the actual experience of the best members of the medical profession, from the earliest dawn of history to the day on which it was written." The frequent shiftings of this Committee's views show how unfit it is for the work it so rashly undertakes. First, the Committee thinks that the Code contains superfluous articles; second, that it is senseless and its phraseology is not plain; third, that there is a doubt whether alterations are warranted, and fourth, that the Code contains what is essential for the conduct of physicians throughout their career. It may seem strange, to those who have not studied the psychical state of the disorganizers, that after the last declaration the "revisers" persist in spoiling the Code, but to others, who know the spirit by which they are misguided, the ironical import of the declaration is plain. Toward the conclusion of its report on the Code the Committee says that it "deprecates all efforts to abolish, belittle, distort, ridicule or otherwise lessen its hold upon the profession." But despite this deprecation, the Committee gives a "revision" which, if adopted, would surely abolish the original and belittle in the extreme the Association adopting such a ridiculously distorted monstrosity.

10. Justice demands not only a general statement of the moral, but of the literary character of the Majority Committee's labors. Its "revision" is couched in pitifully inaccurate language which abounds in misused and misplaced words, bombastic expressions, and redundant phrases, besides uncounted inanities; while the few ideas are chimerical, and the style is inflated, inelegant, and hypnotically tedious.

11. Keen may be the wits, great the erudition, eminent the scholarship of the "revisers," but it is apparent throughout their document that they made use of none of these gifts in attempting the work of "revision." Among the glaring instances of carelessness, if not of designed perversion, is the distorted paraphrasing of some of the maxims that the Committee has seen fit to extract from the original Code.

12. Let the reader examine the files of the Journal and he will learn that among the "reforms" proposed by the "revisers" and their advocates, was to be an extraordinary abbreviation of the Code. They were "determined" to give the Association "a clean-cut set of short rules," to make the "revision" a highly compressed statement of only "necessary maxims," and to avoid "redundancies." But notwithstanding these boastful promises, and although they "omitted ten sections of Article II, on pages 5, 6, 7 and 8, and Article II on page 20," of the original Code, the "revisers" really omitted the whole of the original, and now give a "new code" which is about four-fifths the length of the original. This "newly revised" Code is indeed well adapted to the views of the disorganizing faction by which it was inspired. Its worse than sophomoric proem, its superfluous and disingenuous rules, its profuse flux of empty words and its sorry obstipation of ideas, constitute the kind of exhibit that was expected from the would-be reformers. To bring their ridiculous propositions to a climax, the "revisers" recommend a "more accurate definition of the term, consultation!" This seems as if the definition of the "term, consultation," in the best lexicons of the English language were as unsatisfactory to them as the statement of the maxims in the original Code; rejecting the one, they reject the other for the same lack of reason. To those members who uphold the National Code, the definition of consultation, given in general and medical lexicons, is sufficiently accurate, clear and satisfactory.

13. Many and great are the difficulties sometimes met with in striving to amend even what may be improved; but how much greater and more numerous must have been those which the "revisers" constantly encountered when, in their folly they undertook the emendation of the excellent moral and ceremonial maxims contained in the original Code! The signal failure of these "revisers" was not unexpected, particularly since the publication of their pitiable endeavors to sophisticate the Constitution and By-laws, which naturally led the reader to question their fitness for the work intrusted to them. Failing in the accomplishment of the lesser task, they were not likely to succeed in the greater. It is evident they did not recognize the fact that a document, such as the original code, so pregnant with clearly and concisely stated maxims, was written for all time and is not susceptible of betterment, for it was, is, and always will be, the wisest, safest and best guide of professional conduct to all general physicians of either sex, or to specialists, however great and diversified may be the changes in medicine and its votaries.

14. Nothing in literature is more difficult than the classification of subjects, the concise statement of facts, and the right disposition of propositions. This may have been realized by the "revisers," but apparently too late to take advantage of the knowledge. Had they made use of the information obtained from their early reading of history and general ethics, they would not have lost sight of the fac that even the sages of antiquity did not find it easy to formulate moral maxims. Had they remembered that, as a general rule, each moralist of old made but few contributions, and that systems of morals are usually made up from the maxims of the many, collected, selected, edited and arranged by able classifiers, they would have rightly appreciated the value of the framers' work on the original Code, would not have had the temerity to invent absurd rules of conduct, and would have abandoned their feeble attempt at "revision." They must have known, though they seemingly ignore, with what patient intelligence the committee of 1847 labored to gather, from divers collections of good maxims the materials which were essential to its wise purposes. What a woeful lack of discernment is manifested by the disorganizers in their estimate of the grand outcome of the studies of such learned, honorable and devoted phy-

sicians as those who were members of the memorable committee of 1847, and how irrational and unjust the "revisers" are to strive to abolish the admirably written system of morals unanimously adopted by the Association as a condition of membership! It is more than likely that any man who, in future, may be so rash as to endeavor to change the maxims, language or arrangements of the American Code of Medical Ethics, will be the subject of general opprobrium and derision.

15. One or two more notes will terminate this general examination of the "revised" Code. It does not seem possible for any individual or committee to improve the fundamental maxim of the Code which is, "be just," and is the basis of all codes of good morals. Any deviation from this maxim which is probably as ancient as the first aggregation of men, must necessarily be bad, for it will inevitably resolve itself into—be unjust.

16. Peace is not likely to be restored in the Association until the disorganizers are out-voted, the transformed Code is rejected, the original Code is preserved in its integrity, ethical wrangles are discouraged, and the revision question is disposed of forever.

17. Questions such as these can not always be discussed without warmth, particularly when they are raised by disturbers of the peace of a large and respectable body of men. Made in the interest and for the welfare of the Association whose objects would suffer by the adoption of a perverted Constitution, and whose dignity would be offended by an immoral, ill-composed and ridiculous Code, this criticism is of necessity unsparing. The writer regrets to have been compelled to use the strong expressions which the iniquitous revision agitation seem to justify, but was prompted to do so entirely for the defense of justice against injustice, without any attempt to conceal his indignant sorrow for those who are willingly led by designing demagogues, without desire to omit any demonstrations of grievous pity for them, and without power to suppress the distressful feeling that the Association will see evil days if the wrong-doers prevail. In his defense of good morals the writer found it necessary to point out the blunders in both the spirit and the letter of the "revised" Code, and to bring to light the enormities of the disorganizers and the incapacity of the revisers, not as individuals, but all together as the willing agents of a turbulent and mischievous faction.

A Conservative Member.

"The Texas Medical Law."

To the Editor:—I have to thank you for calling my attention to an editorial article in the current number of the *Texas Medical Journal*, in which the Illinois State Board of Health is accused of having made "a bad break with regard to the law in Texas," in its report on medical education, prepared by the present writer. Since that report has not yet been published the Texas *Journal* must refer to an article originally published in the Journal of the American Medical Association, March 10, 1894, under the title "Legal Requirements for the Practice of Medicine in the United States." It is, therefore, proper that this notice of the Texas *Journal's* charges should appear in the same columns.

The article consisted substantially of "a *résumé* of the legal requirements for practice in each State and Territory of the United States in force Jan. 1, 1894," and in it appeared the following:

"Texas.—A license issued after examination by a District Board of Medical Examiners. Diplomas confer no right to practice."

This was stated to be the law in force in Texas, Jan. 1, 1894—the "legal requirement" for the practice of medicine in that State.

The *Texas Medical Journal* now asserts that this is a mistake due to ignorance, for which there can be no excuse, and adds:

"It is notorious that the Texas law requires nothing but a *diploma* (a license can be procured by virtue of it alone) and the clerk of the county court is the judge of that diploma, even though it be written in Latin and he is unable to read it."

The Texas Civil Statutes, in force on the first day of January, 1894, has the following under "Title 73—Physicians":

Article 3632. *Duty of board to examine applicants, etc.* It shall be the duty of said board [one of the District Boards of Medical Examiners authorized to be created by a preceding article] to examine thoroughly all applicants for certificates of qualification to practice medicine in any of its branches or departments, *whether such applicants are furnished with medical diplomas or not*, upon the following named subjects, to-wit: Anatomy, physiology, pathological anatomy and pathology, surgery, obstetrics and chemistry; but no preference shall be given to any school of medicine. (Const. Art. 16, § 31; Act Aug. 21, 1876; 15 Leg. p. 221.)

There is no disposition on the part of the writer to evade responsibility for any sins of omission or of commision in the report on medical education; doubtless there are such, but the *Texas Medical Journal* is not dealing with one of them in this instance. The report must be judged for what it is, not for what it might be. In the *résumé* in question it was undertaken to state what the law required of medical practitioners—not whether the law was good or bad, efficient or inoperative, well enforced or neglected.

As a matter of fact, so stated in previous reports on medical education by the Illinois Board since 1883, the Texas law is a dead letter—whether so through the supineness or indifference of the profession it is not undertaken to say. But it may not be out of place to suggest that one, if not the only, difficulty in the enforcement of the Texas medical law as it stands to-day on the statute books—requiring a thorough examination of all applicants, "whether such applicants are furnished with medical diplomas or not"—has arisen from the acts of the compilers of the Penal Code of Texas.

The penalties for practicing before having obtained and recorded a certificate or license from the proper District Board of Medical Examiners, as provided in the article above quoted, are referred, in Article 3638, to the Penal Code. In the compilation of this Code in 1879, three years after the medical practice act went into effect, there appears a chapter entitled, "Ch. 3.—Unlawful Practice of Medicine." It consists of four articles, framed, as is specifically stated, upon the medical practice act of 1876. The first article, numbered 396 in the Code numbering, prescribes the penalty for practicing without having obtained the certificate of qualification; 397 defines what constitutes a separate offense; 398 fixes the penalty for failing to file the certificate; 399 defines the classes of practitioners who are exempt from the provisions of the Act—those qualified under the Act of 1873, those in practice five years prior to Jan. 1, 1875, and midwives.

It will be seen that the important articles are 396 and 398. Article 396 is as follows:

"If any person shall practice for pay, or as a regular practitioner, medicine in this State, in any of its branches or departments, or offer or attempt to practice without first having obtained a certificate of professional qualification from some authorized board of medical examiners [or without having a diploma from some accredited medical college, chartered by the Legislature of the State, or its authority, in which the same is situated], he shall be punished by fine not less than $50 nor more than $500."

As already stated, the compilers of the Code distinctly announce that the Articles composing this chapter "are framed upon the Act of Aug. 21, 1876."

Nowhere in that Act, either directly or by implication, is there any warrant for the phrase above bracketed in the quotation of Article 396. Not only is there no warrant in that Act for recognizing as an alternative qualification "a diploma from some accredited medical college," but the Act expressly forbids such recognition. All applicants for license to practice medicine in Texas are required by the law (Article 3632) to submit to be thoroughly examined in certain specified branches, "whether such applicants are furnished with medical diplomas or not." Article 3637 categorically defines the classes which are exempt from this examination; holders of diplomas are not therein exempted. Article 3638 is cumulative on this point.

The bracketed clause is an unwarranted and mischievous interpolation. The only other important Article of the compilers (398) was held by the court (French vs. S. 14 App. 75.) to be inoperative because "irreconcilably in conflict with the Act of 1876," and a modification was made to bring them in harmony. Can it be doubted that if the question was raised, Article 396 would also be held to be "irreconcilably in conflict," not only with Article 3632 but with the expressed purpose and policy of the Act as a whole?

F. W. Reilly, M.D.
Ex-Sec'y Ill. State Board of Health.

Chicago, April 16, 1894.

From a Woman Physician.

An Open Letter to Dr. W. W. Parker.

Conant, Lake Co., Florida, April 6, 1894.

With the courtesy of a Virginia gentleman, and there are none more courteous, and with the fairness of age and experience, will Dr. Parker listen to my story, and hear my plea, before he utters sentence against me—a woman physician?

My first year as doctor was spent as interne in a hospital conducted by women for women. During the year there were nearly one hundred births, two-thirds of which were illegitimate. The rules of the institution admitted only unfortunate girls who were primipara. No mother was permitted to leave without her child, nor child without its mother, if both were living. There I heard their stories; shall I repeat them?

An ignorant child of fourteen a mother! What is the age of legal consent in your State? A domestic chloroformed in an institution having male physicians; a girl overpowered in a reputable physician's office. These for variety, with the host of deceived by promise of marriage.

Afterward, I was the woman physician in an institution employing one woman and several male physicians. Complaint after complaint was poured into my ears by young women patients, of insult and vile insinuation from one of the doctors. Reporting to headquarters, as I learned from my predecessor's experience, called for an occasional apology on the part of the offender and then was made the subject of merriment and rude jest. Could Dr. Parker have stood in my place and noted the obscene look and unhallowed touch in the gynecological consulting room, I believe he would have felt like striking. Babes were not in the program there. I would not insinuate farther, for my position and opinions were too thoroughly understood for me to know more. When the situation became unendurable I was told that if these things were the cause of my resigning I would not better myself, as I would find the same conditions everywhere. One of the younger physicians who seemed a Christian gentleman, told me that he had been as much shocked as I, at first, but had found that all men told their jokes and their dirty story, and he had come to tell his with the rest.

I learned afterward of his death. The immediate cause was said to have been grief over the death of his young child from blood poisoning.

Settling in a town with upwards of a dozen male practitioners, I was asked by one what I would do if appealed to by an unfortunate girl. I replied: "Murder is murder. I would as soon take a child from its crib and dash its brains out, as to destroy the youngest fetus." He replied: "There is not a doctor in town but has and will do it. You are no friend to your sex." I had no reason to contradict his first statement, but as to the last I loved woman too well to help her add murder to her other sin. If mother love and the touch of baby fingers did not save her to God and womanhood nothing could. That it could, I had proof in many cases where forsaken mothers had, in spite of all, carved for themselves and their fatherless children an honorable place in the world.

He gave me to understand that he had two abortion cases on hand and had asked with a view to my helping him out.

In a practice of thirteen years, I can remember being appealed to just twice—both times by women who had never seen me before—one a girl; one a wife with the consent of her husband. The unfortunate girl vanished as she came, plus the memory of a few earnest words. The wife was delivered of a fine child in due time.

The Doctor strikes a strong blow in a much needed direction when, in reference to "the preventive treatment against children," he says: "We are standing upon the mouth of a volcano wider than Vesuvius." And with all my woman's heart and brain I honor him for it, as I reverence and honor the God-like in man, but since as a girl I cried with my pet cat over her dead kittens—killed by a neighboring tom cat—I have never seen cause to hold the male element less responsible for the slaughter of the innocents than in the days of Herod.

Then, as now, men seem to fear the coming of Christ born of woman, to dethrone earth's sensuality and cruelty.

This is my plea: "What God hath joined together let not man put asunder," in the medical profession or elsewhere.

Let men and women join forces under the banner of Him who said: "He that is without sin among you, let him first cast a stone at her;" and also: "Neither do I condemn thee; go, and sin no more."

Let us join forces all along the line, and fight this hydra-headed monster to the death and save our nation.

O. E. Worcester, M.D.

For a Medical Jury.

Brackettville, Texas, April 15, 1894.

To the Editor:—I hasten to the support of the suggestion of your New York contributor (in No. 13 current volume) for a revision of the statutes in a manner to provide for "a jury of medical men in all cases where medical evidence is required." I would establish at least one such jury in every county. I would arraign for trial all professors of clinical morphology, wherever they may be found at large, and all speculators on the psycho-physical relations of man, whether in the East or West. I would not try them by rule of law, but simply attempt to find out what is the matter with them. "If it is the physician's business intelligently to treat disease, then here is a fine field for future development." The jury would be required to clear and determine such questions as this: What is the mental condition of a medical man who writes about another to the Journal that "his work was fruitless, not because it did not have all the elements of truth, active and professional disgrace (to quell); but because of the apathy of the profession itself." And again, "he ate largely of oatmeal which of itself is a paralyzing food." And again, "while it is right to use all

peripheral means of treating gynic diseases the central or centrifugal one of a proper diet should not be neglected." And again, "sweets are at a premium because of ethical esthetic taste. Women grown on society diet can not have full development. Hence, in my opinion, the decline of the birth rate," etc. The birth rate probably *is* diminishing under this kind of thing and the jury should look to it, taking care that the State suffer no injury. Oatmeal is not the only paralyzing food in the United States.

The psycho-physical man asks of the Journal: What distinguishes the practice of our profession in treating the diseases and repairing the injuries of the *genus homo* from that of the veterinarian? Thereafter he affirms "that excessive feelings of displeasure, when protracted, produce a deficiency of innervation and quite a list of pathologic conditions have been attributed to this cause, *e.g.*, muscular debility, dyspnea, typhus, amenorrhea, chlorosis, dropsy, scurvy, tuberculosis, scirrhosis and medulla sarcoma." The placing of "medulla sarcoma" in such a list as that is probably a menace to public health. But that is a question of fact for the jury while they are engaged with the matter of drawing the line between veterinary medicine and psycho-physics. Let us have the jury. The woods are full of medical cases which otherwise will fail of proper adjudication. Medical men demand it. Legal men would hail it with joy. Ecclesiastical men would find in the operations of such a tribunal the beneficence without the terrors of the holy office.

Texas M.D.

Railroad Rates.

Flint, Mich., April 9, 1894.

To the Editor:—I wish to emphasize all that Dr. Daniel Lichty, of Rockford, says in your issue of the 7th inst., in reference to railroad transportation for members of our Association and their families, who have in the past, and who want to attend in the future the annual meetings of the Association.

Joining the Association myself at the New Orleans meeting in 1869, and attending its annual gatherings quite regularly for several years thereafter, I found that the comparatively small rebate in railroad fares afforded members, together with the necessary drafts upon time and purse, were a serious consideration when contemplating a trip to the place of meeting, each year, and have been among the absentees for several years past.

The first meeting of the Association in San Francisco was held when money was plenty and the U. P. and C. P. railroads were new, and the desire to see these roads, the vast tract of diversified country through which they were made, coupled with a desire to see the metropolis of the Pacific Coast, induced many physicians to put forth great efforts to attend that meeting. But much of this is now changed, and I greatly fear that, unless a *tempting fare* is offered to us, we may remain at our posts, still, doing more than any other class of people to ameliorate the condition of mankind, and thereby rendering a service directly and indirectly which, in over forty-five years of practice, I have found railroads loth to acknowledge and appreciate.

Henry C. Fairbank, M.D.

Rates to San Francisco.

Pittsburg, Pa., April 10, 1894.

To the Editor:—Considerable space has already been taken up in the Journal on the subject of transportation to the Association meeting, and I am reluctant to presume upon you, but I feel that unless there are some concessions made on the part of the railroad authorities the attendance from the East will be very small. I interested myself some time since in getting up a party to go by special train, with the expectation of low rates, and had secured the names of fifty-six. To-day with the present prospect of increased rates I can only get twelve of this same company to say they will go. Leaving out of consideration the fact that perhaps to no other body of men are the railroad companies under greater obligations than to the medical fraternity, as a matter of business, looking at it in a mercenary manner, it would pay them to reduce the rates one-half on account of the larger number of passengers.

Can not a more determined effort be made to make the rates more satisfactory? Yours sincerely,

John Milton Duff, M.D.

Refilled Prescriptions.

Ruston, La., April 11, 1894.

To the Editor:—Has a druggist the right to refill a formula for a patient without the knowledge or consent of the physician? Has the patient the right to obtain a copy of formula from the druggist without the knowledge or consent of the author? In the event the patient is going to leave the community and take up residence in some distant part, has he the right then to obtain a copy of formula, and has the druggist the right to give it with the knowledge of the prescriber? Very respectfully, R. F. H.

Endorses Dr. Cohen et alii.

Denver, Col., March 19, 1894.

To the Editor:—There are members of the Association outside of Pennsylvania who indorse most cordially Dr. Cohen's recent criticism of the policy of the Journal in regard to advertisements of proprietary articles. I, for one, give an unqualified assent to all that he has said, and in addition consider the editorial attitude of the *Medical News* and the *Pittsburg Medical Review* most commendable. They take the only stand that honorable adherents of our Code of Ethics can take. Very respectfully,

Wm. P. Munn, M.D.

Supports Dr. Cohen.

Alma, Mich., March 19, 1894.

To the Editor:—Please record me as an ardent supporter of Dr. Solis-Cohen's contention against advertising quack remedies in *our* Journal. Yours,

I. N. Brainerd.

BOOK NOTICES.

The International Medical Annual and Practitioner's Index: A Work of Reference for Medical Practitioners. Edited by Wm. Alexander, M.D., F.R.C.S., and thirty-nine collaborators. New York: E. B. Treat. 1894. Price $2.75.

This is the American edition of the well-known *Annual* published in Bristol, England, for the last twelve years. The object of the *Annual* is to present its readers with "an exact and impartial record of the advances of medical science." In the rather successful effort to make the work truly cosmopolitan, the *Annual* has for some years past included among its contributors many American writers. For this volume we note the names of Hobart A. Hare, Wm. T. Buell, Paul F. Mundé, G. M. Hammond, H. D. Chapin, E. F. Frost, Frank W. Jackson, John Ridlon, J. Madison Taylor, Irving S. Haynes and John B. Hamilton. The *Annual* does not assume to make a report on *all* the medical literature of the preceding year, but takes note only of the "advances," or the progress made in medical knowledge of the subjects within the scope of the work.

Charaka-Samhita, Translated into English. Published by Avinash Chandra Kaviratna, Calcutta. Part VIII.

In our issue of September 23, we commented editorially on the character of this work, its great antiquity and its interest to all physicians.

This fasciculus concludes the nineteenth lesson, and gives

a translation of the twentieth, twenty-first and a part of the twenty-second. In the twenty-first lesson the physical faults are said to be: 1, excessive tallness of stature; 2, excessive shortness of stature; 3, excessive hairiness; 4, excessive baldness; 5, excessive darkness of complexion; 6, excessive whiteness of complexion; 7, excessive obesity; and 8, excessive leanness. The last two are especially damaging. The illustrious son of Atri had a very practical knowledge of his subject, for he says:

"Of the two, viz.: excessive corpulency and excessive emaciation, the latter is rather tolerable; for though the corpulent and the emaciated are equally situated, yet if disease assails both of them, it is sure to afflict the corpulent man more than the emaciated one."

For the cure of these evils, dietary regulations, exercise, and regulation of sleep are commended. This fasciculus is not less interesting than its predecessors.

A Text-Book of the Diseases of Women. By HENRY J. GARRIGUES, A.M., M.D. Containing three hundred and ten engravings and colored plates. Philadelphia: W. B. Saunders. 16mo., cl., pp. 690. 1894.

This volume, which is dedicated to Dr. Abraham Jacobi, has been written for physicians, especially that class who "have not had the advantage of hospital training, and who go to a post-graduate school in order to learn gynecology;" and also for "that larger class who would like to go to such an establishment but who find it impossible to leave their practice;" and finally, for "undergraduates studying in medical colleges."

The work is therefore intended to be one for the general practitioner and medical student, but the surgeon will find much to interest him, and he will turn to this work for hurried consultation much oftener than to some of the more elaborate "text-books" and "systems." The later and standard operations are described concisely. A chapter on sterility and its treatment concludes the volume. The illustrations are excellent, many of them original, and the book is well printed.

NECROLOGY.

CORYDON L. FORD, M.D., of Ann Arbor, Mich., April 14. Dr. Ford's death was the result of an attack of apoplexy which he suffered while on his way home from the medical building. He was in his 80th year, having been born Aug 29, 1813, in Lexington, N. Y. His diploma was obtained from Geneva Medical College, where after graduation he was appointed Demonstrator of Anatomy. In 1846 he was appointed Demonstrator of Anatomy at the Buffalo Medical College. In 1854 he was invited to the Chair of Anatomy in the Medical Department of the University of Michigan, where his best work was done. At the various medical colleges with which Dr. Ford has been connected he has delivered 109 courses of lectures. During the past quarter of a century Dr. Ford has been considered one of the best authorities in anatomy in this country. His death has cast a gloom over the University, and by it that institution has suffered an irreparable loss.——N. M. Perry, M.D., of Troupsburg, N. Y., April 3.——Hulbert Agnew, M.D., of Philadelphia, April 6, aged 32. He was a cousin of the late Prof. D. Hayes Agnew.——Chas. Cawood, M.D., of Knoxville, Tenn., April 7, aged 32.——P. Harold Hayes, M.D., of Buffalo, N.Y., April 9. He was born in Bristol, Ontario County, New York, in 1823, and he was graduated from the Jefferson Medical College at Philadelphia in 1848. He practiced in Binghamton for many years. He went to Buffalo in 1892 where he has since resided.——Carl F. Rudden, of Joliet, Ill., April 9, aged 62.——James M. Hoyt, M.D., of Walled Lake, Minn., April 10.——John E. Wilcox, M.D., of Hoosic Falls, N. Y., April 10.——Thornton H. Flemming, M.D., of Canton, Ill., April 11, aged 85.——Alex. C. McChesney, M.D., of Chicago, April 14, at Nice, France, aged 53.——Chas. W. Davis, M.D., of Chautauqua, N.Y., April 9.

ASSOCIATION NEWS.

The Association Train will leave Chicago Monday, May 28, via Santa Fe R. R., Rio Grande Western, and Southern Pacific, for San Francisco via Denver, Colorado Springs, Leadville, Manitou, Glenwood Springs, Salt Lake, Ogden, Truckee and Sacramento. Returning, after the meeting, the train will pass through Sacramento and Northern California to Portland, thence east by way of the Northern Pacific R. R. to St. Paul. C. M. & St. P. R. St. Paul to Chicago. A stop over at Yellowstone National Park for those who desire it has been arranged, and it has been understood that at several places on the journey there will be short stops. President Hibberd's party in a special car join the train at Chicago, and the St. Louis party are expected to join at Kansas City. From all points east and south, concentrating on this train should be effected at Chicago and St. Louis. For all information relating to this train, fares, etc., address J. M. Connell, 212 Clark st., Chicago, or any agent of Santa Fe line in other cities. Rates promised are the lowest excursion rates at time of departure.

This is the only route on which arrangements have been perfected by the Trustees.

Section on Practice of Medicine of the American Medical Association.—The officers of the Section on Practice of Medicine for the meeting of the ASSOCIATION in San Francisco will be glad to receive the titles of any papers which gentlemen desire to read at that meeting.

A large number of papers have already been promised for the meeting by members of the profession on the Pacific slope, and it is earnestly desired that an equal number of contributions should come from Eastern portions of the country.

H. A. HARE, Chairman,
222 S. Fifteenth Street, Philadelphia.
W. H. WASHBURN, Secretary,
803 Grand Avenue, Milwaukee, Wis.

Section on Neurology and Medical Jurisprudence.—Additional papers in this Section.

"A Study of the Ocular Symptoms of Friedrich's Disease," by Chas. A. Oliver, Philadelphia, Pa.

"Two Cases of Brain Tumor," by Anne Burnet, Wausaw, Wis.

"Dyspepsia, a Nervous Disease," by Chas. H. Hughes, St. Louis, Mo.

"The Forensic Aspect of Sadism with a Case," by W. L. Baum, Chicago, Ill.

"Lesions of the Sensory Portion of the Internal Capsule," by H. G. Brainerd, Los Angeles, Cal.

"Acute Mania," by John W. Givens, Blackfoot, Idaho.

A paper by Sarah Hackett Stevenson, Chicago, Ill.

"The Post Active Treatment of Narcotic Habitués," by J. B. Mattison, Brooklyn, N. Y.

FRANK P. NORBURY, M.D., Secretary.

Section on Obstetrics and Diseases of Women. Preliminary Program.—Address of the Chairman of the Section.

"Treatment of Fibroid Tumors of the Uterus," by Franklin H. Martin, M.D., Chicago, Ill.

"Recto-Vaginal Fistula, its Etiology and Surgical Treatment," by Augustus P. Clarke, M.D., Cambridge, Mass.

"Suspension of the Uterus in Extreme Anterior Displacements," by H. R. Holmes, M.D., Portland, Oregon.

"Placenta Previa," by Llewellyn Eliot, M.D., Washington, D. C.

"The Pedicle in Abdominal Hysterectomy," by A. H. Cordier, M.D., Kansas City, Mo.

"The Influence of Gestation upon Chronic Diseases of the Kidney," by T. Ridgeway Barker, M.D., Philadelphia, Pa.

"Tetanus Puerperum," by Allison Maxwell, A.M., M.D., Indianapolis, Ind.

"A Case of Didelphic Uterus, Unilateral Hematrometria, Hemasalpinx and Hematocolpos," by X. O. Werder, M.D., Pittsburg, Pa.

"Removal of Fibroid Tumors through the Abdomen," by E. E. Montgomery, M.D., Philadelphia, Pa.

"Some of the Uses of Strychnia in Obstetric Practice," by John Milton Duff, M.D., Pittsburg, Pa.

The American Medical Association.—San Francisco is justly proud of her harbor, and since it is probable that the delegates and vistors to the American Medical Association will be given an excursion upon its waters, it will be of interest to many to learn something of its beauties. We will imagine we are upon one of the large excursion steamers and are starting upon our day's outing. The usual rush through the gates for the boat at the last moment is over, the inevitable half-minute-too-late man has been left behind and is sorrowfully wending his way back to his hotel, regretting the good time and the free lunch that have departed from him, and the boat with her load of guests has drawn out of the slip into the green bay, and with prow pointing northward is gathering headway for the journey.

It is not yet time for the usual afternoon breeze. The sun is shining brightly through a sky that will rival in depth of color and purity of tone the more famous skies of the old world; to the right the green slopes of the Coast range of mountains, looking blue in the distance, rise gradually from the shore until having reached the sky the vision is interrupted and the beyond is left to the imagination, while to the left the receding city with its undulating outline is growing gradually less distinct, and its rumble and roar is being replaced by the sound of churning waters from the wheels and the hum of happy voices. On the upper deck and forward is a good position from which to note points of interest.

To the eastward is Goat Island. This was formerly called Yerba Buena. Its present name doubtless arose from the fact that during the early forties it was used as a goat pasture. At present it is one of Uncle Sam's possessions. The Oakland and San Francisco ferry boats run just south of this Island and many tragedies are said to have occurred near its shores. Occasionally one reads in the papers of "the demon of Goat Island." If any are curious as to the legend, inquire of some native son or daughter and be enlightened. Alcatraz Island lies to the north. It belongs to the United States and is used as a fort and military prison. It seems too bad to appropriate so bright a spot to such use as the latter, but government and sentiment are not usually very closely related. Over to the left on the main shore is Fort Mason—commonly called Black Point, while further westward is Fort Point, backed by high bluffs that have recently been strongly fortified. The dirt mounds on their summits, covered with waving wild oats, look innocent enough, but hidden in their depths are engines of destruction so placed as to fully command the entrance to the harbor.

About equi-distant between the forts, the Pacific Coast headquarters for the Army is located. The neat quarters of the officers are almost covered by trailing vines and climbing roses that partly obscure their outlines. Soon after we have passed Alcatraz all eyes will be turned to the westward to drink in the view presented. In the center, like a mighty river, lies the Golden Gate; beyond is the limitless expanse of the Pacific Ocean; to the north the Mission Hills rise abuptly from the shore to culminate a few miles away in Mt. Tamalpais, while on the south the gentle slopes of the Presidio, dotted with evergreen trees, lead backward toward the city.

Our boat moves on, and new scenes shut this one out, but the impression made will long remain.

With a long sweep in toward Saucelito, nestling among the trees at the mountain's base, we have turned to the east, and are steaming along past Belvidere and Tiburn. Angel Island, which we are now approaching, is of some interest to this company of sightseers; here is located the quarantine station, and perhaps we will be given an opportunity to land and make inspection, but probably our boat will be headed for Raccoon Straits through which we will pass and cruise about in the broad bay above.

Here we will have an opportunity to point out Red Rock, Two Brothers, Hen and Chickens, McNear's Landing—the most delightful picnic place on the bay—the Chinese village of shrimp fishers and other places with which we may be familiar.

Our objective point is Mare Island. This is the Government Naval repair and supply station for the Pacific Coast. Through the kindness of Surgeon-General Tryon and Surgeon Wood, of Mare Island, we will be permitted to land and inspect all that is of interest. Many famous old vessels have been refitted here, and perhaps some are lying in the offing now. After having spent an hour at this place we will board our steamer and start on our return.

There yet remains much to be seen, but the sun is gliding over toward the west, and we must hasten or it may be dark before the circuit is complete. We steam back past Vallejo, Port Costa, with its immense grain depots, Berkeley, our State University town. Oakland, the City of Churches, and Alameda the charming residence suburb. It will be of interest, as we cross the bay on our way home, to notice the Spreckles Sugar Refinery, the Union Iron Works, where have been constructed such war vessels as the *Charleston* and *San Francisco*, and the Pacific Mail Steamship docks, where the Chinese coolies were at one time landed by the thousands. The sun is dipping into the western waters, and as our boat glides into the slip, the twinkling lights of the city invite us back to our accustomed duties, refreshed and invigorated by our day's outing, and ready for whatever of entertainment may yet be in store.

R. L. Rigdon, Secretary.

SOCIETY NEWS.

Eleventh International Medical Congress.

To the Editor:—I send you a list of the delegates from America to the Congress at Rome, by request of Dr. T. H. Manley. Should you wish to describe the Congress itself, simply add chaos to confusion, with plenty of Italians who are placed in the halls to impart information; these never answer a question till the "tip" appears. The Latin races will not listen to the English tongue. We are the envy of the English Section because we have an executive committee who placed our members where they belong and have seen that the American papers were read. The Italian is indolent and apparently lacking in executive ability. One little incident will show you something of this: The managers published maps of the buildings—which are very large—and when the mistakes, which are frequent and gross in these plans, were pointed out, there was simply a shrug and a reply that everything was very clear.

One of the newspapers had a correspondent here for thirty days before the opening, and he has not found any Italian secretary or manager who had any conception or knowledge of any fixed plan. The truth is, there were no plans. Three time tables would give three different times of meetings. But the Americans have been on hand all the time. Trusting you can use the list, I remain very truly yours,

Douglas H. Stewart, M.D., New York City.

The following is a list of American physicians at the Eleventh International Congress at Rome:

Austin, H. W., Washington, U. S. Marines.
Ainley, Daniel, Halifax.
Belcher, Sarah, New York.
Baldwin, A. A., New York.
Brown, Adelaide, San Francisco.
*Bleyer, J. Mount, New York.
Borden, M., New York.
Bohn, H., Philadelphia.
Bradfield, G. M., Philadelphia.
*Bernays, A. C., St. Louis.
Blake, C. J., Boston.
Brown, A. A., Montreal.
Barnes, J. Steele, ——.
Corlett, Wm. T., Ohio.
*Cannadays, C., Virginia.
Cohen, E., Minneapolis.
Cornu, Felix, Montreal.
Carlucci, Francesco, New York.
Cunningham, John, Connecticut.
Caldwell, M., Wisconsin.
Campbell, H. A., Syracuse.
Cannon, J., Iowa.
Dickey, J. L., Virginia.
Dubois, Frank L., Washington, U.S. Navy.
Dick, Alfred, Buffalo.
*Davis, J. C., ——.
Engleman, J., St. Louis.
Field, H. A., Brooklyn.
*Frank, Jacob, Chicago.
Furbeck, Peter R., Indiana.
Lowman, John H., Cleveland.
Lynch, John B., New York.
Landesburg, Max, Philadelphia.
*Link, John Eph., Indiana.
*Moise, Bettinidi, New York.
Manley, Thos. H., New York.
Miller, A. M., Pennsylvania.
Mannem, Earnest, Illinois.
Mallory, P. B., Boston.
*Moore, James, Minnesota.
Miller, Wymond, Montana.
*Murphy, J. B., Chicago.
Nuttall, Geo. H. F., Baltimore, Johns Hopkins College.
Owen, A., Indiana.
Pynne, J. H., ——.
Parker, Carter A., Connecticut.
Preble, Robert, Chicago.
Price, John P., Pennsylvania.
Patton, Stewart, West Virginia.
Pellon, P. C., Minnesota.
Rawlins, J., Florida.
Ring, Frank, St. Louis.
Richardson, J. J., West Virginia.
Rice, W. B., Boston.
Sochatzy, M., New York.
Sarton, H., California.
Simpson, John D., Minneapolis.
Sneve, Haldor, Minneapolis.
Stoddard, Chas., Chicago.
*Smith, Joseph R., New York, U. S. Army.

Flour, Thos., Baltimore.
Griscom, M., Philadelphia.
Goldstein, M. A., St. Louis.
Granger, D., —.
Gay, Geo. W., Boston.
Girard, A. C., Chicago, U. S. Army.
Hayden, S. H., Chicago.
Hoech, K., Minneapolis.
*Hewettson, J., Baltimore.
*Irwin, B. J. D., Washington, U. S. Army.
Jeffries, Horace, Boston.
*Jacobi, A., New York.
Joseph, L., Cincinnati.
*Judson, Daland, Philadelphia.
Keaney, Francis, Boston.
Koser, S. S., Pennsylvania.
Kistler, O. F., Peru.
Krelder, Geo. N., Illinois.
Kee, A. H., California.
Kitchen, E. E., Canada.
*Kay, T. W., Pennsylvania.
Keller, Thos. F., Ohio.
Spring, C. B., California.
Steadman, Thos. L., New York.
Stannard, Frank, Chicago.
Sumner, C. J., Buffalo.
Sell, Edward, New York.
Strong, Walter, Philadelphia.
Simmons, G. C., Sacramento.
Siegfried, Chas., Washington, U. S. Navy.
*Stewart, D. H., New York.
Shepherd, E. J., Montreal.
Senouse, D. W., Iowa.
Tobin, Wm., Halifax.
*Tyner, T. J., Texas.
Torrison, Geo., Kentucky.
Tatelbee, J. B., Chicago.
*Turck, J. F. B., Chicago.
Von Klein, Carl H., Cleveland.
Wolff, Jacob, Chicago.
Warner, W. R., Philadelphia.
Williams, H. A., Buffalo.
Wardsworth, W. S., Philadelphia.

Those marked thus * read papers.

Dr. A. Jacobi, of New York, President; Dr. Wm. Tobin, of Halifax, Secretary for Canada; Dr. Douglas H. Stewart, of New York, Secretary for United States.

Executive Committee: Dr. Thos. H. Manley, New York, Chairman; Dr. G. C. Simmons, Sacramento; Dr. J. Engleman, St. Louis.

DOUGLAS H. STEWART, M.D., Secretary.

Pennsylvania State Medical Society.—The following is a list of the addresses and papers which have been appointed to be read or have been secured by the Committee on Scientific Business for the forty-fourth annual meeting of the Pennsylvania State Medical Society, to be held in Philadelphia, May 15 to 18, inclusive:

Annual Addresses: "Medicine," Dr. W. S. Foster, Pittsburg; "Surgery," Dr. G. D. Nutt, Williamsport; "Obstetrics," Dr. E. E. Montgomery, Philadelphia; "Mental Disorders," Dr. T. M. T. McKennan, Pittsburg; "Hygiene," Dr. J. H. Wilson, Beaver; "Ophthalmology," Dr. Geo. E. de Schweinitz, Philadelphia.

Medical Papers: "Hydrophobia," Dr. Charles W. Dulles; "Dietetics," Dr. H. F. Slifer; "Unique Cases in Practice," Dr. John M. Batten; "Therapeutics of Whooping Cough," Dr. W. C. Hollopeter; "Colorado Climate for Consumptives," Dr. William P. Munn (Denver, Col.); "Subcutaneous Emphysema," Dr. R. G. Curtin; "Diarrheal Diseases," Dr. John Aulde; "Acroparesthesia," Dr. Wharton Sinkler; "Typhoid Fever," Dr. Adolph Koenig; "Tapping of Abdominal Effusions as a Therapeutic Measure," Dr. W. E. Hughes.

Surgical: "Radical Cure for Hernia," Dr. E. Laplace; "Modification of Pirogoff's Amputation," Dr. F. Le Moyne; "Surgery of Gall-bladder," Dr. X. O. Werder; "Section of Tendo-Achillis in Fractures and Dislocations," Dr. T. S. K. Morton; "Appendicitis," Dr. John B. Deaver; "Amputation Near the Ankle," Dr. G. G. Davis; "Stricture of the Urethra," Dr. O. Horwitz; "Treatment of Fractures at the Lower End of the Humerus," Dr. Charles W. Dulles; "Acute Intestinal Obstruction," Dr. J. M. Barton; "Ocular Exploration of the Bladder and Urethra," Dr. Edward Martin; "Thyroidectomy," Dr. John B. Roberts.

Obstetrical and Gynecological: "Puerperal Eclampsia," Dr. J. C. McAllister; "Uterine Fibroids," Dr. Charles P. Noble; "Acute Endometritis," Dr. J. M. Baldy; "Studies in Obstetrics and Gynecology," Dr. Anna M. Fullerton; "Symphyseotomy and other Procedures," Dr. Horace Fox; "Cholecystoenterostomy." Dr. B. F. Baer.

Eye and Ear: "Corneal Ulcers," Dr. S. L. Ziegler; "Diseases of the Ear," Dr. S. Mac Cuen Smith; "Surgical Treatment of Internal Strabismus," Dr. H. F. Hansell; "Eye Strain," Dr. Charles H. Thomas; "Tympanic Vertigo," Dr. Charles Burnett; "Massage Methods in the Relief of Tinnitus," Dr. Louis F. Lautenbach; "Capsulotomy after Removal of Cataract," L. Webster Fox.

Nose and Throat: "Intra-nasal Surgery," Dr. W. H. Daly; "Naso-pharyngeal Catarrh," Dr. William R. Hoch.

Skin: "Clinical Observations," Dr. J. V. Shoemaker; "Epithelioma of the Skin," Dr. M. B. Hartzell.

Tuberculosis: Arrangements have been made for a discussion on "Medical and Surgical Tuberculosis," and papers will be read on "Medical Tuberculosis" as follows: "Curability and Treatment," Dr. S. S. Cohen; "Psychical Phases," Dr. J. M. Taylor; "Contagiousness," Dr. A. M. Cooper; "Prophylaxis," Dr. L. F. Flick; "Medical Tuberculosis," Dr. Hugh Hamilton; "Strychnin Treatment of Pulmonary Consumption," Dr. T. J. Mays; "Case of Tubercular Meningitis," Dr. D. Longaker.

The following members of the Society have announced their wish to take part in the discussion on "Medical Tuberculosis:" Drs. J. H. Musser, W. B. Ulrich, J. C. Wilson, J. S. Cohen, W. E. Hughes.

The following papers on "Surgical Tuberculosis" will be read: "Tuberculosis of the Fallopian Tubes," Dr. C. B. Penrose; "Treatment of Tubercular Caries of the Spine," Dr. H. A. Wilson; "Case of Tuberculosis of the Knee-joint," Dr. E. B. Haworth.

The following members will take part in the discussion on "Surgical Tuberculosis:" Drs. J. B. Roberts, DeF. Willard, G. G. Davis, J. K. Young, J. M. Barton, B. F. Baer.

"Tubercular Manifestations of the Skin" will be discussed by Dr. H. W. Stelwagon.

Besides these the following papers on general subjects are announced: "Christian Science and the Medical Profession," Dr. H. H. Longsdorff; "Should the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION be used to Promote Quackery," Dr. S. S. Cohen; "Reasons for the Revision of the Code of Ethics," Dr. E. Jackson; "Cramming in Medical Schools," Dr. O. H. Allis.

The Committee has obtained the consent of Dr. Benjamin Sharp, of the Academy of Natural Sciences, to exhibit to the Society his beautiful series of lantern pictures of the Leper Settlement at Molokai, Sandwich Islands, and of lepers in various stages of the disease.

The Tennessee State Medical Society.—The Tennessee State Medical Society held its annual election of officers at Memphis April 11, which resulted as follows: President, Dr. F. L. Sim, Memphis; Vice-President for West Tennessee, Dr. G. B. Gillespie, Covington; Vice-President for Middle Tennessee, Dr. G. C. Savage, Nashville; Vice-President for East Tennessee, Dr. D. E. Shields, Morristown; Secretary, Dr. S. S. Crockett, Nashville; Treasurer, Dr. Ambrose Morrison, Nashville. Dr. Dulaney, of Bristol, is the retiring President, and as such becomes a member of the Judicial Council.

Morgan County (Illinois) Medical Society.—The regular meeting of this Society was held Thursday, April 12, in the Society Hall, Jacksonville. S. B. M. Griffith, of Springfield, Ill., member of the State Board of Health, read a very thorough and scientific paper on "The Salient Points in Preventive Medicine." A free discussion followed. A committee consisting of Drs. F. P. Norbury, G. V. Black and H. F. Carriel was appointed to prepare suitable resolutions relative to the death of Dr. Jno. H. Rauch, late Secretary of the State Board of Health.

The Tri-State Medical Society (Illinois, Iowa and Missouri) will hold its next meeting at Jacksonville, Ill. This Society has grown rapidly into one of the foremost in the West, and promises to be a vigorous, working Society. Its meeting in Kansas City April 3, 4 and 5 was a great success, both in attendance and work done. The physicians of Kansas City were especially hospitable and entertained the visiting members royally.

The Dubois Medical Society held its annual meeting at Jasper, Ind., April 3. The following officers were elected for the ensuing year: B. B. Brunnock, of Jasper, President, and C. R. Ramsbrok, of Huntingsburg, Secretary and Treasurer. Dr. W. R. McMahan was appointed a delegate to the AMERICAN MEDICAL ASSOCIATION.

MISCELLANY.

At the fifteenth annual commencement of the Arkansas Industrial University, April 5, thirteen graduates received the degree of M.D.

To be Mayor of St. Paul.—Dr. Chas. A. Wheaton, of St. Paul, has consented to accept the nomination for Mayor by the Republicans of that city.

Surgeon-General Fulton.—Dr. John F. Fulton was yesterday commissioned Surgeon-General of the Minnesota National Guard to succeed the late Dr. Murphy, April 6.

New Medical Journal.—We have received the initial number

of a new medical monthly published at Rochester, N. Y., and edited by H. Bronson Gee, M.D. It presents a neat appearance and is filled with interesting matter.

A Queen's Thoughts Concerning the Medical Art.—In her little book, called "Pensees," the Queen of Roumania offers the following comparisons between theology and physic:

"It is better to have a physician for a confessor than a priest. You tell the priest that you detest mankind; he answers: 'You are not a Christian.' The physician gives you a dose of rhubarb, and you love your fellow-being. You tell the priest that you are tired of living. He answers: 'Suicide is a crime.' The physician gives you a stimulant, and immediately you feel life supportable."

Smallpox in Illinois.—In Illinois, outside the city of Chicago, there have been eighteen places infected during the period between January 1 and April 18, 1894, with a total of sixty cases and ten deaths. At the latter date there were eight infection centers with eleven cases remaining. In fifteen places the outbreak was limited to the original case or cases; only in the poorhouses of Madison, Warren and Grundy Counties and at Harvey in Cook County, did the disease spread beyond the houses first infected. In all places the rules and regulations of the State Board of Health were promptly enforced and the record reflects credit upon the Board.

In Chicago, up to noon of the 17th, 226 cases were reported for the month of April and the spread of the disease continued unabated. The situation is grave beyond precedent. The pesthouse is overcrowded and newly-discovered cases are retained at their homes until places are made for them by death or recovery. Smallpox corpses awaiting burial are almost daily found by the inspectors, this being the first intimation of the existence of the disease. An inspector of the Tenth Ward reports finding two corpses on the 14th and three on the 15th. Work has been at last begun on an extension of the pesthouse, for which an appropriation of $25,000 has been available for some time. The County Hospital has been again quarantined, there being on the 16th two cases of smallpox and six "suspects" in the building refused admission to the pesthouse until some of its inmates "die or recover." An emergency meeting of the State Board of Health was held in the city on the afternoon of the 17th, at which the Mayor and Health Commissioner were present. Beyond appointing a committee of the Board to inquire of the Governor what funds of the State were available to assist the city in its efforts to suppress the disease no action was taken—the city authorities, while confessedly unable to cope with the situation, refusing to make a direct appeal to the State Board for assistance.

An "East Side" Census in New York City.—The Church Temperance Society has recently made a social census of forty-seven city blocks, the approximate center of which is the intersection of Chrystie and Stanton Streets. The census was taken by eight ladies, who had already had experience in this field. The census-takers were, as a rule, courteously received in their districts, and were enabled to report more or less fully on 90 per cent. of their lists of questions. The population of the section is, in round numbers, 55,000; of which 25,000 souls are of American birth, the remainder being Russian, Polish or German; the real excess of alien Jews over Americans is stated at 5,517. The number of dwellings is 529, of tenements 1,775. Of these latter 180 are of the baneful variety known as "rear tenements." The proportion of the people who dwell in tenements is probably not below 90 per cent. One subdivision of the district, containing 40,000 souls, has 192 saloons, or one saloon to every 200 of the population, inclusive of children, women and men. In another smaller subsection, there is one saloon to every seventy-seven persons. One of the objective points of this movement will be to secure a reduction in the number of saloons, so that there shall be not more than one of these institutions to every 500 of the population.

Regarding the tenement system, the following observations are made in the report:

"The New York tenement house is a necessity begotten of its conditions and surroundings. It is not necessarily bad. It may be built with due regard for light and fresh air. The evils, in our opinion, are the rear tenements; back to back tenements, known as double-deckers; front tenements, badly constructed as to light, drainage or both.

"In all reforms requiring large powers coupled with large expenditures, naturally the municipality is intrusted with the power because it can obtain the necessary capital at the cheapest rate. The present condition of the city, because of the baneful influence of Tammany Hall, precludes the possibility of large purchase, large clearing and the erection of sanitary dwellings thereon. The defeat of Tammany Hall and the installation of an honest, reputable and representative city government is a condition precedent to any real, full and effective dealing with the tenement, rear, front, and back to back."

Hospital Notes.

THE NEW city hospital at Dallas, Texas, will be ready for occupancy May 1, and will be furnished with "all modern improvements."

THE ST. LAWRENCE STATE HOSPITAL, at Ogdensburg, N. Y., will receive over one hundred thousand dollars this year for the following purposes: Grading grounds, $20,000; cold storage, $4,000; two cottages for disturbed patients, $24,740; cottage for convalescents, $44,168; propagating house, $3,150; vegetable and sub-cellar, $4,000; steam boiler, $2,500; piping and motors for laundry, $935.

THE PUBLIC SERVICE.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from April 7, 1894, to April 13, 1894.

Capt. OGDEN RAFFERTY, Asst. Surgeon, is hereby granted leave of absence for one month, with permission to apply for an extension until the 20th of May next.

The following named officers of the Medical Department will report in person, for temporary duty until further orders, as follows: First Lieut. CHARLES WILLCOX, Asst. Surgeon, to the commanding officer, Angel Island, Cal.; First Lieut. CHARLES E. B. FLAGG, Asst. Surgeon, to the commanding officer, Alcatraz Island, Cal.

LETTERS RECEIVED.

(A) Armitage, J. E., (2) National Home, Wis.

(B) Bates & Morse Adv. Agency, New York, N. Y.; Bell, Guido, (2) Indianapolis, Ind.; Brooke, G. W., Ellsworth, Ohio.

(C) Cochran, Jerome, Montgomery, Ala.; Comegys, C. G., Cincinnati, Ohio; Collyer, Samuel, Tacoma, Wash.

(E) Eastman, Joseph, Indianapolis, Ind.; Elder, Samuel & Co., Baltimore, Md.

(F) Farrington, J. M., Binghamton, N. Y.

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The Journal of the

American Medical Association

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ORIGINAL ARTICLES.

TRADITIONAL TREATMENT OF LEPROSY IN JAPAN AND CHINA.

BY ALBERT S. ASHMEAD, M.D.
NEW YORK.

"Kattai no kasa urami."—urayami—(the leper's envy of a syphilitic.)—*Japanese Proverb.*

There is a Japanese treatise on syphilis and leprosy published by Katakara Genshiu, Tokio, 1781, on which I wish to make a few observations. The preface of this book also alludes to the oft-quoted anecdote which seems to imply that leprosy existed at the time of Confucius. It is said that one of the great man's disciples being ill,'his master went to see him, but staid outside and contented himself with shaking hands through the window casement, expressing his regret that his friend should have "that hateful disease." It is generally supposed that he meant leprosy. The preface of our book approves the cautious conduct of the master. "For, it is said, in later times special hospitals and houses were erected for lepers, so that their disease might not be mixed with other maladies."

(The work on syphilis has a preface of its own in which it is stated that this disease first received its special name in the early part of the Yuen dynasty, (A.D. 1260–1368). Katakara Genshiu says it is not mentioned as yo-bai-so (syphilis) in the most ancient Chinese medical books; the "So-mon-nai-kei" a Chinese medical book the most ancient of all), the "Rei-shin-sho," (Chinese book of medical marvels), the "Kinki-sho-kan-ron" (Golden Chest, A.D. 200), the "Shin-no-kei" (Method of Schoochuke, Chinese Hippocrates),[1] the "Byo-gen-ron" (Theory of Disease), the "In-sho-ku," (Diseases of Penis) and the "In-so" (Sores of Penis).

Syphilis appeared first in the swamps of Southern China; in Japan it made its first appearance in the province of Hijen. It was not so widespread in those remote times, as it is in our days. It is more generally cured now than formerly. It seems that five out of ten people are syphilitic in China as well as in Japan.

The author understands syphilis perfectly; its causes, its transference by inoculation, its transmission to the offspring, the danger of infection through cutaneous disease, especially itch. The author in describing secondary and tertiary syphilis confounds evidently mercurial salivation with the latter; for he speaks of the putrefaction of the gums, pains in the tongue, cracks on the side of the tongue, a continuous flow of saliva, bell-like sounds in the ears, etc. Describing the various forms of syphilis, he declares that, in spite of the great variety of appearances, the poison in all cases is identical. He knows the danger of transference from the mouth. He mentions also the late manifestations of syphilis.

In the preface to the volume on leprosy, we read that a method of cure had been adopted in the time of the Sung and Yuen dynasties (A.D. 960–1278 and A.D. 1260–1368). As to his own method, the author assures us that it will cure the patient in the space of three months. This method of cure of the author consists in driving out noxious insects by medicines, and eliminating bad blood by moxæ and acupuncture. He tried his method on his own showing with excellent results in various provinces (Yamashiro, Settsu, Isé, Kii).

Among the causes of leprosy he mentions putrefaction of the blood by heat. He refers to some authors as having placed the origin of leprosy in the veins afflicted with catarrh. The writer, and all the authorities which he quotes, consider leprosy as related in some obscure way with cold; it may owe its origin to sleeping in the open air, or in swampy places, being exposed to the vitiated air emanating from water closets. Eating fat aliments, excessive sexual intercourse, neglecting to clear out the bad blood after childbirth, are also incriminated. But in all these cases, there has been, for several years before the outbreak, an insect in the body, whose presence is indispensable to the operation of the exciting cause; possibly he means a bacillus.

People of beautiful white complexion are very prone to contract the disease; however caused, the disease yields always to the same treatment.

The author cautions all doctors not to confound certain forms of alcoholism with leprosy; these forms of alcoholism are unknown to us.

Some of the Chinese names of leprosy embody the belief in an origin of the disease through cold; great cold wind, great paralyzing cold wind, great wind eruption, hateful great wind, great skin catarrh, influencing or favoring catarrh (influenza), unfavorable catarrh, penetrating catarrh, leaking catarrh, wet catarrh, incurable catarrh, filth catarrh.

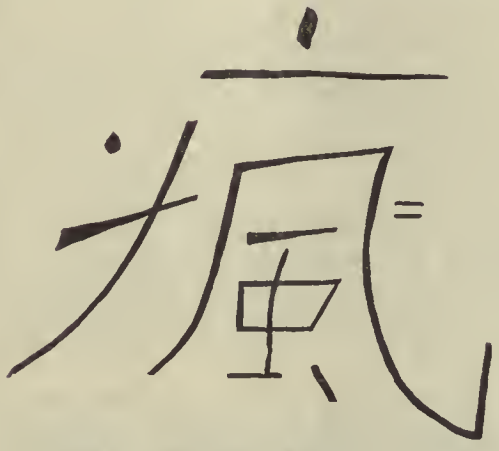
Other denominations emphasize the influence of humidity: Swamp-filth poisoning, wood, or forest-filth poisoning,[2] fire-filth poisoning,[2] metal filth-poisoning,[2] earth-filth poisoning,[2] water-filth poisoning,[2] cricket or swamp-insect poisoning, rain-filth poisoning. There are some other names: Numbness poisoning, human insect poisoning, black disease poisoning. It is also called Confucius disciple (Hakugin) disease, from the student before mentioned; mutilating disease, insect-mutilating disease, bursting melon disease are other names. The most commonly used is the great wind catarrh disease.

Some cases are absolutely incurable; it is useless to attempt to cure a patient whose eyes have a yellow hue, whose finger nails have no white crescents at the

[1] Author of the Shookauron (Treatise on feverish diseases) composed 350 years before Christ.

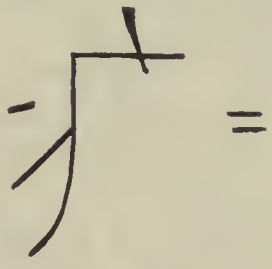
[2] Referring to the five elements.

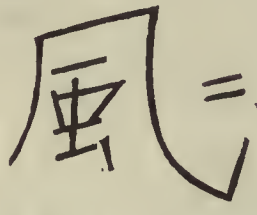
bottom, whose hands are wholly anesthetic, whose palm or sole bleeds, whose eyeballs are ulcerated, whose penis is putrified, whose hands or feet are clawed, whose skin is spotted with black, whose fingers have melted off, leaving frog-foot shaped ends, whose body hairs fall off, whose nose is gone, whose bones are poisoned and putrified, drunkards and debauchees, a too frequent bather, men who contract the disease after their fortieth year, people with very emaciated bodies.



Chinese and Japanese character for leprosy.

This is a combination of the

character  disease,

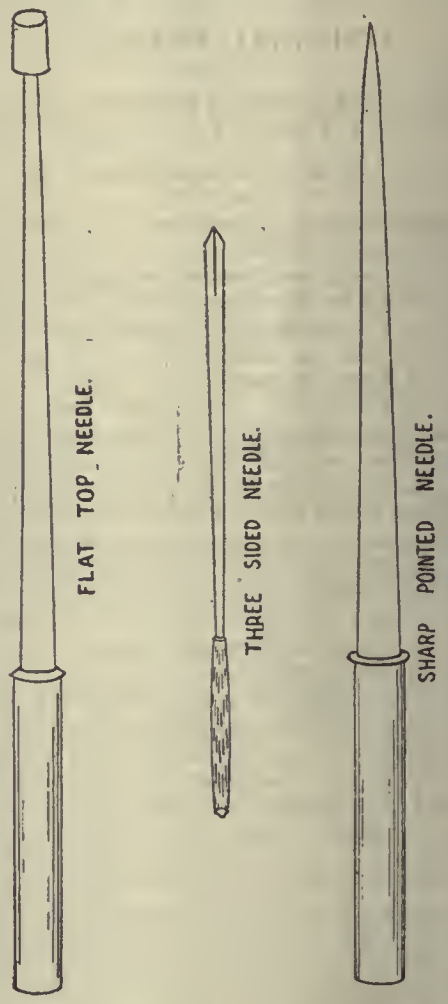
and character  wind or catarrh.

Treatment.—The disease is to be treated in accordance with the condition of the temperature, and the degree of the disease, whether severe or mild. Apply moxæ below the eleventh vertebra three times a day, and various Chinese medicines, of which we know nothing.

In mild cases draw the corrupt blood by acupuncture. The needles must be used within the circumference of the spots; in severe cases they are to be heated, and applied red hot inside the margins of the sores. But, unfortunately the manner of using these hot needles as Dr. Chan used them is, in a measure lost; the most effective part of it, at least, that is the shape of the needles. The needles used by the writer are, says he, different from the ancient sort, and he uses thirteen in number, instead of the prescribed number, whatever that might have been. The length of the needle is seven and one-half inches (Japanese inch is ten inches to the foot). The end of the needle is sharp and round, the handle is hexagonal in shape, three inches long. One of the thirteen needles is flat-headed. They are made of ordinary iron which in Japan is magnetic.

The manner of application is as follows:

Let the patient sit down naked, in a darkened room; burn camphor as a light, and examine the entire surface of the body. In this way the poison under the skin, may be seen plainly by the physician. Circumscribed blood spots of various shapes, round and square, oval and irregular will appear beneath the skin. If they are scarlet, the poison is not severe;



if dark purple, it is of great strength. The physician marks with ink the circumferences of these spots as they are seen by the reflected camphor light. The spots are mostly on the face, hands, feet and neck; very few of them are found on the chest and abdomen. Open the windows and puncture the spots with the red hot needles, the latter heated in a charcoal fire, are used one by one within the marked places. Generally there is no bleeding, nor is there any pain felt; if there is bleeding and pain the spot operated on is not leprous. The needles may be introduced even to the depth of an inch, without causing any pain. After these operations, the patient's body shows high temperature, his face reddens, his mouth is dry, and there is headache and intense thirst. Give him warm water to drink, and apply the hot flat-top needle to his bald vertex with a quick touch; thereupon he feels relief.

The needles are used three days in succession; on the second day, the acupunctures are made in the intervals between the first day punctures, when, how-

over, the needle can not penetrate deep without causing pain; on the third day again, puncture in the existing intervals.

There is a test for leprosy which the writer makes before he operates. He pulls out some hairs, and if they yield easily, the patient is leprous. After the operation the hair, in this case, is not so easily pulled out, which the author considers as a proof that already the blood has acquired additional strength.

At the first outbreak of the disease, the sufferer loses the skin sensibility, and feels an itching sensation like insects crawling under the skin; coldness in the finger-tips, cold and hot flashes over the body, severe pains in hands and feet, pinching pains in thighs, formications all over the body. If the skin is scratched there forms a scab. The outside of hands and feet turn as cold as ice, while scurf develops on the skin; loss of sensibility in little finger and little toe; swellings appear on trunk and hands. Under these circumstances the author advises the burning camphor skin-illumination, the use of three-cornered needles, and the application of his own special Chinese medicaments. The cure may be expected in forty or fifty days.

In a severe case of leprosy, the body becomes tuberculated, the color of the skin turns into purple; eruptions of egg or cannon-ball size appear, and their places swell near a fire. After a few days, the top of the eruptions break and yellow water oozes out; it looks very much like a burn. Now the eyebrows and lashes fall out, and there is a strange flash in the eyes. The skin becomes like the bark of a tree, the fingers bend, the expression of the face loses all brilliancy and turns ashy white; swellings and pains in bones; voice becomes rasping (leper's croak); ringing in the ears; total anesthesia. The eruption may disappear in one place, and reappear in another. No pain felt when hairs are pulled out. In these cases the author is confident that by using his method, and applying the needles for three days, a cure will be achieved. During the treatment a special diet is prescribed.

A leper must be precluded from sexual intercourse, and deprived of fatty food; these two rules are *sine qua non*.

Warm springs, says the author, have a most deleterious effect upon lepers, because they elicit the deep seated poison and spread it over the skin. Some persons appear to become leprous in consequence of alcoholism; but this is only an appearance. A mild case of leprosy might be mistaken for syphilis. Therefore be careful of diagnosis before using the needles. The season most favorable for acupuncture is from the beginning of summer to the first days of autumn, because the chances of catching cold are less.

The author mentions some facts which have seemed to me worthy of reproduction:

In Nara near Kioto, there is a leper village which he has visited (the author made a visit to it in 1777 A.D.), inhabited by many hundred families. He quotes a Chinese doctor who gave it as his opinion that leprosy was transmitted in the sexual act, by the passage of an insect at the time of coition, either from the male to the female body, or *viee versa*;[3] the Chinese physician recommends, in the intercourse between a leper and a healthy person, the interposition of a lotus leaf. He knows, in Southern China, of the existence of a leper village, built by the Government, whose population have to report, under penalties, the appearance of all new cases of the disease. He speaks of leper hospitals, which were built "in times of yore," in order to isolate the lepers. Most of the lepers in China seem to dwell in the wet districts which extend at the foot of the South Mountains. In Japan, not only the southern parts, but all the provinces, are infected. The cities are comparatively free from leprosy, though much afflicted with syphilis. These two antagonistic forces never occupy the same spots; it has been so in Japan for eight hundred to fifteen hundred years. In recent times syphilis became more prevalent in the country, and forthwith leprosy decreased.

After expatiating on these facts the author thinks fit to return to the subject of the cure of leprosy. He mentions now another treatment: The use of turpentine or boiled pinewood. The author thinks that such patients as are able to eschew fat and live cleanly have a good chance to be cured by this method. The remedy was known and used two thousand years ago (quotes a leper anecdote from a Chinese book of philosophical doctrine, "Ho-bo-kushi," written by Kakko).[4] It is mentioned in the "Byo-gen-ron," the Chinese theory of diseases. We find it also in the "Thousand Golden Remedies," the "Sen-kin-ho," written A.D. 618–90, date of book A.D. 640). The method is described in the Chinese "Diet Cure of Diseases," as follows: "Take some pure turpentine, boil it in a clean pan with spring- or rain-water; keep stirring it; when it becomes muddy and bitter pour into cold water. Boil repeatedly until the liquid turns white and loses its bitterness. Dry in the shade; grind into powder, and make it fine. Use it thus: Make a soft boiled rice, mix the turpentine thoroughly with it, and eat freely of it. Eat it until it purges. If the patient feels thirsty let him drink nothing but pure water mixed with the turpentine powder. After ten days' use, vomiting and purgation come on; they are favorable symptoms. Resume the treatment from time to time. Mushrooms, and any plant growing in swampy places must be excluded from the patient's diet, not only during treatment, but forever after."

The pinewood treatment is also referred to in the Chinese history of the Jo River country ("Jo-sui-yen-dan").

Acupuncture in leprosy was certainly used in China under the Ming dynasty, (1368–1644 A.D.). It is mentioned in the "Dan-san" (collection of stories by To-fok).

PERSONAL EXPERIENCES OF THE AUTHOR.

1. A farmer of Aomi, in the province of Sagami; age 30; since about a year ago lost the sensibility of his little finger, and the same became crooked; legs became also anesthetic; boring pains at intervals. Case diagnosed as leprosy. Patient taken into a dark room; camphor illumination; congealed blood appears plainly under the skin. Three-sided acupuncture needles stabbed into several eruption places, without causing pain. Purging during fifteen days, and then again for three days. He passed five insects.

[3] Based, very probably, on the fact that leprosy occurs only at or after the age of puberty.

[4] Kakko wrote A.D. 330, a book entitled, "Chin-yo-ho," (prescriptions behind the elbow). The true meaning of this title is as follows: In mythological times, sages carried charms around the elbows to ward off evil spirits. In theological books, emiuent Buddhist clergymen are referred to as priests who have charms around the elbow. It must be observed that the elbow part of the sleeve is the Japanese pocket.

Medicaments ingested during twenty days; re-application of the three-sided needles. A cure was effected.

2. A student, 22 years old, province of Satsuma, contracted three years previously a gonorrhea. One year after its cure the little finger of his right hand became anesthetic; spots appeared on hands and feet and on the face. At last all the fingers of his right hand became crooked. His case was incurable because treatment had not been demanded in time; his hand remained crooked, but the acupunctures could still prevent the falling off of the nose and the droppings of his fingers.

3. A rich man's cousin, aged 25, of Nishioka village, a province of Yamishiro, had been a leper for five years. Half of his eyebrows had fallen; his hands and feet were crooked; spots on face, feet and hands. Loss of feeling in both legs. The author visited this case in the leper village, ten miles from Kioto. He was atrophied, and the white crescents of the nails were absent; he had the usual flashing eyes; the fingers were not crooked much. Although, by the author's rule, the case was incurable, as the patient had not subjected himself to the warm springs treatment, and as he was young and had what the proverb calls, an iron-like heart, the author examined him by camphor light, outlined his spots and applied the needles for three days. He was then purged and passed fourteen worms a foot long. On the same day the fingers became more movable. Spots now appeared on his chest and acupuncture was there applied. For fifteen days after this treatment the wounds discharged pus, then granulated by degrees and healed. The fingers became quite free; the eyebrows and moustache grew again, and he was discharged cured.

4. A soldier of Kumamoto, age 40. Eruptions on upper parts of cheeks, flat and scaly, letting escape a yellow fluid, and spreading gradually all over the face. In spring and summer the fluid flows abundantly; it dries up in winter and turns flaky. These conditions had prevailed for four years. He was a leper. He was cured in sixty days.

5. A curio-dealer, age 38; a drunkard and fish-glutton; very fat, with rosaceous nose. A year before treatment scaly spots had appeared on his face in various shapes, like ringworms. He had lost his eyebrows. Case diagnosed as *wet and heat tropho neuritis*. Under acupuncture treatment he recovered in thirty days.

6. A little boy, son of a pawnbroker, age 8, had an eruption on the back of the neck, four or five spots of the size of a peach-stone. Gradually these spread over the whole body; scaly desquamation; eyebrows and hair of head fell out about one-half; left hand crooked; appetite lost. Case diagnosed as inherited syphilis. In forty days he was cured.

7. Man aged 35; had syphilis three years before. Offensive gland sores in axillæ; eruptions on face and other parts of the body; entire skin affected; eyebrows and moustache entirely gone. Diagnosed as syphilis. After some months, the eyebrows grew, the symptoms disappeared and he was discharged.

8. A man, brothel-keeper, aged 27. When he was a boy, a severe itching was suddenly felt in the little finger of the left hand; he bit it off, and the doctor who was sent for applied a moxa to the wound and stopped the bleeding. The wound healed, but sometime afterwards an eruption appeared on the small toe of the right foot, and the outer edge of both feet became anesthetic. Another eruption on the elbow; comes and goes. He understood now that he was a leper. After many years he became emaciated; his left fingers crook; the nail crescents had disappeared; the soles of the feet ulcerated. For eighteen years these miseries continued. The author thinking him incurable declined to treat him, but finally consented to use the acupuncture, when the patient suddenly died.

Katakara Genshiu mentions another doctor who uses acupuncture, combined with cupping and leeching, Dr. Yoshio, of Nagasaki. It is supposed by our author that this practitioner learned the latter additions from the Dutch barbarians. After puncturing with the needles he pours wine into the sores, or uses a leech to suck the blood. Genshiu mentions that cupping and leeching is also used in China.

The book closes with some curious remarks on a certain brilliant complexion which indicates the presence of yet unmanifested leper poison in the body.

LONGEVITY.

Read before the Tennessee State Medical Society, April 10, 1894.

BY D. E. NELSON, M.D.
CHATTANOOGA, TENN.

The subject of the paper I bring before you is longevity; a subject that has been a fruitful and profoundly interesting theme of discussion, not only in our profession, but among thinkers and students in every department of knowledge and in every age. Even the comparatively unlettered masses of mankind have not permitted it to pass their observation without their quota of crude, confusing and altogether irreconcilable opinions and conjectures. There seems to be a peculiar fascination attaching to it, that instinctively challenges attention and stimulates mental activity until our faculties are not satisfied without, at least, a voyage of discovery. Like everything in existence, the deeper it is immersed in mystery, the greater our curiosity to solve it, or, at least, to make the effort, and to satisfy ourselves whether or not it may be a new departure in the course of human events, or a piece of charlatanry utterly unworthy the valuable time and precious thought spent upon it. If it is governed by any specific law, that law is as yet undiscovered. If it is subject to any particular regimen, that also, remains hidden.

Is it not surprising that, notwithstanding all that has been written on the subject of longevity, so little is really known of the causes and conditions of long life? Statistics show that a majority of those living to be more than one hundred years old are women. Sir G. C. Lewis, who carefully investigated this subject positively denied that any *man* ever reached a hundred years, though he was nearly convinced that there were in his day some authentic cases of *female* centenarianism. His argument for his position, was that since the Christian era, no person of royal or noble birth was ever alleged to have reached that magic limit. The lives of the centenarians swell or diminish in length as we advance or recede from prehistoric times. If it be argued that men in high official positions are exposed to greater dangers and more exhausting labors than other men; that the cares of state, the fierce contentions of politics, the brainwork incident to tangled affairs cut short their

days, it may be urged on the other hand, that the higher the station the better the medical attendance, the food, air, clothing and all other conditions on which health and longevity are supposed to depend. It must be admitted that the higher a man's rank, the greater is the chance of accuracy in respect to dates; and that if in all the cases which can be easily attested, centenarianism has been found to be a myth, then there is a strong presumption against the obscure centenarians who grow up in places where the system of registration is unknown, and where skepticism is less common than credulity and love for the marvelous. The presumption, however, is liable to be rebutted by facts; and we think they exist in sufficient abundance, not only to overthrow it, but to prove centenarianism beyond a doubt. Flourens was of the opinion that thirty years is the age of man's maturity and that it marks one-third of his life.

We are justified in saying man has a normal life of ninety to one hundred years, and that by reason of strength he may reach one hundred and ten years. The Biblical expression: "His days shall be one hundred and twenty years," has been thought to mean that this should be the extreme duration of life; others think it meant the average. Judging of the subsequent facts the latter appears to be the correct interpretation. Abraham lived one hundred and sixty-five years. Joshua one hundred and ten. An inscription on an Egyptian monument states the extreme duration of life in that country to be one hundred and ten years. This was the age of Joseph. In the time of David a man of eighty was considered very old. The great prophet king himself, reached only seventy-five years. In the ninetieth Psalm, tenth verse, it is said: "The days of our years are three-score years and ten, and if by reason of strength they be four-score years, yet is their strength labor and sorrow, for it is soon cut off and we fly away."

Seventy in the Middle Ages, was considered a great age, which few attained, but it is a fact that in modern times the average is greatly increased. But if normal longevity is thus established what does science teach as to possible longevity? To what period may exceptional lives extend? May not individuals be endowed with matter of life so largely and have so slight expenditure, that life may be extended far beyond the limits now fixed by various writers? Is one hundred years the extreme limit of human life, and may we not, under favoring conditions, extend life to variable periods much beyond one hundred years? In the patriarchal age man led a natural life. He lived principally out of doors and took moderate exercise. The tax upon his nervous system was moderate, his food was simple and nourishing, and his digestion consequently good. Accident and old age were then the principal causes of death. At the age of seventy-five, Abraham migrated with all of his possessions. Isaac was born when his father was one hundred and his mother ninety years of age. Abraham was over one hundred and twenty years when he bore the great trial of his faith. Jacob lived one hundred and forty-seven years, notwithstanding his troubles.

To go back to the Romans, Pliny states from the record of a census taken during the reign of Vespasian that there were living in the year 76 in Italy, in a certain district, one hundred and twenty-four persons who had attained the age of one hundred years and upward. Haller, long ago declared that over eleven hundred persons had been known to have lived to various ages, between one hundred and one hundred and sixty-nine years.

Thomas Bailey's book, "Records of Longevity," published in 1857, contains the names of about four thousand centenarians, and Dr. Van Owen has collected notices of six thousand, two hundred and two. Of the latter we have the names, country, conditions and date of ninety-nine, who reached the age of one hundred and thirty; of thirty-seven, who lived to be one hundred and forty; of eleven who reached one hundred and fifty; of seventeen who exceeded a century and a half. Lord Bacon says that the Countess of Desmond lived one hundred and forty years and cut three sets of teeth. Allen's "American Biographical Dictionary" gives the names of more than two thousand centenarians; among them are Abraham Bogart, who died in Tennessee in 1833 at the age of one hundred and eighteen, and Francis Age who died in Pennsylvania in 1767, aged one hundred and thirty-four. Judge Basil Hamilton, of Kalamazoo, Mich., who died a few years ago aged one hundred and three, was one of a family of twenty-three children, and he himself, had seventeen of his own. Dr. Archer Atkinson in the *Virginia Medical Monthly* for February, 1894, in an article on longevity, says that Lucy Kennon, of Kentucky, was still living in 1876 and aged one hundred and twenty-three years; that Rosetta Washington, of Louisville, Ky., aged one hundred and twenty-one years was still living in 1888. Stephen Goodale, of York, Maine, died ten years ago aged one hundred and eighteen. Antoine Save, a native of Normandy, lived to be one hundred and thirty years. Joseph Crele, of Wisconsin, died aged one hundred and forty years. Samuel Stocker, born near Clarksville, Tenn., February, 1783, is now living in good health at Toledo, Ohio. George Foster, colored, died in Chattanooga April 17, 1892, aged one hundred and twelve years. Catherine Patton, colored, is now living in New York city, aged one hundred and eight, and has two daughters living, aged respectively seventy-four and seventy years.

Without considering further the arguments brought forward to establish normal and possible longevity, we may state it as a truth accepted by scientific men that man can, to a great extent, control both. The above cases taken together, however incredible some of them may be, seem conclusive. Granting that many of them are open to suspicion, yet after the utmost allowance has been made for errors, misstatements, and wilful exaggerations, enough still remains to establish the truth of ultra-longevity beyond all rational doubt. It is so generally admitted that the duration of life has increased during the present century as to call for no proof. But what are the conditions of long life, so far as can be gathered from the known cases? Happy and calm will be the sleep of those, who on their pillow, can muse on the consolations of the Gospel, and resign themselves implicitly and without wavering into the keeping of a Heavenly Protector and Father. Arbuthnot said: "The instances of longevity are chiefly among the abstemious;" "More men dig their graves with their teeth than with the spade."

Are agricultural districts more favorable than manufacturing, the fresh open country than the crowded

city, mild climates than those whose skies are perpetually scowling? Statistics, well authenticated reports on sickness and mortality say rural districts have, at most, the advantage of one in two hundred deaths above city districts and one in five hundred above the town. Against the overcrowding, the bad air, excitement, and the liability to accident in the cities, are set the better water, the greater variety of food, the better knowledge of the laws of health, the more accessible and skilful medical aid, so that the advantages and disadvantages are nearly balanced. The dweller by the sea naturally selects the mountain for his diversion in the summer, and the mountaineer in turn goes to the seacoast and comes home again in the autumn as to a haven of rest; or if he must labor it is with something like glee that he rejoins his work. After all, we are constrained to say: "There is no place like home." Hot climates have no superiority over cold; China is no more unhealthy than Norway, Iceland or Greenland. Is exercise a vital condition of longevity? Some have said not, in view of the fact that a vicar, cited by the London *Quarterly Review*, Rev. Wm. Davies, reached one hundred and five, though his only exercise for the last thirty-five years was to slip one foot before the other from room to room. Men have lived a hundred years and upward, who only taxed their physical powers to walk one hundred yards a day from house to office and back. Some of the strongest constitutions have been possessed by old soakers. Daniel Bull McCarthy, of Ireland, who drank freely of undiluted rum and brandy during the last seventy years of his life, died in 1752, aged one hundred and eleven. George Kirton, of Yorkshire, a hard drinker, lived to be one hundred and twenty years old. But these are only exceptional cases.

Is a proper diet a *sine qua non* of longevity? All writers on health denounce newly made bread and especially hot bread, and not a few denounce tea and coffee, but, can not each of us call to mind the names of very old people who have been for the greater portions of their lives free users of the same? Shall we declare in favor of frequent bathing or personal cleanliness? Animals get rid of the outer layer of skin in some way. In some species, certain reptiles for example, the outer skin is shed entire at certain seasons. Birds cast their feathers and fish their scales; and at each casting off of his kind, the vital processes are afterwards carried on with more energy, because the drains and sluice-ways of the surface are not blocked up at their mouths by broken down epidermis; so in man, the skin is removed; only the process in a state of health is gradual and less startling in its visible signs. What shall we say of "Lady" Lewson, a London widow, who never washed her rooms, nor bathed, and declared that people who bathed were constantly taking cold; but she habitually smeared her face and neck with hog's lard. It is said of the Icelanders, that though they are very uncleanly and suffer much from skin diseases, especially leprosy, their longevity is greater than that of the nations of Europe.

The one great question of sanitary science is to secure to each individual, death from old age. On every hand we witness the prodigal waste of human life. Of the children born, what a vast percentage never see the anniversary of their birth! What a large percentage die under five years of age! And how few, comparatively, reach the age of ten! At twenty the generation has dwindled to an insignificant minority, and at thirty-three to forty-five disappears altogether. The science of life reveals to us the stupendous fact that man is born to health and longevity and that disease is abnormal and death, except from old age, is accidental, and that both are largely controllable by human agencies. We find that physiology teaches that in every tissue and in the corporate whole, there is inherent death.

It is evident, therefore, that the question of longevity is to be determined by estimating, correctly, vital endowment and vital expenditure. In man, the tendency to individuation is strongest and the degree of evolution is the highest. Man being omnivorous, can secure his food from many sources. He can sustain vigorous health on the products of the soil, or the river, or the forest. Nor need he expend his strength unavailingly in search of food, for by his ingenuity he can devise means of securing it with but slight effort. By suitable protection, man may and does husband his native resources and reduce to a minimum the expenditure of his vital forces. Consider also, by what skilful appliances he continues to repair the wastes and inroads of decay or accident upon his bodily organs and functions. It is a fact that the average length of human life has gradually increased in many civilized communities.

In 1665, in London, one twenty-third of the people of that city died, but now the rate of mortality has been reduced to one forty-fifth annually. Is this not proof of man's advance in civilization, which enables him to live with less expenditure of vital force, which leads him to see his own highest welfare in the common effort to promote the advance of sanitary science?

Mr. Mathews says that health is not a condition of long life, and that long life is no more dependent upon health than upon great muscularity. He cites as proof that the Tom Hyers and Heenans, great prize fighters, and heavy weight lifters, who could fell an ox with their fists, were always ailing and rarely lived to be more than fifty or sixty years old; and that Dr. Winship, of Boston, who could lift three thousand pounds, died aged forty-two. The celebrated Galen had a weak and delicate constitution, yet by strict temperance and evenness of temper, lived one hundred and forty years. It is said that his rule in eating was to rise from the table before his appetite was satisfied. Dr. Southy, in the London *Lancet*, ten years ago, said that the three oldest people he ever knew were women, who reached respectively, eighty-nine, ninety-eight, and one hundred years, and were nearly all their lives of infirm health. And thus I might go on and cite numerous other such cases, but this is enough to bring within the scope of this paper.

In spite of all these facts, it is hard to believe that virtuous habits, abstemiousness, exercise and cleanliness do not conduce to longevity. But the one thing that outweighs all other favorable circumstances is what is called, "a certain bodily and mental predisposition to longevity." Sir Thomas Brown wrote: "There are persons who are prefigured unto a long duration." Some persons are born with a genius for long life, but it is a gift which can be cultivated and like any other it may be destroyed. Those who have this inherited gift will commonly reach old age, though they trample on the laws of health; while those who have it not will die comparatively young

in spite of the strictest precaution against disease. How is it that in a race of beings having such a power over its destiny and striving by every means to obtain long life, but three in every thousand dying, reach their pre-ordained longevity? Within one's own observation he sees a vast array of causes abridging life. In his own makeup he sees sickness on a perpetual warfare with his vital forces.

According to the last United States census, nervous and digestive troubles cause nearly one-third of the deaths. Every point of man's system is subject to attack from disease. The earth and air teem with the germs of disease; we eat them and we breathe them. It is believed by both civilized and savage nations that disease is the expression of the Almighty's disapprobation of man's immoral conduct, and granting this to be true, may we not add that it is the penalty inflicted for the disregard of that Biblical precept: "Cleanliness is akin to godliness?" The most destructive diseases are of man's own creation. The principal condition which shortens life is, first, and above all others, the expenditure of vital force, and it is scarcely necessary for me to mention the various ways by which the vital force may be expended. At maturity the passions ripen into full activity and have their full play, and if not held under control they rapidly exhaust the vital strength. Man may yield to all his passions and appetites and perish at maturity or be decrepit at thirty. He may so order his life as to fully and healthfully develop his passions and appetites so that they shall culminate in a prolonged and vigorous old age, and thus leave death as a subject of accident. It is an axiom of enlightened statesmanship, that the great want of any country is, and ever will be, a healthy, robust and long-lived yeomanry. Public health means public wealth, honesty and morality. Our Government can in no way better promote the interests of the people than by diffusing knowledge on these points.

One of the most sensible sayings on the art of longevity that has fallen under my notice, so far as longevity can be considered attainable, was that given by an Italian in his one hundred and sixteenth year. Being asked the secret of his living so long, he replied:

"When hungry, of the best I eat,
And dry I keep my feet;
I screen my head from sun and rain,
And let few cares perplex my brain."

In these lines, especially the last, we have the quintessence of all the advice that has been or can be given on the subject. The deadliest foe to longevity is excitement. "To live long," said Cicero, "is to live slowly."

The careful stock-raiser shows his faith in heredity by strict examination of the pedigree; and why so well demonstrated a great physiologic truth escapes notice when a human being is concerned instead of a horse, is in the nature of a conundrum to all thoughtful minds. He who lives extensively, who avoids all stimulants, takes light and agreeable exercise, indulges no exhausting passions, feeds his mind and heart with no exciting material, has no debilitating pleasures, "keeps his accounts with God and man daily squared up," is sure if he has a good organism, to spin out his life, barring accidents, to the longest possible limit.

The poet, William Cullen Bryant, when asked the secret of his health and vigor at upwards of eighty, answered: "It is all summed up in one word, *moderation*." The ancients laid much stress on gastronomy, as many idioms in all languages attest. "Heaven sends the food, but the devil sends the cook," is an old saw that is more forcible than elegant. How many a young man squanders on a holiday or an evening's entertainment an amount of nervous energy which he will bitterly feel the want of when he is fifty. It is true that overwork of the eye at fourteen may necessitate spectacles at forty instead of at sixty. Even warm affections are prejudicial; they subject the owner to constant anxiety, and are as unnerving as the excitement produced by politics or gambling. Nothing is more exhausting than anxiety for a sick wife or child, or nursing a friend through a long sickness, unless you can truthfully say that you take no interest in the result. When a "fine old man" was mentioned in Swift's presence, he exclaimed angrily: "There's no such thing; if his head or heart had been all right they would have worn him out long ago." Wadsworth at eighty, complained:

"Oh, but the good die first
And we whose hearts are dry as dust,
Burn to the socket."

Our fine enthusiasms, if they rise into intensity, are costly and lessen the number of moments we have to live. Some years ago a gentleman in England set about ascertaining the causes of the premature deaths of his acquaintances who had been cut off within twelve years. Of forty individuals, he found that twenty had died from excessive mental labor or excitement, and twelve of these were not intellectual laborers, but men of the world. Sydenham tells us that one of the severest fits of gout he ever suffered from, arose from great mental labor, undergone in composing his treatise on that disease.

Providence has appointed the succession of labor and rest by the alternation of day and night, yet how many violate this beneficent law by turning night into day and day into night. They sleep while the sun is shedding his life-giving beams and work amid the deadly influences of the night. Many do not toil at their callings in the night-time, yet imagine that they do a full day's work and afterwards, with impunity, spend half of the night in charitable labor, or in the pursuit of pleasure or knowledge. But nature can not be so cheated. Occasionally she lets an offender escape for forty or fifty years, but she is evermore "shadowing" him and hauling him up at last, inflicts her penalty just when and where he least expects it. It should be remembered that one can walk farther than he can run.

While all excess is injurious, it must not be inferred that hard brain-work apart from other causes tends to shorten life. Mental labor, apart from grief and fears, from forced or voluntary stinting of the body's needed supply of exercise, food or sleep and the mind's supply of social intercourse, rather prolongs life than cuts it short. Even overwork of the brain is probably far less injurious than underwork. Nine-tenths of the students and professional men who are supposed to break down from intense toil, wear themselves out, not by repletion of study, but by a vicious misapplication of their moral, physical or intellectual forces.

Lord Brougham lived eighty-nine years. Lord Lyndhurst wore out at ninety-one. Epimenides, the seventh of the wise men, is said to have lived to one

hundred and eighty-four. Hippocrates reached ninety-nine, Pythagoras reached eighty, and was murdered. Dr. Franklin was eighty-four. Montgomery, the poet, lived to be eighty-two. Sydney Smith lived to seventy-six and Sir Isaac Newton to eighty-five. The Right Hon. William E. Gladstone, who retired from the Premiership of England only a short time ago, was last December, eighty-four years old. Dr. Beard, of New York, in an able paper on the "Longevity of Brainworkers," has proven beyond even the shadow of a doubt that the world's hardest workers, so far from being short-lived, show a very high average of life; a far higher average than the world's drones, and those who had added nothing to its accumulated capital of happiness, knowledge, goodness and truth. It is an established fact that not a few of the long-livers might materially lengthen their days by taking more exercise and sleep, and by economizing more carefully the expenditure of intellectual and moral energy.

It is known by every scholar that mental application is one of the most effective means of relieving bodily pain, and that it is especially fitted to soothe the ruffled spirit and to mitigate the asperity of corroding anxiety and care. Bacon, in his "History of Life and Death," is emphatic in declaring the religious and literary to be among the forms of life most conducive to longevity. "There are," says he, "in religious life, leisure, admiration and contemplation of heavenly things, joys not sensual, noble hopes, wholesome fears, sweet sorrows, continual renovations by observances, penances and expiations, all of which are very powerful to the prolongation of life." There is a popular notion, which has long been deeply rooted, that precocity of intellect is unfavorable to longevity. It has been shown conclusively, that as a rule, a brain of exceptional force is united to a constitution of exceptionally good fiber, and that precocity, so far from being premonitory of early decay and death, is almost a mark of vast undeveloped abilities, and of a prolonged existence crowded with triumphant usefulness.

Three of the most precocious geniuses of their day were Bishop Thirlwall, Lord Macaulay and DeQuincy, yet they lived to the ages respectively of seventy-eight, fifty-nine and seventy-four. Of all the qualities of mind that conduce to longevity, none are more vitally essential than contentment, cheerfulness and hope. Worry kills more men than the most exacting work, whether physical or mental. Legitimate work develops force, while worry checks its development and wastes what already exists. The physician should be engaged to protect the household and individuals from the assaults of disease, to detect and meet the first and very slightest indications of disorder; and thus, we shall certainly see life prolonged.

There is no doubt that long life, if it be virtuously and happily spent, is a blessing most earnestly to be coveted. The mere lapse of years, however, is not life; "knowledge, truth, love, beauty, goodness and faith give vitality to the mechanism of existence." The value of time is purely relative; and if we count it by heart-beats, not by tickings of the clock, or the shadow of the dial; if, "he lives longest," as Baily says, "who knows the most, thinks the wisest, acts the best;" then many who were rich in years have really died young, while others whose lives measured by the calendar, were cut short early, have been rich in life.

Shakespeare, who died at fifty-two, lived ten times as long as poor old Parr who could boast of his one hundred and fifty-two years. Mere old age following an oyster-like existence, during which one has droned away his life in his shell, never buffeting the waves for himself or others is a questionable blessing; but the serene old age which is secured by temperance, sobriety and the conquest of vicious appetites and passions, the long mellow autumn of life, in which are harvested the fruits of years of useful toil, is to be coveted and striven for by all.

"Men deal with life, as children with their play,
Who first misuse, then cast their toys away."

OPHTHALMIA NEONATORUM.

Read before the Cambridge Medical Improvement Society.

BY AUGUSTUS P. CLARKE, A.M., M.D.
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Among the duties and responsibilities which the obstetrician has in large measure to assume, is the treatment of cases of ophthalmia occurring in the newborn. The disease is by no means infrequent; its course and termination have so often resulted unfavorably that public attention has been directed to the consideration of the subject. Perhaps it would not be unsafe to say that upward of 40 per cent. of all cases of total blindness has had its origin in this condition. The affection seems to be caused by acrid or septic discharges from the mother's tissues, coming in contact witn the eye of the fetus during its descent or expulsion from the vulvo-vaginal outlet. The stimulus of light to the infant's eyes may be an exciting cause in those cases in which a purulent or gonorrheal infection is present. Sometimes other agencies may lend their influence in exciting inflammation; want of cleanliness, a strumous constitution, exposure to cold, and an insufficient nourishment are factors that may hasten the attack and lead to the dire result. Sometimes only one eye is affected, but in the severer cases the inflammation attacks both eyes. This may be either by the direct contact with the invading bacteria, or by the presence of germs with the lymph current in its course from the vitreous chamber through the sheaths of the vessels of the retina and through the sphenoidal fissure to the cranial cavity. From this point the bacteria may be hastened along between the optic nerve sheaths or coverings to the perichoroidal space of the other eye, and then passing with the current from the interior of the cranium into the subvaginal space of the optic nerve. That such a posterior lymph stream is developed in man as in the lower animals has been deemed by writers as highly probable.[1]

In my own practice I have met with a considerable number of cases of purulent ophthalmia, and in almost every instance I have been able to get either a history of a gonorrheal attack occurring in the mother, or I have been able to obtain evidence to warrant a suspicion of the existence of that condition. Among the more prominent symptoms occurring in the early stages have been a peculiar florid condition of the palpebræ; these have often been agglutinated. The secretion from the inflamed conjunctiva becomes profuse, thick and purulent, some of which is discharged, but more is retained, induc-

[1] Further contribution to the subject of sympathetic ophthalmia by Howard Gifford, M.D., Vol. iii, Ninth International Medical Congress, 1887.

ing distension and edema of the palpebral tissues beneath. In the milder forms, the inflammation is for the most part confined to the conjunctiva of the lids; in the severe forms, however, the inflammation extends beyond the fornix to the conjunctiva bulbi and to that of the caruncula lacrymalis. When the inflammation extends to the ocular portion, infiltration and ulceration of the cornea are liable to take place. In some instances the child appears to suffer but little, while in other instances the local and constitutional symptoms give rise to much fretfulness and really physical disturbance. This is especially so when any attempt is made to separate the eyelids and to remove the purulent exudation which is constantly taking place and which is liable to exercise undue pressure upon the orbicularis muscle, and to cause a permanent eversion and even an ectropium of the upper lids; this feature of the lids was termed by the ancients, lagophthalmia. The exudation often assumes different shades of a greenish or yellowish hue; sometimes the discharge is sanguineous or ichorous, resembling somewhat the gleety exudation of chronic gonorrhea of the urethra.

One of the most marked or characteristic symptoms of gonorrheal cases is the chemosis or the edema of the ocular portion of the conjunctiva. The most careful examination, aided by the use of the wire speculum, does not always reveal the existence of ulceration going on in the marginal or in the central portion of the cornea. A hazy condition of the cornea may continue for some days without exciting the occurrence of ulcerative processes. One of the dangers to be apprehended is the taking place of interstitial deposits and a complete opacity of a portion or of the whole of the cornea. This in the later stages will be characterized by the development over more or less of its entire aspect, of a bluish gray film, the result of a proliferation or of an infiltration of tissues.

Authors speak of minute ulcers forming on the cornea after a hazy condition has taken place, as indicative of gonorrheal infection. Such a condition in young girls I have repeatedly observed without the least history, or even suspicion, of the presence of such a factor. These cases have occurred as the result of catarrhal inflammation or epidemic influences, and have yielded under appropriate treatment without leaving any untoward results; in some cases, if not in the most, when ulceration occurs the marginal portion of the cornea is first attacked; the morbid process extends in a crescentic form toward the central portion. This condition interrupts the nutritive processes of the corneal tissue and causes the loss of its vitality.

Ulceration may be so extensive as to lead to the escape of a portion or of the whole of the aqueous and sometimes of the vitreous humor, and to the collapse of the bulb. In cases in which opacity or ulceration of the eye is only of a limited extent, adhesions may take place between the cornea and the iris; minute points of opacity may form in the capsule of the lens. These conditions may lead to loss or impairment of vision. The corneal tissue may be so affected by ulceration or sloughing that the crystalline lens will escape through the opening or, instead, will become infiltrated with deposits of earthy phosphates which, by impinging on the ciliary processes and the iris, may give rise to severe neuralgia. Occasionally the disease may cause permanent enlargement of the globe. There may be a staphylomatous projection of the cornea or of the sclerotic. The cornea may have been destroyed, leaving only the iris covered by a fibrous or a cicatricial tissue. These unsightly projections, or adventitious masses often become the source of much inconvenience. The child suffers so much from the irritation thus induced that he can not be easily restrained from a constant rubbing of his hands and fists against the protruding or hyperboloid tumor. Sclerotic staphylomata are the result of a gradual increasing distension of the attenuated fibers of the tissues involved; this usually takes place by the excessive accumulation of the aqueous medium. It may result from an iridochoroiditis. Such a condition may lead to an undue development of the vascular tissues which, though exceedingly minute, abound in the normal condition of these structures of the eye. In sclerotic staphyloma the enlarged eyeball has a bluish or a dark leaden color.

The indications for the treatment of ophthalmia are to remove as much as convenient, at short but regular intervals, of the purulent exudation. This may be done by syringing. Prolonged irrigation with antiseptic washes may be resorted to with much advantage. Mr. Edgar Browne[2] uses a half per cent solution of trichlorphenolate of magnesium. This is applied through perforations of fine silver tubing which can be made to penetrate the conjunctival sac. Mr. Jones,[3] of the Liverpool Eye Infirmary, used Panas' solution of biniodid of mercury. This was applied either through Mr. Browne's irrigating lid retractor or through other devices which could be made to pass well into the sac of the conjunctiva. This means of treatment, though affording much relief in cases of ophthalmia and dacryocystitis resulting from the presence of pyogenic cocci, was found to be too severe as a routine treatment for cases of ophthalmia neonatorum. In conducting the treatment for a case of such ophthalmia whether catarrhal, blenorrheal, gonorrheal, phlegmonous or purulent, the important measures to be taken are to remove or to wash away the exudation and to change the tissues and products of secretion from a septic to an aseptic condition, without adding to the morbid process or doing violence to the epithelium and to the structures beneath. In my earlier practice I used, as local applications, acetate of zinc in the proportion of one scruple to four ounces of water; I also used acetate of lead and alum. A solution of nitrate of silver was formerly a favorite remedy in my practice. A solution from four to seven grains to the ounce was used, whether the exudation was purulent or gonorrheal. I have used as high as fifteen grains to the ounce in cases in which the distension of the tissues was marked. McKenzie's solution of bichlorid of mercury has occasionally yielded excellent results. The formula of this collyrium was as follows:

Hydrargyri bichloridi	1 gr.
Ammonia hydrochlorid	6 grs.
Water	16 ozs.

The employment of nitrate of silver in solution as a local application was for a long time much resorted to, especially as a preventive of ophthalmia in the newborn. That renowned obstetrician at Leipzig, Prof. Credé, was always accustomed to advise the

[2] Braithwaite, Vol. c., pp. 204–5.
[3] Op. cit.

use of a 2 per cent. solution; a few drops of the lotion were applied to the eyes as soon as the funis was cut, and the eyes were cleansed from the smegma and the maternal secretion. I can testify from my own personal experience while I was in this great master's clinique during my later student days, with what enthusiasm and minuteness of detail every such procedure of his work was carried out. At the Dresden Clinique[4] for women, thorough irrigation with a solution of perchlorid of mercury was frequently repeated during parturition. As soon as the infant was born, the eyes and parts adjoining were washed with cotton or lint moistened in tepid water. The solution of nitrate of silver was then applied. A similar method of treatment was adopted at the Jessop Hospital for Women, in Sheffield. As a means of prevention of ophthalmia in the newborn this method of treatment for patients in the larger hospitals may prove to be highly efficacious; in private practice, however, such a course as a routine practice may seem unnecessary, except in the cases occurring among the poorest, or among those in whom there may be evidence, or a history, or a suspicion, at least, that the mother's tissues are in an unhealthy condition.

Cases now and then occur, in which the most approved practice fails to afford favorable results. In some cases I have achieved successful results by the employment of the mild chlorid of mercury. This I use freely between the lids after the eyes have been cleansed. Sometimes I have used iodoform instead of the mild chlorid, but this in two instances signally failed me. I have used Panas' solution of biniodid of mercury, and have been highly pleased with the results obtained. When I have found that its free application caused too much smarting or irritation, I have reduced the strength. The best method for employing it is by irrigation. In a case in which ulceration of the cornea had occurred, the patient recovered without impairment of sight. The following is the formula for the solution which I have employed:

Hydrargyri biniodidi	1 part.
Absolute alcohol	400 parts.
Distilled water resterilized	20,000 "

This solution, as will appear, is only a mild collyrium; the liberal use of it will prove, nevertheless, that it is an antiseptic and that it has a due degree of potency for overcoming pyogenic cocci. In those exceptional cases in which ulceration or sloughing of the cornea has taken place with consequent impairment or loss of vision, surgical measures for relief of the irritation or for lessening the deformity will have to be instituted. Certain morbid conditions of the eye may require the removal of the ball, especially for the arrest of disease on account of the occurrence of sympathetic irritation or of other severe disturbing processes. Sclerotic staphyloma, which may be the result of a gradually increasing distension of the fibrous structures through an excessive formation of the aqueous fluid, is not infrequently met with. For the relief of this condition some authors advise total extirpation of the globe. In some few cases I have had recourse to this procedure. In performing such an operation the cataract knife should be passed through the staphyloma in such a manner as to form a flap; this should be seized with a forceps and then be removed by another incision. Should the incision be carried back to the margin of the ciliary region the humors may be expected to escape, and the remaining portion of the bulb will collapse and undergo nodular degeneration.

On Oct. 2, 1893, I was called to see a child aged 10 months who had a large staphyloma of the left eye, caused by a severe attack of gonorrheal ophthalmia. Owing to the loss of sight, the disfigurement and the consequent irritation I at first determined to effect partial if not total extirpation of the ball. The knife, however, was only carried through the corneal projection, and the operation was completed by the second incision; a large amount of aqueous fluid escaped and the eye appeared to be totally collapsed. The application of dressings with iodoform was made to the wound; the operation had the effect of relieving all the local symptoms. On removing the dressing after the fourth day I was pleased to find that the normal humors, which had so long been subjected to the inordinate pressure from the staphylomatous accumulation, were re-forming, and that indications were favorable for complete restoration of the bulbous development. In the operation for this case I was careful that the incision should not be carried through the entire depths of the corneal structure, but only through the anterior basal membrane or lamellæ, the posterior laminæ having, as I then believed, been crowded unduly backward by the excessive accumulation of fluid in the interlamellæ spaces.

On January 19, I operated on the right eye for a slowly developing staphyloma which was causing much local irritation. The incision was made as in the other operation, but the fluid in the areolæ between the basal tissues was not as profuse as in the other eye at the time of the first operation. I, therefore, did not have as favorable opportunity as before of witnessing an apparent restoration of the normal media. The operation, however, proved successful in overcoming the irritation and in lessening the deformity for which the operation was mainly undertaken.

[4] London Lancet, 1891.

TENORRHAPHY BY MEANS OF THE SUTURE Á DISTANCE OF CATGUT, WITH REPORT OF CASE.

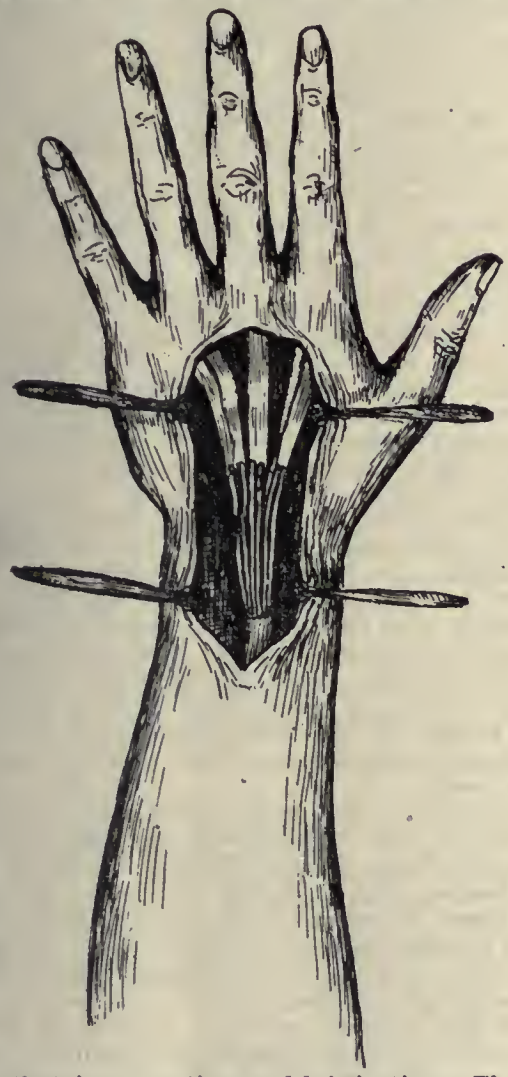
Read before the Chicago Pathological Society, April 9, 1894.

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Injuries to tendons and their sheaths is of frequent occurrence, and a perfect knowledge of anatomy and method of repair of these structures for the requisite surgical treatment is of great importance to the practical surgeon. In studying our text-books of surgery, one is struck by the liberal space allotted to fractures; while the subjects of laceration of tendons and treatment are superficially dealt with in a few lines. Although injuries to tendons occur both in hospital and private practice far less often than fractures, this subject should receive comparatively more consideration from authors, both from a pathological and surgical standpoint. It is not in recent cases where tendons are simply divided that surgeons meet with difficulties; but it is in old cases as in ancient fractures, where pathologic conditions have manifested themselves and produce the many

complications which call for difficult surgical intervention. Therefore, before considering the treatment by means of the *suture á distance*, I will comment lightly on the pathology and regeneration of divided tendons. Tendons are composed histologically of connective tissue. The cells are not round, but elongated into fibrils which are firmly bound together and give the appearance of white fibrous cords. They do not possess the quality of elasticity, and the vascular supply is very limited.

Tendons in performing their physiologic function, glide backward and forward; and like other parts of the body which are subject to motion are provided with a means intended to place friction at a mini-



mum, that is, protection and lubrication. The tendon sheath answers these two purposes well. In complete rupture of tendons there is a loss of function and a consequent atrophy; followed later by a degeneration of the extremities to a limited extent. It is a law of nature that where a tissue irrespective of histologic structure or vascular supply, and which has performed a customary amount of work is suddenly put to rest, either through trauma or otherwise, there is always more or less involution of its cells.

However, ruptured tendons differ from nerves in that the two ends only degenerate for about half an inch; while the medulla of the distal portion of a nerve degenerates into a granular mass, devoid of cellular organization. The sheath of Schwann which is composed of connective tissue, alone remaining intact. This difference is most probably due to the different functions performed by the two structures and also to their difference in histology. The one composed of connective tissue whose function is entirely mechanical, namely, that of moving the bone to which it is attached, through the contraction of its muscle; while nerve cells are of a far more highly organized structure, and have vital properties for the transmission of peripheral and central stimuli. The cells of an injured tendon are surrounded by cells of their own kind, as connective tissue is omnipresent in the body and they accommodate themselves according to circumstances by union with surrounding structures; so that no matter how far the tendon ends may have retracted, there will likely be some function performed through contraction of neighboring muscles. On the other hand, the distal end of a nerve, provided collateraanastomosis is not established, degenerates in the course of several weeks. This deterioration of nerve cells does not take place by reason of a deficient vascular supply, but as a result of loss of function. Cell life, either animal or vegetable, is only maintained when metabolism is in progress; and metal bolism is only performed as long as the cell acts the rôle destined for it by nature. Although tendon tissue is scantily supplied with blood vessels, it differs from cartilage in being endowed with great intrinsic vegetative capacity. This is well demonstrated in tenotomy of the tendo-Achilles for talipes equinus, where the tendon ends are oftentimes widely separated, and no attempt is made by the surgeon to facilitate regeneration by art; but within a short period this great gap is filled in with new tissue from the tendon ends and sheath. Regeneration of tendons, although not given as much individual attention as was given to other structures, nevertheless was made the subject of some experimental investigation. It takes place by the production of embryonal cells from the mature cells of both extremities, and also probably to a lesser degree from the tendon sheath. In injury of tendons there is generally hemorrhage from neighboring blood vessels simultaneously cut or lacerated. This depends upon the anatomic location of the trauma.

M. Saint Germain speaks of a hemorrhage continuing eleven days after subcutaneous division of the tendo-Achilles.

Blood filling up the intervening space between tendon ends, naturally suggested the "organization" theory of Hunter, who maintained that the coagulum became vascular and in time was directly transformed into new tissue. This theory was supported by d'Ammon in 1837, Thierfelder in 1852, and Jobert in 1864; although not without some modifications. While they thought it very probable that blood was gradually merged into tissue, they were positive that it was the active factor in cicatrization. Later Pirogoff, Dembrosky and Volkmann gave insufficient blood extravasation as a cause for incomplete regeneration. Pirogoff asserted that blood between the tendon ends acted like a sequestrum in bone necrosis by stimulating tissue proliferation. Very recently Walter also encouraged this idea by recommending in tenotomy, non-ligature of vessels, in order to produce a clot as devised by Schede in the treatment of bone cavities. The inter-tendinous bloody effusion disappears by absorption about the fifth or sixth

day according to observations of Lebert. Bouvier in 1837 insisted that regeneration was affected by the cellular sheath, which through a process of corrugation and thickening, developed into a tendinous cord.

The blastema theory for a time found many adherents, championed by Henle in Germany, Robin in France and Brodhurst, Adams and Paget in England. This hypothesis was founded on the supposition that protoplasm was spontaneously developed into cells. This reasoning rested on a weak foundation when it came to practical demonstration and was soon exploded. Bizzozero in 1868 already looked upon the principle of this theory in the light of a second rôle. Cohnheim made a step in advance toward the true law of regeneration when he affirmed that leucocytes which had emigrated from the blood vessels surrounding the interval between the two tendon extremities were changed into granulation tissue through their own innate powers. The cellular theory is the last promulgated and has been faithfully defended by Türcher, Donders, Virchow, Remak, Kölliker, Cornil and Ranvier. Regeneration of connective tissue is analogous to regeneration of any other tissue, in that it can only generate from mature cells of its own kind. The blood clot acts in a passive manner by forming a temporary matrix for the immature cells and also in the capacity of an irritant; thus provoking a hyperemia which is favorable to the production of new tissue. The iodoform gauze tampon accomplishes the same effect; only one is artificially produced, while the other is nature's effort to accomplish the same purpose.

After injury there is always more or less para-vascular extravasation of blood; which is not essential for regeneration, but is a great auxiliary. Karyokinetic figures are seen in the cells of the tendon extremities and also in the tendon sheath within forty-eight hours after the trauma, followed by the production of bud-like processes which extend into the blood clot. These are embryonal cells and being of connective tissue origin, are called fibro-blasts. They are round or angular in shape, multi-nucleated and are composed of the elementary matter of all animal and vegetable life, protoplasm. All proliferation is followed by vascularization, that is extension of blood vessels from the neighboring mature tissue into the mass of granulation tissue. Cicatrization next becomes manifest. The embryonal cells after having supported themselves through metabolism for a certain length of time, by their own natural inherent quality evolutionize into mature cells or fixed permanent tissue. The large round or angular cells gradually merge into fibrils. In this metamorphosis each cell draws its neighbor into closer relation; thereby producing cicatricial or scar contraction. In this instance nature again centers her efforts to a good purpose; for by the mechanism of contraction the two tendon extremities are brought nearer toward each other.

The *suture á distance* as a means of establishing communication between ruptured tendons was inaugurated by Gluck in 1884. He operated successfully upon a case where the extensor tendon of the index finger was separated eight centimeters. This mode of suture was studied experimentally by Forgin, Assaki, Jeannel and Van Haecke. Where the divided ends are not too far apart, a plastic operation should always be resorted to; that is the procedure devised by Czerny, of splitting the tendon upon one side for some distance, and turning the divided flap over to its fellow of the opposite side and suture. If the flap does not reach, the other tendon should be treated in the same manner and both flaps united end to end. In cases where approximation can not be secured, the *suture á distance* is the most useful, in fact it is the only operation which can be resorted to under the circumstances. An absorbable suturing material, such as sterilized catgut or kangaroo tendon should be used. The tendon ends are united *á distance* by several sutures in order to make a firm bridge-work. Catgut becomes entirely absorbed by phagocytosis in a short time. The operation meets several important indications, namely: 1, It prevents the tendon ends from retracting through elasticity of the muscle; 2, it forms a passage way for tissue proliferation; 3, it establishes a barrier, by which the embryonal cells secure protection from atrophy, caused by pressure of surrounding parts; 4, the suture being a foreign body, acts as a stimulant to the mature cells.

The following case is of interest, as there was extensive loss of substance of the extensor tendons of the hand, and this was entirely remedied by the absorbable *suture á distance*.

Mr. G. H., young man, English, miner by occupation; residence Northern Michigan. Entered St. Joseph's Hospital Jan. 6, 1894. Three months previously while at work in a mine, he accidentally thrust his wrist against a jagged, sharp rock, making a complete transverse incision of the extensor communis digitorum tendon at its junction with the muscle just below the middle of the fore-arm. The extensor indicis tendon was also severed. After the accident the integument was stitched and the wound bandaged. According to the patient's statement no attention was given to the deeper structures. The dressings were removed several days later and the wound found healed; but the three fingers supplied by the extensor communis digitorum were absolutely useless as far as extension was concerned. The patient waited three months in the hope of again recovering the use of his disabled hand, but to no avail.

Operation: Incision of three inches in the area of the old scar, parallel with the tendons. After carefully dissecting away the scar tissue, the proximal end was found. It did not consist of connective tissue, but was true muscular structure. Then came a tedious search for the four distal extremities, the three tendons of the extensor communis digitorum and the extensor indicis. After searching for some time without success, I carried the incision further in the distal direction and found the tendon ends about two inches above the metacarpo-phalangeal line. The perplexing problem of securing union between the distal ends and the proximal end now presented itself, as the intervening space was four inches in length. Splicing after the method of Czerny could not possibly be practiced here, and under the circumstances, I resorted to multiple *sutures á distance*, as the means of indirect approximation. Medium sized catgut, sterilized according to Bergmann's method was used. I made eight sutures, connecting the extensor communis digitorum and the extensor indicis tendons to the extensor communis digitorum muscle. The external wound was closed with an interrupted row of silkworm sutures and a continued row of catgut. No provision was made

for drainage, as hemostasis had been well effected by ligature and hot water irrigation. The hand was dressed in an extended position upon an anterior splint. The dressing was removed upon the fourth day and the wound presented a favorable appearance, except for a small suppurating focus around one stitch. This suture was removed and after thorough disinfection with a solution of bromin and insertion of a small iodoform gauze tampon, the dressing was re-applied. The wound was irrigated the subsequent three days and I succeeded in aborting a diffuse suppuration, the wound healing intact. The sutures were removed upon the ninth day. On the twelfth day the patient could extend the three fingers upon the splint with slight effort. He speedily recovered the use of his fingers and at the end of a month was discharged from the hospital with function entirely restored. Patient could lift a glass of water to his mouth and even write with perfect ease.

Remarks:—Although I did not have the opportunity of making an examination *in vivo* of the regenerative process which took place, I am satisfied that there was new tendon tissue produced to the extent of over four inches. When the patient made extension, by placing a finger at the muscle extremity, the impulse was perceptible along the whole route of the tendons, showing that there was direct communication. The new fibrous cords when in action would bulge and become prominent to such an extent as to become visible through the skin. These tests were convincing proofs. This case is also of pathologic interest by reason of the sutures uniting muscle with tendon. Muscle cells are endowed with very limited intrinsic vegetative capacity, and do not extend further than an inch from the ruptured end; so that in this case proliferation from the distal extremity was the prime factor in effecting reposition, as connective tissue is the most prolific of all tissues. I wish also to dwell on the importance of making as many sutures as possible in order to construct a canal, thereby securing a line of least resistance for the embryonal cells. If I had secured each tendon with but one suture, I am certain that there would have been very probably an obliteration of the canal by neighboring tissues, and consequent failure of the operation. An interval of four inches is an unusual occurrence. It is seldom that tendons become separated for more than one or two inches at the most; and when united by this method, the operation will yield encouraging results.

RAPID METHOD OF DEMONSTRATING TUBERCLE BACILLI IN SPUTA.

BY JOHN D. KALES, M.D.

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Those who have been engaged in the demonstration of bacteria, and the use of the various methods of staining them, have doubtless been prompted to simplify the technique as much as possible. They can thereby attain a much greater percentage of successful preparations when the work is being done by a large class in the laboratory.

A method that is carried out with ease and success by many students working together in a laboratory, must of necessity possess certain advantages that would favor its adoption by every practitioner who realizes the diagnostic value of detecting tubercle bacilli, and has the necessary optical apparatus.

The writer has for several years stained sputa for tubercle bacilli by a rapid method, one quite generally adopted at present. It consisted in using the cover-glass as if it were a dish, and while holding it with a pair of forceps, the various staining fluids were boiled upon its surface, the cover-glass being held in the smokeless flame of an alcohol lamp or Bunson burner. The usual carbol-fuchsin solution was used, and decolorization accomplished by any of the well-known means, *i. e.*, Orth's solution[1] or nitric acid and water 1–4. If Orth's solution is used, decolorization is slower and seems to yield preparations which have little tendency to fade.

Recently the following method has been found still more convenient. However, in all methods where the flame is applied directly to a cover-glass for the purpose of heating or boiling a staining fluid, there is great need of using only the best quality of glass. This should be very thin, white and well annealed. The whiteness may be determined by looking at the edges of a package of glasses; these should show no greenish tinge. Their brittleness may be estimated by bending one between the fingers; it should stand considerable flexion before breaking. In buying cover-glasses it is necessary to observe these conditions, for a large number that are sold are not fit to use in rapid staining methods where the flame is directly applied.

It is also very important that the forceps used for holding the cover-glass be of the right kind. The best are the curved fixation forceps made for oculists. Their blades are so set that fluids are not drawn between them by capillary attraction. They grasp the cover-glass firmly and may be locked. The teeth are of no use and can be smoothed off with a file.

One should be provided with a saturated alcoholic solution of fuchsin, which is made by adding dry fuchsin to a quantity of alcohol until no more will be dissolved; the excess will settle to the bottom of the fluid and should be allowed to remain there. A pipette bottle is most convenient for this solution, which keeps indefinitely. A 5 per cent. solution of carbolic acid in distilled water should be at hand and is best kept in a pipette bottle also. For decolorizing, a 25 per cent. solution of nitric acid is placed in a wine glass.

Suppose we use a thin, clean and perfectly dry cover-glass of good quality, three-fourths of an inch square, the film of sputum being fixed upon it in the usual manner; then it will be found that twelve drops of the 5 per cent. carbolic acid solution will cover its surface. This is dropped on while the glass is held in the forceps, then with care the fuchsin solution is added, drop by drop. The first two drops make a blood red precipitate in the carbolic acid solution, the third tends to clear this slightly, while the fourth should cause the precipitate to disappear entirely. Thus when twelve drops of the 5 per cent. carbolic acid are used, four drops of fuchsin will be found necessary. Other sizes of cover-glasses will require a different quantity of the stain, though the proportion between the two fluids will be practically maintained as 4–12 or 1–3. Whatever size glass is used it must be completely covered with the carbolic acid solution, and it is well to add a few extra drops. This will prevent evaporation leaving any portion of the glass dry. We may ignore the above proportions

[1] Strong hydrochloric acid, 1 part; alcohol, 30 parts; water, 70 parts.

and always drop the fuchsin until the precipitate that first forms, clears.

Holding the cover-glass in suitable forceps, the staining fluid is boiled upon its surface, but never long enough to dry on the glass. Wash the glass in a stream of running water, still holding it with the forceps, and then wave it back and forth in the decolorizing solution until all color is lost; this may take twenty or thirty seconds. Wash again in running water, dry with the help of blotting paper and heat. If desired, counter stain with cold saturated aqueous solution of methyl blue; if not, invert the dry glass on a drop of glycerin, balsam or water for examination.

The entire process of fixing, staining, decolorizing, etc., may take from two to four minutes, and during this time the glass has been held continuously in the forceps.

There may be conditions when the application of a cold stain for tubercle bacilli—the cover-glass being left in the fluid for twenty-four hours—would be advantageous. The writer has seldom found such conditions necessary. But the above rapid process, which obviates the necessity for keeping on hand staining solutions liable to deteriorate, or obliges one to make up a stock solution whenever there is a suspicion that the one on hand has grown too old, has its advantages.

The overcoming of these difficulties may induce the general practitioner to avail himself more frequently of that method of detecting tuberculosis which has now grown to have a very considerable importance.

AN ABDOMINO-INGUINAL SUPPORTER. FOR USE AFTER HERNIOTOMY.

BY JOHN B. HAMILTON, M.D., LLD.

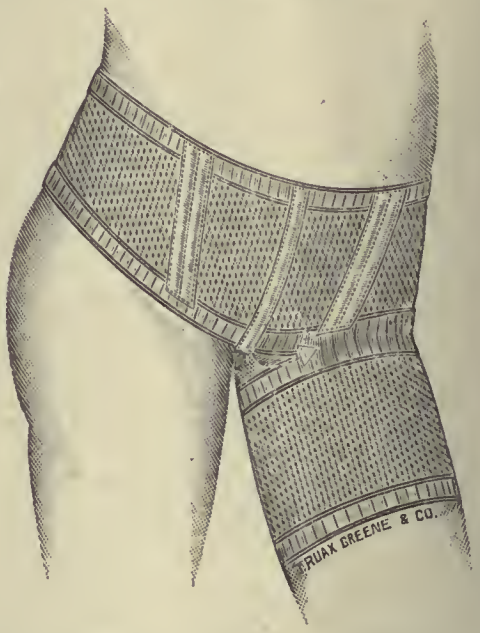
PROFESSOR PRINCIPLES OF SURGERY AND CLINICAL SURGERY RUSH MEDICAL COLLEGE; PROFESSOR SURGERY CHICAGO POLICLINIC.

"The patient should not be allowed to get up until three weeks have elapsed after the operation and then only if the wound is sound. The question of a supporting bandage or a truss will then have to be considered."—Treves, "Manual of Operative Surgery," 1892, Vol. 2, page 530.

"A spring truss should not be worn after the operation as its pressure tends to cause premature absorption of the lymph, but the abdominal wall requires a certain amount of support for some months. In infants this may be managed with a skein of Berlin wool as already described; but for children and adults the form of appliance known as Harrison's truss answers best. It consists of a well fitting pelvic band and two short thigh pieces made of linen; like a pair of very short drawers fitting tightly and fastened with lacers; a perineal band prevents its ascending, and may in addition be furnished with a scrotal bag and with braces passing over the shoulders."—Moullin, "Surgery," 2d Ed. by Hamilton, 1894, p. 904.

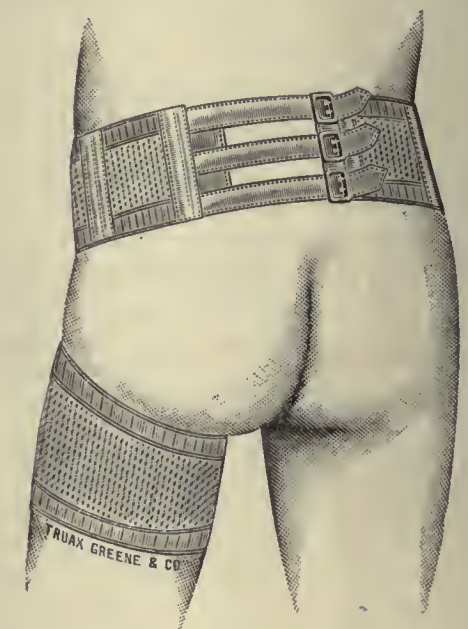
"In all cases during more than six months, those who are subjected to the radical cure should be watched with care and on the first menace of the reappearance of the hernia a bandage must be prescribed, so as not to lose all the benefits of the operation.—Berger, Traité de Chirurgie, Duplay et Reclus, Tome vi.

My experience, now quite extensive, in operations for the radical cure of hernia, has convinced me of the general correctness of the view, that some kind of support is always indicated after herniotomy. The direction given in some of the recent writings on the subject, to cause the patient to wear a light spring truss for some weeks, is only less mischievous than the practice of discharging such patients without any support. In casting about for some apparatus that would approach the shape of the human hand in supporting the new cicatricial tissue closing the inguinal ring, I thought a thin piece of flat sole leather slightly hollowed like the palm of the hand, covered with chamois skin, making uniform pressure on the abdomen, would fulfil the indications. To retain the broad pad in place I caused it to be sewed to a supporter made of silk elastic, with a thigh piece.



The cut shows the supporter as made for me by Truax, Greene & Co.

I have tried it on three cases, and with satisfaction to the patient in all.



With this bandage the pendulous abdomen may be well sustained, and the thigh piece keeps the pad in position. The bandage should be woven in a single piece, and the pad carefully fitted to the patient before permanent fastening. Care should be taken that the thigh piece is not too tight. The straps should be snugly buckled at the back. Patients wearing these supporters have been instructed to remove them at night.

Buena Park, Chicago, April 20, 1894.

ON THE AUTONOMY OF THE HEART.

BY GUIDO BELL, M.D.
INDIANAPOLIS, IND.

In the last number of the *American Journal of Medical Sciences*, Prof. I. M. Da Costa has published eight cases of weak heart, where the causation of neurasthenia and organic disorder, as valvular lesion or fatty degeneration had to be excluded.

He is inclined to attribute this weakness to the influence of the heart ganglia. Notwithstanding, Romberg[1] in compiling the recent experimental researches on the heart, has proven that the animal heart is active by itself and is regulated only by the sympathetic and pneumogastric nerves.

The heart's action never could be fully explained, neither in normal nor abnormal condition by its innervation. There was a supposition that Remak's ganglia promoted the activity of the heart; but embryologic researches revealed the fact that the heart is active before it is reached by these nerve centers, and, furthermore, that these centers spread out only sensory nerve filaments. Then nerve-cells in the heart muscle were looked for, but in vain.

If a man of high repute and large experience does not accept what seems to be an established law theoretically, it is in order to report all pathologic experiences which may be apt to sustain theory.

This is so much more justifiable in a case where a phenomenon can not be explained, except by assumption of what was found theoretically to be the truth.

In an article of the Cincinnati *Lancet-Clinic* of Sept. 19, 1891, I have reported three cases where a peculiar noise of the heart was heard at a distance during the shock. The sound was systolic and appeared not immediately after the injury, but later and stronger, according to the severity of the shock, and lasted until the organism revived and both sounds became audible again.

Both my cases recovered. I could not give a satisfactory explanation at that time, but in a paper read before the Marion County Medical Society in Indianapolis, March 28, 1893, I said that the peculiar noise of the heart heard at a distance during the shock can not be explained, unless the autonomy of the heart is accepted.

The heart meets an undue resistance in the collapsed arteries, and not being restrained by its regulating nerves is working excessively, thereby causing the undulations in the heart region visible through the bed-covers, and the sound audible at a distance of fifteen steps.

I also spoke of the following case: On Jan. 4, 1893, I was called to see John M., at 10 o'clock in the evening. I saw the man, who was 63 years old, half an hour later, lying in a bed without any sign of life.

He was walking the floor after an ordinary day's work, apparently well and in his usual way, when he fell backward without stumbling and lay perfectly motionless. This had happened a short time before 10 o'clock. I found him at 10:30 P.M. with eyes half open, pupils moderately dilated, immovable, lids languid, lips cyanotic, cold skin on face and extremities; temperature in axilla below 95 degrees F.; no respiration; different examinations were made; no pulse at the wrist, but the heart was beating regularly, not much weaker than in life, twenty-one beats in fifteen seconds. I counted the heart's sounds seven times, and also my own pulse which was eighteen beats in fifteen seconds. The man was dead, notwithstanding the beating heart. I injected one one-hundredth grain of nitro-glycerin hypodermatically. A few minutes after 11 o'clock the heart's action became irregular and soon ceased.

These pathologic phenomena fully approve Romberg's statement of the autonomy of the heart.

Austin Flint in his text-book on "Human Physiology" says: "The heart seems to act without any palpable excitation." But if both experimental researches and clinical experiences forward such strong evidence, it seems not to be immodest to formulate Prof. Flint's assertion more positively by saying: "The heart does act without any palpable excitation."

[1] In Berlin klin. Woch., March 27, 1893.

FACIAL ERYSIPELAS—TREATED WITH EXTERNAL APPLICATIONS OF GUAIACOL.

BY CHAS. J. WHALEN, M.D.
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A review of the latest literature on erysipelas reveals, on the whole, a very unsatisfactory state as regards the treatment, and marked discrepancies exist in the writings of different authors on the subject. On this account I wish to place before you some observations based on a personal experience with this disease, treated by the external application of guaiacol.

Etiology.—Dr. J. M. Anders of Pennsylvania, gives elaborate statistics to prove that debilitating diseases greatly predispose to this disease. The primary cause is the streptococcus erysipelatosis discovered by Fehleisen. Jordan is of the opinion that the specificity of Fehleisen's erysipelococcus is questionable, and that its identity with the streptococcus pyogenes is probable. He has studied this subject carefully with reference to this question, and has drawn from his observation the conclusion: That erysipelas is etiologically not a specific disease; that, as a rule, it is caused by the streptococcus pyogenes, but that it may be provoked also by the staphylococcus pyogenes aureus.

These cocci which are so nearly identical with the streptococcus pyogenes, are found chiefly in, and spread along the capillary lymphatics of the skin. Recklinghausen and Lukowsky found them in the lymphatic vessels and connective tissue spaces in the structure affected by erysipelas. Fehleisen found cocci in chains constantly present in bits of skin excised from the spreading edge of an erysipelas rash; they lay in the lymphatics chiefly of the superficial part of the corium, never in blood vessels, and only exceptionally in the connective tissue spaces, or in the immediate vicinity of blood vessels.

Erysipelas spreads along the superficial lymphatics, but not necessarily in the direction of the lymph current, which may be temporarily arrested by blocking of the interior of the lymphatics with cocci. As this microbe is non-motile, its transportation in a direction opposite the lymph current can only occur by reproduction.

In the facial form, when no wound is visible, it is

probable that infection takes place through some small abrasion, though auto-infection may possibly occur, the organism having been previously absorbed through the respiratory or digestive tract. This, however, seems improbable.

As an addition to our knowledge of the effects of guaiacol in the treatment of this disease, I hope that the following may be of interest:

Case 1.—J. E. S., age 30. I saw the patient November 8. He complained of having had tonsillitis two weeks previously, but he had not regained his strength. Three days before I saw him he began to suffer from headache and appeared to have fever in the afternoon. When first seen by me, he was suffering from nausea, headache and constipation. He had a severe chill the preceding day. I found the temperature 103.5 degrees F., pulse 100. I noticed a slight red blush near the lachrymal duct which had every appearance of the beginning facial erysipelas.

I ordered pure guaiacol applied to the affected area and for some distance beyond, in the hope of preventing further extension. The following day the patient claimed that he had experienced instantaneous relief from the application, that his headache shortly afterward disappeared and the fever gradually subsided, so that he was able to sleep for the first time in four nights.

His appearance, however, was much worse than on the preceding day. The rash had spread laterally to the ears, and had extended over the forehead to the border of the scalp. The eyes were completely closed from edema caused by escape of inflammatory exudate into the loose cellular tissue in this region. There was considerable delirium. At 10 A.M. temperature 104 degrees F., pulse 100. Again applied guaiacol with the same satisfaction as before. The nurse found it necessary in this case to make three applications daily for the next four days.

Three hours after the application of the guaiacol, the temperature was 97.5 degrees. At 5 P.M., 100.5 degrees F.

November 11, temperature, 10 A.M., 99 degrees F.; 5 P.M., 100 degrees F.

November 12, temperature, 10 A.M., 98.8 degrees F.; 5 P.M., 99.5 degrees F.

November 13, temperature, 10 A.M., 98.6 degrees F.; 5 P.M., 99 degrees F. Patient discharged cured.

Case 2.—I was called December 16, to see Mrs. S., mother of preceding patient. Had several previous attacks of erysipelas. At the time of my visit she had a temperature of 104.5 degrees F. Complained of intense headache, dry burning skin and constipation. The rash had extended over the entire face, ears and forehead. Bullæ had formed in the ears. I applied the guaiacol as in the preceding case with marked relief of the symptoms. At 1 P.M. temperature 102 degrees F. At 3 P.M. temperature 101 degrees F. At 5 P.M., 103 degrees F. Again painted the face, when the fever gradually receded to 101 degrees F. At 8 P.M., December 17, temperature 101 degrees F., pulse 98. Urine scant and contained albumen. Guaiacol was applied once a day for the four succeeding days.

December 18, temperature 101 degrees F., pulse 96. Albumen still present.

December 19, temperature 100.5 degrees F., pulse 110.

December 20, temperature 100.8 degrees F., pulse 106.

December 21, temperature 99 degrees F., pulse 80. Trace only of albumen found in urine. Patient made a slow recovery.

Case 3.—Mrs. H., age 27; eruption limited to the face. Bullæ had formed on the cheeks; considerable edema about the eyes. Patient was slightly delirious. At 9 A.M., temperature 103 degrees F., pulse 100; ordered pure guaiacol painted over the face. At 12 M., temperature 100 degrees F. At 2 P.M., 99.5 degrees. At 5 P.M., 100.5 degrees. At 8 P.M., 101 degrees, F., when the nurse was obliged to paint the face again. Guaiacol was applied twice a day for the five following days. Temperature ranged from 99.5 to 101.5 degrees F., when convalescence was established. No albumen found in the urine on repeated examinations. Patient was discharged cured on the sixth day.

Another case illustrates even more clearly the good effect of this drug:

I was called February 15 to see Mrs. F., age 40 years. I found that she had an erysipelatous rash covering the entire face, ears and forehead. Bullæ had formed on the cheeks and upper lip. Her temperature was 103 degrees F., pulse 120; dry brown tongue, teeth covered with sordes, bowels constipated; had two chills previous to my visit. Ordered hydrargyri chloridum mite and sodii bicarbonas, aa gr. 5 morning and evening for the bowels; and painted the face with pure guaiacol, from which the patient experienced marked relief. On the following day, at the time of my visit the patient was having a decided chill. I at once applied guaiacol and immediately the chill began growing less intense and within five minutes it entirely ceased. This treatment was repeated on subsequent occasions with the same happy results. Each chill being aborted by the guaiacol applied externally over the affected surface. February 18, patient had been delirious the previous night. Temperature 103 degrees F., was reduced in one hour to 101 degrees F. by guaiacol, applied externally.

February 19, temperature 101 degrees F.

February 20, temperature 98 degrees F.

February 21, temperature 99 degrees F. Convalescence now seemed established and progressed rapidly, much faster than is usual in such cases.

Dr. J. E. Rhodes has kindly permitted me to mention a case similarly treated by him, in which the facial erysipelas followed an intense inflammation of the nasal mucous membrane. The temperature which reached 105.2 degrees F. was promptly reduced. On one occasion profuse perspiration and marked alleviation of the symptoms immediately followed the application. This case ran its course in one week.

The chief points of interest in these cases are:

1. The short time that elapsed between the application and the resulting relief.

2. Repeated trials on the fourth case showed that a chill could be aborted by the external application of guaiacol.

3. Except in cases of extreme irritability of the skin, the application of pure guaiacol does not cause pain. In such cases the guaiacol may be diluted with alcohol, olive or any of the fixed oils to the desired strength.

4. The amount of guaiacol employed varied from 20 to 30 minims.

5. As might be expected, such a powerful effect was not without its drawbacks. In two cases I found a subnormal temperature. These figures suggest their own caution.

The action of guaiacol in controlling chills and fever, as in Case 4, I am inclined to believe is due to an anesthetic action on peripheral nerve endings. Absorption by a skin the seat of inflammatory changes is necessarily slow, and could not account for the immediate fall of temperature noticed in these cases. Experiments have demonstrated that the temperature is not affected in animals if the site of the application is previously anesthetized. Guinard bathed the hind limbs of two rabbits with guaiacol; in one, the sciatic nerve was cut four days before. Here the application caused no fall in temperature, while with the rabbit with nerves intact, the same fall was observed as before.

The same author in the *Province Medicale* for February 17, states: That if the parts are enveloped after the application, in two or three hours guaiacol may be found in the urine; and has drawn the following conclusion from his experiments: That guaiacol can penetrate through the epidermis; that this penetration appears to be the result of an absorption of the vapor; that the envelopment of the painted regions—thus keeping the vapor in contact with the skin—increases the proportion of guaiacol in the urine.

Dr. E. F. Ingals informs me that after my report to

him of the beneficial effects of guaiacol in erysipelas, he applied it in two cases of erysipelatous inflammation of the face associated with rhinitis; and in both cases succeeded in reducing the inflammation speedily.

I have for six months been using guaiacol locally to relieve the dermatitis of the arm, following vaccination, in which I found marked constitutional symptoms. These were generally relieved by one or two applications of 15 or 20 minims.

In regard to its action on the course of the disease, I am not prepared to state positively. In all cases convalescence began not later than the sixth day, although the disease was very extensive in three cases. Albumen was found in the urine of only one patient. Delirium was present in two cases. I am therefore inclined to believe that convalescence was somewhat hastened in all these cases.

After having treated numerous cases by the various methods advocated by different authors, I believe guaiacol to be the most efficient therapeutic agent that we possess at the present time. It is certainly preferable to any of the so-called antipyretics and anodynes usually used to reduce fever or to control pain.

36 Washington Street.

CLINICAL HISTORY OF THE CASE OF PRESIDENT JAMES ABRAM GARFIELD.

BY ROBERT REYBURN, A.M., M.D.

PROFESSOR OF PHYSIOLOGY AND CLINICAL SURGERY MEDICAL DEPARTMENT HOWARD UNIVERSITY, WASHINGTON, D. C., AND ONE OF THE ATTENDING SURGEONS IN THE CASE OF PRESIDENT GARFIELD.

(*Continued from page 582*).

The President was more restless than usual last night being evidently excited by the anticipation of the journey. This morning at 5:30 A.M. his temperature was 99.8; pulse 118; respirations 18.

September 6 at 6 A.M. the President was tenderly lifted by the devoted friends, who had nursed him through his long and weary illness, and in company with his physicians, he was carried on a stretcher to the outer vestibule of the White House. Twice while being carried he waved his hand in recognition to those of his household he was leaving behind. The bed he had just left had preceded him. He was immediately placed upon it without the least apparent discomfort. The President seemingly enjoyed the proceedings until the car was reached. The hour was fortunately too early for any great congregation of people, yet many who had heard of his intended removal were present on the streets. In perfect silence with men guarding the heads of the horses (which by the way, were not attached until the President was safely in the wagon and were detached the moment the car was reached), we slowly wended our way to the waiting train. Twelve soldiers grasped the wheels of the wagon, as the horses were detached, and rolled it to the car containing the bed, to which the President was then transferred without the slightest disturbance. We left Washington with the President at 6:30 A.M. Owing to the admirable arrangements of the Pennsylvania Railroad Company, and to the ingeniously arranged bed designed by Mr. T. N. Ely for the use of the President, he suffered comparatively little and bore the fatigue of the journey remarkably well. During the journey his temperature and pulse were taken occasionally, and the effect was noted of the varying rates of speed upon the comfort of our patient. The minimum of unpleasant motion seemed to be secured when the train was going at the rate of sixty miles per hour. Through that long hot afternoon no sound of bell or steam whistle was heard either from our own, or from the large number of trains we passed. It was indeed a strange and affecting journey, and as we silently sped along it almost seemed as if we were being transported by some invisible and noiseless force to our destination. At every station we were met by silent multitudes, who with uncovered heads greeted us, but spoke not a word. The car assigned for the use of the party contained besides the President, Mrs. and Miss Garfield, Mrs. Rockwell and Miss Rockwell, Mrs. Dr. Edson, Professor Agnew, Dr. Bliss, Surgeon-General Barnes, Dr. Woodward, Dr. Reyburn, General Swaim, Colonel Corbin, Colonel Rockwell, Secretary Brown and the two family servants.

The President seemed to enjoy the rapidity of the motion, and when the train was going at its greatest speed of over sixty miles an hour and he was asked if the motion was uncomfortable, he smiled and said: "Let them go." During the last hour of his journey he showed symptoms of exhaustion, which would have prevented his making any longer journey, had such been required to reach his destination.

The train reached Elberon at 1.09 P.M. A temporary railroad track had been laid from the railroad station at Elberon to the Francklyn Cottage which had been generously placed at the disposal of the President by Mr. Francklyn. On reaching the steep grade near the cottage the cars were detached from the engine and pushed by hand to the side entrance of the cottage, and from thence he was carried to the room in which he passed the remaining days of his life.

September 6, 6:30 P.M. During the last hour of the journey the President complained a good deal of fatigue, and after his arrival was feverish and restless. At present his temperature is 101.6; pulse 124; respirations 18.

September 6, 10:30 P.M. The President is sleeping quietly, and his fever which was evidently due to the exhaustion resulting from his journey, is gradually subsiding.

September 7, 9 A.M. The President slept the greater part of the night, awakening, however, as often as it was necessary to give him nourishment, which he took and relished very well. The fever reported in last night's bulletin had subsided by 11 P.M. This morning his temperature is normal, and he appears to have quite recovered from the fatigue of yesterday's journey. At the morning dressing the parotid abscess was found to be doing well. The visible part of the wound looks somewhat better.

September 7, 9 A.M. Temperature 98.4; pulse 106; respirations 18. September 7, 6 P.M. Temperature 101; pulse 108; respirations 18.

The sight of the ocean seemed to give the President great delight. He said to those about him, "it was refreshing to get where he could look at the sea." The room where he was placed is large and handsomely furnished. When the President was taken into the room he at once noticed that his bed was so situated that he could not look out at the sea. He immediately insisted that a change should be made

Entered according to Act of Congress, May 29, 1893, by ROBERT REYBURN, M.D.

in the furniture of the room, by which he would have an unobstructed view of the ocean, which was accordly done.

September 7, 6 P.M. Notwithstanding the exceptional heat of the weather (the thermometer in his bedroom rose to 94 (F) at half past three this afternoon) there was a breeze most of the day, so that the President was comparatively comfortable. He has taken his nourishment regularly, and has slept well at intervals during the day. At 12:15 P.M. his temperature was 98.4; pulse 114; respirations 18.

September 8, 8:30 A.M. The President was restless and wakeful during the early part of the night, but after midnight slept well until morning. His general condition appears to be more encouraging.

September 8, 9:30 P.M. Temperature 98.7; pulse 104; respirations 18. September 8, 12 M. Temperature 98.4; pulse 94; respirations 17. September 8, 6 P.M. Temperature 99.1; pulse 100; respirations 18.

September 8. The President, desiring to diminish the number of his medical attendants, Surgeon-General Barnes, Dr. Woodward and Dr. Robert Reyburn retired from the case on the evening of September 7. Dr. Bliss remains in charge of the case and the services of Professor Agnew and Professor Hamilton are retained as consulting surgeons. The wear and tear of the attendance upon the President has been perfectly frightful, and was beginning to tell very severely upon all the surgeons who had been on duty in the case. The constant fever of excitement we were under, the continued loss of rest we sustained in our endeavors to do all that we could to save the President's life, had nearly worn us all out. As before mentioned Dr. Bliss never slept a night in his own house from the time the President was shot until his death (except one night when he was compelled to go home on account of an attack of blood-poisoning from a cut received during the dressing of the President's wound). The consulting surgeons were not usually called on for duty at night, unless in case of an emergency; this left the chief burden of the night duty upon Dr. Bliss, and in a less degree upon Dr. Woodward and myself. Dr. Woodward and myself slept alternately one night at the White House and the other night at our homes. The room the surgeons occupied was immediately northeast of the one occupied by the President, and we relieved each other, so that he was never without medical assistance close at hand. During the latter days of the President's illness the weather was extremely sultry and oppressive, and after our broken rest each night, in the morning we could hardly muster energy enough to rise and begin our labors of the day in the President's room. It was the custom of Dr. Bliss to have brought over from his own house early each morning to our room in the White House some excellent coffee. After we had each drank a couple of cups of this strong black coffee, we were able to commence our day's work. It is probably known to most of the profession that all of the surgeons who were on duty in the case of President Garfield are dead except myself. It is my firm conviction that the lives of all these surgeons were materially shortened by their labors in his behalf. Dr. Woodward died a comparatively young man, and every one who knew Dr. Bliss will agree with me in the opinion that he would in all probability be living to-day if he had never taken charge of President Garfield. It was perfectly apparent to all the attending surgeons that the President's life could not be prolonged for more than a few days after the date of his trip to Elberon. There was a perfect unity of sentiment among the surgeons in the feeling that it was our duty to remain and minister to the President as long as he desired our services, at the sacrifice of our health, or even of our lives. When, however, it was deemed best to discontinue our services, it was with a feeling of the most grateful relief that we turned our faces homeward.

September 8. After the arrival of the President at Elberon the following bulletin was issued:

September 8, 6 P.M.

The President's temperature was 98.4; pulse 94; respirations 17. At the evening dressing, 5:30 P.M., his temperature was 99.1; pulse 100; respirations 18. He has taken a liberal amount of food (both solid and liquid) with apparent relish. By special request of the President it has been made our duty to say in this public manner, to Surgeon-General J. K. Barnes, Surgeon J. J. Woodward, and Dr. Robert Reyburn that in dispensing temporarily with their services as his medical attendants he was actuated only by a wish to relieve them from a labor and responsibility, which in his improved condition he could no longer impose upon them. Both the President and Mrs. Garfield desire us to express to these gentlemen personally, and in this public manner our high appreciation of the great skill and discretion which they have constantly exercised as associate counsel in the management of his case up to the present time

(Signed) D. W. BLISS,
FRANK H. HAMILTON.

PRESIDENT GARFIELD'S SOJOURN AT ELBERON.

September 9, 8:30 A.M. During last night the President was restless until after midnight when he fell asleep, and though occasionally awakening for a time, yet he slept a good deal. The conditions of the parotid gland and wound are improving. The enemata and stimulants have been suspended during the past thirty-six hours. On the whole, the past twenty-four hours give evidence of favorable progress.

September 9, 8:30 A.M. Temperature 98.4; pulse 100; respirations 17. September 9, 6 P.M. Temperature 98.8; pulse 100; respirations 18.

A change was made to-day in the watchers upon the President; the four now on duty are Dr. Boynton, General Swaim, Colonel Rockwell and Mr. C. O. Rockwell. Two of these will be on duty each alternate night, and the day watch will be divided into periods of two hours each. The absence of the three surgeons who have been relieved from duty in the President's case is much felt by the remaining three surgeons, who are compelled to sit up with their patient each night, and get what chance sleep they can during the early morning or evening. This morning though cloudy and hazy is comparatively cool and refreshing. A gentle breeze is blowing from the sea, and the day is a decided improvement over the first three or four days of the week. The President's cottage has been rendered comfortable by fires made in the grates, so that no inconvenience will be felt by him should the temperature continue to decrease.

September 9, 1:25 P.M. The President is now sleeping quietly. The thermometer at noon registered 75 degrees (F). He expressed a desire to see this morning any of the members of the Cabinet who wished to call upon him.

September 10, 9 A.M. The President slept a good deal during the night awakening at intervals of one-half to one hour. There is a perceptible increase of strength with an improved condition of the digestive apparatus. The tumefaction of the parotid gland has entirely disappeared, and the suppuration from it has greatly diminished. The wound continues to

improve, and presents a more healthy appearance. He takes a fair amount of nourishment, and seems to digest it well. The surgeons agreed to allow the members of the Cabinet to visit the President, but to limit their stay to a few minutes. Secretaries Windom and Lincoln are to call this evening.

September 10, 9 A.M. Temperature 99.4; pulse 104; respirations 18. September 10, 12 M. Temperature 98.5; pulse 100; respirations 18. September 10, 6 P.M. Temperature 98.7; pulse 100; respirations 18.

The President's condition on the whole is not as favorable as it was yesterday. In the morning his temperature and pulse were higher but they diminished towards evening.

September 11, 8:30 A.M. Temperature 98.8; pulse 104; respirations 19. September 11, 12 M. Temperature 100; pulse 104; respirations 20. September 11, 6 P.M. Temperature 100.6; pulse 110; respirations 20.

The daily febrile rise occurred later than usual last night, and was prolonged over the greater portion of to-day. This was evidently due to a circumscribed area of lobular inflammation of the lower part of the inferior lobe of the right lung. The portion of the lung inflamed is quite limited in extent and the inflammation seems to be stationary, as it has not progressed during the day. The President's expectoration is more muco-purulent, and is rather scanty. No enemata are now given him, as he takes with relish a sufficient supply of both solid and liquid food. The President is bright and cheerful, and perfectly cognizant of all that is going on around him.

Dr. Bliss took his temperature at about 5 P.M. and found it to be a fraction over 100 (F). Dr. Agnew examined the President and said he thought the figures must be wrong, and requested that another test be made. Dr. Bliss replaced the thermometer, and as he did so the President said with a smile: "The figures are too high for you, are they? You wish to get them lower, if possible, I suppose."

In addition to his other food he has taken during the day three tablespoonfuls of brandy in the shape of milk punch. At the evening dressing quite a large slough of connective was removed from the region of the parotid gland.

September 12, 9 A.M. Temperature 98.4; pulse 100; respirations 18. September 12, 12 M. Temperature 99.2; pulse 106; respirations 18. September 12, 5:30 P.M. Temperature 98.6; pulse 100; respirations 18.

The President slept soundly last night from 10 P.M. to 2 A.M. this morning, when he awoke and took some nourishment, and immediately fell asleep and did not awake until 4 A.M. At that hour he was sponged off, and in the course of a few minutes fell asleep again, and did not awake until 7 A.M. at which time he apparently felt quite refreshed and rested. The suppuration from the parotid gland has almost entirely ceased, the openings from which the pus discharged are rapidly healing. The lobular inflammation of the lower portion of the right lung (broncho-pneumonia) spoken of yesterday seems to be the result of the parotid inflammation extending by continuity along the mucous membrane of the pharynx, larynx, trachea and bronchi. The cough is less to-day, and the expectoration has materially diminished. The President seems to feel better to-day; he has taken an ample supply of food without discomfort, and has had several refreshing naps. His situation, however, is considered sufficiently grave to cause a postponement by the members of the Cabinet of their proposed trip to the White Mountains. Postmaster-General James goes to New York this morning, but will return this evening.

September 13, 8:30 A.M. Temperature 99.2; pulse 100; respirations 20. September 13, 12 M. Temperature 98.8; pulse 100; respirations 20. September 13, 5:30 P.M. Temperature 98.4; pulse 100; respirations 20.

The President passed a good night, sleeping most of the time. At 10 A.M. this morning the President was lifted from his bed to a reclining chair which he occupied for half an hour. He said: "This is delightful; it is such a change." He was placed in a position commanding a full view of the ocean, and his body raised to an angle of forty-five degrees. During the morning his pulse was irregular, and varied a good deal, but when he became quiet, settled down to the figures of the morning bulletin. The atmosphere is clear to-day, and the weather is cool and refreshing. The President is expectorating a good deal of muco-purulent material, and in his condition of great weakness he becomes much exhausted in his efforts to clear his throat of this tenacious matter. During these paroxysms of coughing his breathing becomes very rapid, and his pulse much accelerated. General and Mrs. Grant were here to-day, and in the evening General Grant spent some time in conversation with the surgeons anxiously inquiring concerning the exact condition of the President.

September 14, 8:30 A.M. Temperature 98.4; pulse 100; respirations 19. September 14, 12 M. Temperature 98.8; pulse 104; respirations 20. September 14, 5:30 P.M. Temperature 99.2; pulse 112; respirations 21.

The President passed a quiet night, sleeping comfortably the greater portion of the night. The day is bright and cheerful, and the President is in good spirits. In addition to the usual nourishment given him he ate a little fruit for breakfast. Soon after the morning dressing Secretary Lincoln was admitted to the sick room. He had not seen the President since the afternoon of the day on which he was shot, and was greatly distressed by his emaciated appearance and exhaustion. Drs. Bliss and Hamilton have decided on account of the great weakness of the President not to transfer him to the invalid chair unless he specially requests it. The President said just now, "that yesterday's experience at the window where he could see the green grass, the soldier walking his beat, the men and women in the summer house and walking along the beach, the fishermen at sea, the vessels on the ocean, and the bathers in the surf made him feel for the first time since he was shot that he was himself again."

Five pustules of acne have appeared upon the back of the President, and were opened to-day. This gave him much relief as they were quite an annoyance to him. September 14, 12:30 P.M. At the urgent request of the President he has been transferred from his bed to the reclining chair and is enjoying the scene very much. The weather continues very pleasant and invigorating, the atmosphere is perfectly transparent excepting over the ocean, where there is a beautifully tinted haze prevailing. After he had comfortably settled down in his chair he expressed

his sense of gratification, and remarked: "This should have been commenced three weeks ago." He remained in his chair about an hour and a half, and slept a portion of the time. He did not seem specially fatigued by the transfer or change of position though he had a slight febrile rise of temperature during the evening.

September 15, 8:30 A.M. Temperature 98.4; pulse 104; respirations 20. September 15, 12 M. Temperature 98.9; pulse 102; respirations 21. September 15, 5:30 P.M. Temperature 99.2; pulse 104; respirations 21.

The President slept until 3 A.M. when he was wakeful for a period of two hours, during which time his pulse rose to 120 per minute, but without the marked elevation of temperature which has characterized the febrile disturbances hitherto. After this time he slept quietly until morning. He had two rigors during the night. He expectorates a good deal, and is considerably exhausted by his paroxysms of coughing. His voice is weaker this morning, but he persists in talking, and thinks he is improving. He shows as much anxiety to know what the daily bulletins say concerning his condition as the general public does, and comments upon them, and discusses his general condition. Dr. Bliss took the 11 A.M. train for New York to-day, and will return at 5 P.M. and be present at the evening dressing of the wound. This is the only time since the President was shot that Dr. Bliss has been absent from his patient for any length of time. Drs. Agnew and Hamilton remained in charge of the President during his absence. Dr. Bliss said on his return: "Mr. President, I have been away for a few hours as you know, but they seemed like an age." He replied, "Doctor, you plainly show the effect of all this care and unrest, and I am glad you were forced to take this temporary relief. Your anxious watching will soon be over."

While the temperature of the President is not high this evening (99.2) yet the increasing frequency of his pulse and respirations, and more than this the excessive exhaustion he displayed, were sure tokens that the end of the weary struggle was near at hand. During the morning he took his liquid food and a small portion of steak. While his mind is usually clear, yet on first awakening from a sound sleep, he wanders a little for a short time.

September 15, 6 P.M. The President has passed the day quietly, sleeping a little, and coughing occasionally, the expectoration being purulent. He was placed on his reclining chair for three-quarters of an hour, and seemed to enjoy it very much.

September 16, 8:30 A.M. Temperature 98.6; pulse 104; respirations 21. September 16, 12 M. Temperature 99.8; pulse 116; respirations 21. September 16, 5:30 P.M. Temperature 98.6; pulse 104; respirations 21.

The President's condition causes a general feeling of despondency. During the past forty-eight hours he has made no favorable progress, and during the last twenty-four hours there has been a perceptible loss of strength. The process of repair in the wound has come to a standstill, and the discharge from it is thin and watery, and is small in quantity. The amount of lung tissue involved is considerably greater than it was forty-eight hours ago, and he is expectorating considerable quantities of purulent material. His attacks of coughing do not recur as frequently as they did a few days ago, but are more severe and exhausting. The febrile rise during last night was not as high as it has usually been lately, but the pulse was quite frequent, at one time reaching 180 per minute. Three small bed-sores which had been previously healed have again made their appearance owing to the President's debilitated condition. His mind is not so clear to-day, and he shows evidences of hallucinations. A slight febrile rise occurred at 11 A.M. which had entirely subsided by 2 P.M. Nourishment and stimulants were given him freely during the day. Owing to the unfavorable news concerning the condition of the President, Postmaster-General James, Secretaries Hunt and Windom with their wives are now on their way from Boston to Elberon.

(To be continued.)

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

The Third Annual Meeting Held in Chicago, Sept. 12, 13 and 14, 1893.

AUGUSTIN H. GOELET, M.D., President.

(Concluded from page 592).

THE PRIMARY ACTION OF THE GALVANIC CURRENT—IT INCREASES THE AMOUNT OF OZONE IN THE BLOOD AS SHOWN BY CHEMICAL TEST OF THE BLOOD IN THE ARTERIES—WITH OUR THEORY OF ANIMAL ELECTRICITY.

This occurs in the capillaries. Until these are reached the pressure of the oxygen in the plasma restrains the hemoglobin from giving its oxygen. Here in the liquid moistening the fibrillæ of muscle that surround the terminal capillaries where the transfer of oxygen in reality begins, the tension of the oxygen is almost nil, since the tissue elements are steadily taking up the gas from the lymph surrounding them, and the plasma continues to give up oxygen through the walls of the capillaries until the tension falls too low for it to longer do so; then it is that a portion of the oxygen of the hemoglobin is freed and is dissolved in the plasma to take the place of that oxygen which it has given up and which in turn has passed out into the lymph on the other side of the capillary wall. This interchange continues until the pressure of the oxygen in the lymph equals that of the oxygen in the plasma, by which time the venous system of capillaries, the return circulation, has been reached.

One of the strong indications of the action of the galvanic current on the blood is the probability that it facilitates this transfer of oxygen to the tissues in active form, both chemically and physically. By rearranging the atoms of some of the molecules of oxygen in the plasma the volume of the oxygen held in solution is reduced, and the oxygen of the hemoglobin is at once transferred to the plasma instead of being doled out, as it were, to suit the constantly varying pressure changes that go on as the blood completes its circulatory round. This being the case, the transforming process is undoubtedly ushered into existence through the polarizing property of the animal electricity, of which we shall speak further on.

How far chemic change is wrought upon the diffusible solids of the blood by the generation and presence of such an increased amount of ozone we are unable to make precise answer, and we leave it to the thoughtful investigation of those observers who may take interest in our work and who are blessed with a more acute knowledge of physiologic chemistry and a more completely equipped laboratory than it is our good fortune to possess. To our mind there seems little question of the occurrence of just such a change as we have described. Our analyses thus far, have remained within the sphere of quality; it remains for others to continue in the more exact line of quantity. Reasoning by analogy, the galvanic current acts precisely upon the oxygen in solution in the plasma as it did in the jar filled with O_2 through which Schönbein passed the current and observed its transformation into ozone.

There is but one possible action of the ozone on the blood. It must hurry on the transfer of the oxygen to the tissues,

call into existence the oxidation of those constructive elements which the tissues require for their revivification. Doubtless these changes are more extensive than we have been able to determine.

Other Factors to be Considered.

The experiments of Guy-Lassan should teach us a valuable physiologic lesson. From his laboratory we feel that we can carry them over to that storehouse of chemic energy—the human body; and observe changes corresponding to those he observed in his jars filled with gases possessed of great affinity for one another which, however, remained quiescent and inactive until he prodded them with the stimulus of a galvanic current, which, as it passed through the gases, spurred into action, or awakened, as it were, their slumbering affinities, polarized their molecules and ushered into life the new something, the result of the three great potent factors—polarization, chemic action and affinity. We have tried to impress upon you the importance of these three conditions, for upon them depend all the chemico-physiologic changes—in short, all changes that go on within the human body.

We have observed them time and again in the course of our experimenting, and we have subjected them singly and together to the most rigorous test of verification.

Our observations point to the one conclusion, and that is, that chemic action, the feeder of life, can not go on unless there is present an electrical force, an energy that can polarize the molecules of the combining elements and prepare them for combining action. Affinity, catalytic force, the phenomena of contact in themselves are impotent without that ever preceding factor—molecular polarization.

It is the metabolism, the anabolism, the katabolism, the all, and more were it possible, of that cardinal nourisher of tissues, that feeder of life, the blood.

Animal electricity, and the important part it plays, we will reserve for a later chapter, and pass over to general details of our experiments upon the blood of the living animal in its normal state and under the stimulus of the galvanic current.

Preliminary Tests.

For a period of seventy-two hours before entering upon the examinations, we hung in various portions of our laboratory slips of specially prepared paper, saturated with a solution of the iodid of starch, and others moistened with tinct. guiac. These, as we all know, are acknowledged tests upon ozone. We kept the papers under careful observation, examining them in strong light at intervals of an hour, and as there was no evidence of a reaction at the end of the allotted time, we were justified in concluding that the atmosphere of the laboratory was free from ozone and the other gases which act upon starch and guiac. Next we directed our attention to nitrous compounds in the air, for the reason that they—if they exist in the slightest appreciable quantity—give us a reaction very much like that of ozone, and their presence must be excluded in order to give any sensitive test for ozone practical chemic value.

The test we applied for nitrous compounds is an extremely useful one, unusually sensitive, and we give its chemistry for the benefit of those who may desire to repeat our experiments. It is named Gries' test, after its discoverer. He observed that in sulphanilic acid and naphthylamine we have a reagent which acts on nitrous acid, but not on H_2O_2 or O_3. This discovery Gries made while engaged in studying the action of diazo-benzene-sulphonic acid on naphthylamine.

He obtained his diazo-benzene-sulphonic acid by treating sulphanilic acid with nitrous acid, and calls attention to the extreme delicacy of the reaction, minute traces of nitrous acid sufficing to produce a dark red color in the presence of dilute sulphuric acid. The colored substance formed is an amido-azo derivative of the formula[2] $C_4H_5(So_3H)N=N\,C_{10}H_6NH_2$ called azo-amido-naphthalene-benzene-sulphonic acid.

Prof. Slosvay,[3] of the Polytechnic School at Buda-Pesth, increases the sensitiveness of the reaction by substituting acetic for sulphuric acid, and he can detect with it nitrous acid in aqueous solution in a dilution of one part nitrous acid to one thousand million parts of water.

The formula of the test is: $C_6H_4NH_2(So_3H)+C_{10}H_7NH_2+HNo_2=C_6H_4(So_3H)N=NC_{10}H_6NH_2$ sulphanilic acid and naphthylamine.

[2] Ber. d. Chem. Gesell., 12, 426, 15, 2191.
[3] Bulletin de la Societé Chemique de Paris, September and November, 1889.

We availed ourselves of Slosvay's modification of Gries' formula.

A tank of a capacity of fifty gallons at a pressure of thirty pounds was filled with air from the laboratory. The air was sent through an air meter which registered one liter per minute, and from this into a test tube containing distilled water, through which it was allowed to bubble for ten minutes and then tested.

There was no immediate reaction, and only after half an hour's standing did we observe a tinge of color; so faint, however, as to be almost imperceptible in ordinary light. In order to see it, we were obliged to back the test tube with pure white filter paper and hold it to the sunlight.

In view of the delicacy of Slosvay's reaction, it was fair to assume that the quantity of nitrous acid in the air was so infinitesimally small that for practical purposes it could have no effect in interfering with the subsequent tests for ozone.

Ten liters of oxygen were treated in the same manner. The oxygen was first subjected to two washings in distilled water without giving any reaction to the nitrous acid test. The remaining forty gallons which were afterwards liberated in the laboratory were washed in caustic soda and dried with sulphuric acid (C P) and bubbled through distilled water. There was no reaction with Gries' test, thus showing that the gas was absolutely pure and free from admixture with nitrous and other gases.

This concluded the preliminary testing. The object of the careful analyzing of the air of the laboratory as you may already divine, was to devise means of testing for ozone in the open, and to avoid the less satisfactory method used by Schmitt, who treated his ozone in a balloon from which the oxygen had been removed as nearly as possible to do so, by means of carbon dioxid, or handling it in a similar glass receiver, from which all air had been exhausted, which was the manner in which Kühne conducted his experiments.

For several days work was suspended and resumed again Monday, August 21. On that morning we were treated to a genuine surprise, that caused us to ponder for a while. Dr. J. C. Dittrich, who, perhaps ranks first among the authorities on ozone in this country, and who kindly assisted us in the chemic portion of our work, prepared several specially sensitive test papers, which, on being moistened with distilled water, at once gave a reaction. The air of the laboratory was evidently charged with ozone, and we were at a loss to account for its presence. Speculation was soon set at rest when we recalled the violent thunder storms of the Sunday and Saturday before.

The ozone was the result of the intense static discharges of those days, and the amount that had been generated by the great Pluvius certainly was enormous and beyond measure. For that day and the three succeeding ones, work had to be deferred, with all the preliminary testing for naught.

On the following Thursday, on resuming operation, no ozone or nitrous acid was detected in the laboratory. The preliminary tests on being repeated gave results as already stated.

Testing for Ozone in the Blood.

A rabbit that had been well fed for a week was the subject of investigation—it was a big animal, in fine spirits, and weighed four pounds three ounces. It was brought into the laboratory, and both carotids cut through and the blood collected in a sterilized glass receiver. In all, sixty grams were extracted and defibrinated with sterilized glass rods. The operation requires nine minutes, and the fresh serum was subjected to test.

The serum was diluted with distilled water, in the proportion of one part of serum to four of water.

With the iodid of starch an immediate reaction was observed in the open air, and the same reaction faint at first, but gradually deepening in blue color, showed under a bell glass.

Testing with guiac. tincture of the officinal strength, which we reduced by adding an equal volume of absolute alcohol, responded more quickly to reaction of ozone. The blue ring around each drop of blood was marked and sharply defined. The same reaction continued when the test was made under the bell glass, and gradually approached its maximum of intensity at the end of half an hour, when, to all appearances, the ozone became completely exhausted.

The fibrinous clot, with the entrapped corpuscles, was likewise tested, and gave a far more distinct and marked reaction than the serum.

It was evident at a glance that the corpuscles contained a far larger amount of ozone than the plasma.

The remainder of the defibrinated blood, about forty grams, which had been kept in a well-covered jar, was next subjected to electrification for five minutes.

A galvanic current of ten volts and fifteen milliampères was sent through the fluid. The electrodes used being strips of platinum an inch long and three-eighths of an inch wide.

In six seconds the meter dropped to eight milliampères, and the registration which was recorded at the end of each minute read as follows:

1	minute	7	milliampères
2	"	5	"
3	"	4.5	"
4	"	3.75	"
5	"	3+	"

Testing with iodid of starch and guiac. tincture showed the unmistakable increase of ozone. The rings around the drops of blood were of a deep blue hue, and the reaction continued with much greater rapidity than was the case with the unelectrified blood. As quantitative test was out of the question, Dr. Dittrich and my colleague made an approximation of the intensity of the action by comparing the rapidly deepening ring of blue with the chromatic scale, given by Dr. Fox, in his exhaustive work on ozone. They carefully noted the change of color as it progressed, availing themselves of the most advantageous light facilities, and agreed upon the estimate that the amount of ozone adequate to such reaction must be in the neighborhood of, at the lowest calculation, at least two and one-half times greater than the amount indicated by the reaction in the case of the unelectrified blood. The clot deposited around the electrode at the positive pole gave a more animated reaction, the ring of blue almost approaching indigo, showing a most marked increase over the former reaction.

Standing by itself this test of the blood outside of the body signifies but little, for it is the blood that circulates through the living organism unimpeded with which we have to deal, and in which physiologic conditions alone can be of any value in the study of the action of the galvanic current. Yet withal, when taken in connection with the tests that were afterwards made, the observations form an important link in the chain of evidence that it is animal electricity which is the polarizer of the atoms of neutral oxygen both in the plasma and in the hemoglobin.

Under normal conditions the transformation of O_2 into O_3 is slow and gradual, and the polarization of the neutral oxygen is proportionate to the polarizing force of the existing animal electricity.

Undoubtedly Schmitt, Houzeau, Meisner, Kühne and others were right in their assumptions, but it seems to us that they did not probe deep enough for a solution of the possible origin of this transformation of neutral oxygen into ozone within the human economy. It was due to the polarization of the atoms of the neutral oxygen, but how did it come about?

We have assumed in starting out upon the experiments the results of which form the title of the paper we have the honor of presenting to your consideration, together with the more exact details which we hope to announce at some future day, step by step, with the view of adding some light to the question, that this generation of ozone admits of a satisfactory scientific explanation.

During the years that my colleague and myself devoted to the study of ozone within the body, we have always regarded it with awe and veneration. We have woven theory after theory only to find that the strands broke precisely within the limits of the reasoning of the great observers to whom we owe all we know of ozone, and that to us as physiologists is indeed little.

That ozone can be found in the blood nourished by gases that contain no ozone is a fact beyond dispute, yet the problem of its generation is a problem that at first sight offers no easy solution.

In looking over the field of possible sources to explain this source of the formation of ozone it fastened itself upon us that one great factor that might afford an explanation had been overlooked. It was animal electricity, and we have tried to explain its function. There seems to be but one deduction to draw from the most careful observation and that is, that it is animal electricity upon which not only the polarization of the atoms of oxygen but all molecular polarization and chemic action in the body depends.

We believe that the transformation of oxygen into ozone within the body is brought about by this very animal electricity, which polarizes the neutral oxygen to such a degree that a portion of the atoms rearrange themselves, attract and repel each other under this polarizing force until we get the ozone which we detect upon analysis. The function of the ozone is apparent to all of us. It gives the oxygen increased power to form combinations with the tissue elements and promotes oxidation.

This polarization of the oxygen seems to take place just as the gas touches the tissues where the conditions are favorable to such an action and where it closes circuit with electricity in the human frame. The unaffected molecules of oxygen under the vigorous spurring of this ozone become vitalized as it were, and at once begin the search for their affinities in the tissues and enter into combination with them.

The proof of this reasoning seems to us to be apparent from the fact that we have been able to appreciably increase the amount of ozone in the blood by passing very weak currents of galvanic electricity through the body, and it is the underlying theory upon which we based our experiments and which we hope to make clear to you.

Before dismissing this portion of our paper and passing over to an account of our experiments upon the blood of the living animal electrified by a current of galvanic electricity, permit us to advance another theory which we regard as justifiable from our findings, and we do so only in the hope that it will give rise to careful discussion, for it is at variance with some of our pet physiologic theories; it is

That oxygen in the blood stimulated by the polarizing power of animal electricity, and more so under the stimulus of the galvanic current enters into combination with the hemoglobin of the corpuscles with a partial transformation into ozone, and that in loosing its combining bonds it undergoes a further partial transformation into ozone.

Experiments on the Electrified Animal.

This brings us to a record of the experiment upon the living animal with the galvanic current.

The animal chosen was also a rabbit, which was prepared by being fed on fresh vegetables for several days. He was in prime condition and was allowed to run at large until he was required for use. The batteries, two of the ordinary twenty-four cell medical machines of the Edison-Lalande pattern were used. The batteries were carefully tested cell by cell and the current measured with both volt and milliampère meter. A coil of a resistance of 400 ohms which had been placed in the circuit was removed after the measurement had been taken and we decided upon a current of a strength not to exceed forty milliampères.

Two cuts about half an inch apart were made into the skin of the animal and into these and for a distance into the body of the muscle, the platinum electrodes used in the previous experiment were inserted and a current of twenty volts turned on. The meter showed forty-four milliampères. This dropped quickly down to forty-one milliampères. The reading of the meter during the five minutes that the current flowed was as follows:

1	minute	40.5	milliampères.
2	"	38.	"
3	"	37.+	"
4	"	35.8	"
5	"	35.—	"

At the end of five minutes both carotids were cut through and thirty-five grams of blood were drawn into a sterilized glass vessel and defibrinated as before with sterilized glass rods.

It was observed that the blood was of a brighter scarlet hue than that which flowed from the arteries of the unelectrified animal. Exposure to the air while the process of defibrination was going on did not affect the bright tint. Defibrination too, was not so easily affected and the fibrin slowly gathered around the rods.

Seven minutes after the blood was shed, a gram of the fresh serum was distilled with two grams of distilled water and subjected to test with both guiac. and starch iodid. The reaction in both instances was almost immediate, a trifle more active with the guiac. The ring of blue around the drops of blood was more pronounced and much deeper and kept on deepening both in the open air and under the bell jar as had been done with the blood from the first animal killed. At the end of twenty minutes the test papers, those saturated with guiac. and starch iodid, three of each variety being exposed to the air and a similar number under bell jars, indicated the termination of the action and they were taken out and carefully compared with the test records of the first experiment which had been preserved in air-tight

tubes. The blue ring was, even upon the most superficial examination, found to be several shades deeper and the ring of reaction more spreading, in some of the drops, almost half an inch wide and distinctly visible to the line of demarkation of chemic action. The librin also gave like results. A far larger amount of iodin had been set free in these tests than in the case of the first analysis. The quantity of ozone to give such reaction according to a most conservative calculation of both Dr. Dittrich and my colleague was estimated to be certainly three times greater than that which gave the reaction from the normal blood.

The increase in the amount of ozone was astonishing and far beyond our expectations. We had anticipated some difficulty in determining the increase if it proved to be trifling, but here we were met by a quantity far in excess of what we had hoped to find in the event of the most successful termination of our searching.

The action of the current on the oxygen in both plasma and corpuscle enmeshed fibrin was evident in the transformation of a portion of it into the more vital form of O_3. That the current had accomplished this transformation, astonishing as it proved to be, was readily to be explained, but not so with the ozone in the normal blood. There was but one explanation for this, the polarizing action of the animal electricity.

Our Plain Views Regarding Animal Electricity.

The existence of animal electricity is acknowledged. The origin and action, however, are the points upon which electro-physiologists are not quite clear. Those who have given the subject some consideration dismiss it by establishing its connection between chemic action, heat and animal electricity. They rest content in discussing the three conditions without attaching the slightest importance to the precedence of one or the other of them. Chemic action we are told evolves heat, and so tissue metamorphoses and oxidation go on. They are satisfied with the evidences of the existence of animal electricity, that it can be measured, and that it is one of the great trinity upon which life rests.

It is in view of this condition of the investigations upon this question that we approach it with much trepidation and fear lest we be charged with being too radical in our deductions; we can almost see doubt written upon the faces of many of this distinguished gathering, and we can almost hear you say: "Well, are you going to settle the question?" Settle the question or not, still we have the boldness to advance a probable solution of the problem, and we ask you to follow closely our experimentation and the deductions we have drawn and based our opinion upon.

We will not take up your time by rehearsing the observations of the various electro-physiologists who have enlightened us in animal electricity. To do so we would in fairness to all be obliged to begin with Matteucchi and so on up to the present day, without omitting a single one for each of the observers has welded a link in the chain of result, and to leave out a link would mean to destroy the integrity of the chain.

Let us for a moment consider the observations of Dutrochet, and we may get a clue to the true function of animal electricity. He observed that if the positive pole of a battery be dipped into pure water and the negative in gum water, endosmosis continued more energetically.

Onimus later on discovered that with a reversal of this order of pole, endosmosis too was reversed. It is but fair, reasoning again by analogy, to assume that the electricity in the body exercises precisely the same physico-chemic action. We have already called your attention to the observations of Gay Lassan. Whenever the so-called catalytic action takes place in the living tissue, is it not equally fair to assume that animal electricity is the prime mover? Can there be any question that electricity, galvanic, with its electrolytic powers, the ready manner with which it decomposes the salts, coagulates albumen in the vessels of our laboratories, has a like action on the tissues and fluids of the living organism?

It is apparent, we hold, that animal electricity not only influences the whole system of nutritive operations, but also directs them.

Time and again we have electrified animals and observed that under certain conditions of electrification, the animals threw off a greater amount of urea and carbonic acid than under ordinary conditions.

Urea and carbonic acid! and what is the significance of such an increase in the waste products?

Nothing more than, and nothing short of increased chemic action, increased tissue metamorphosis, the increased evolution of heat; but the electricity, the animal electricity—that remains unaccounted for.

Dutrochet and Onimus showed us the action of the anode and the cathode in endosmosis, and left us to apply it to the physiology of nutrition. Now let us do so and account for the function of animal electricity if we can. As we have already intimated, the order of action is animal electricity first, and why, because we must have polarity before we can have chemic action and its natural result, heat.

Subject a solution of the iodid of potassium to electrification and you free the iodin. Inject a quantity of this fluid into the blood of a living animal and then subject the animal to electrification, and in a very few minutes starch papers held in contact with the parts surrounding the positive pole, will indicate that the iodin is set free by the action of that pole. Note the transfer of the chemic action from the laboratory to the living body; are the two not singularly alike?

Unfortunately we have not been able to isolate the poles of animal electricity, and hence it is that our tests on animals similarly injected, yet not electrified, give us such indistinct reactions, that we hesitate to announce them as positive results.

Yet all this points to the one conclusion, and the one deduction, that animal electricity comes first; that it is the prime factor in all the processes of change, of chemic action, or otherwise, within the living body. That without its stimulus of polarization, no chemic action can be called into life, and consequently none can go on; and tissue metamorphosis, which is life itself, must cease.

Before concluding, allow us a word or two upon ozone, its physiologic and therapeutic value, which are not under discussion, and are hardly properly to be considered in the limits of this paper. We have dealt with ozone generated from the oxygen within the body, and it is in this form that it plays its so important rôle in the oxidation of the tissues. There seems to be some doubt as to the possibility of introducing ozone in its pristine integrity into the system. It may be a feat within the range of possibility, judging from the voluminous literature upon the subject that has been published only within the past year or more, yet from our experience in handling it, we prefer to regard it as an agent that performs its most useful work upon the field where it is ushered into existence, where nature calls it into life because it is needed to perform important duties.

A paper was read by Dr. William James Morton on

NOTE ON AN IMPROVEMENT IN INFLUENCE MACHINES, AND ON A NEW TRANSFORMER TO BE USED WITH THESE MACHINES.

The improvements related to important points in mechanical construction and to utilizing Dr. Morton's discoveries for converting statical discharges into currents. There are two directions in which influence machines are of use to physicians; one, the spark and its modifications; the other the Morton currents. The former are familiar to all; the latter exhibit the phenomena of high frequency high potential currents now familiarized by the labors of Tesla, Elihu Thomson and D'Arsonval.

As a result of continued medical work for thirteen years with statical machines, the writer had had constructed by the Galvano-Faradic Company, of New York City, a machine which embodied in his opinion every modern advance. It was fundamentally of the Wimshurst-Holtz type; it had eight revolving plates, each one thirty inches in diameter; it was provided with a simple device, by aid of which the physician could employ at will the spark, spray, static induced and the transformer current. In its present shape the new machine answered every purpose in medicine to which influence machines could be put. It was known as the Morton-Wimshurst-Holtz machine.

Dr. Morton then exhibited the transformer, which consists of two flat spirals of wire placed in an ebonite box containing oil. The static induced current is led into one coil and from the other the current passes to the patient. This current produces a peculiarly vigorous, but painless muscular contraction.

Dr. Morton also read a paper on

NOTES ON MECHANICAL VIBRATIONS ACTUATED BY ELECTRIC MOTORS WITH PRESENTATION OF THE INSTRUMENT.

A helmet was shown, such as was employed by Charcot in the treatment of disease by means of rapid percussion. The vibrations are produced by a small electric motor, called "The Premier," which can be procured almost anywhere at a cost of three or four dollars. By an eccentric action it is made to impart rapid vibrations to the interior of the apparatus.

The mechanical vibration idea dates back to 1734, and the method has been applied to all sorts of instruments. In 1878 experiments were made in vibratory treatment of the limbs of locomotor ataxia patients. Boudet de Paris, Gilles de la Tourette, Mortimer Granville and Allan McLane Hamilton are the best known of the more recent investigators in this field.

The helmet has been used with success in migraine and in insanity. Its action in insanity has been compared to the action of the alternating current passing through the brain. When placed on the head and set in motion, the first feeling is as though the heavy helmet were rising off the head; then the vibratory motion begins to extend to the eyes, nose and lips, and many patients feel a slight numbness creeping into the tips of the fingers. One uniform result of the application of the helmet is an almost immediate disappearance, at least temporarily, of the feeling of fatigue. In a severe case of migraine of twenty-two years' standing, the patient having at the time a severe attack in the left temple, the patient said after a few minutes that she felt as if she had taken nitrous oxide gas, and shortly afterwards she expressed a strong desire to go to sleep. In about fifteen minutes, the excruciating headache had disappeared, and although the pain returned in about half an hour, it was not nearly so severe. In another case of migraine in the midst of the attack, the patient fell asleep and the attack was cured absolutely.

DISCUSSION.

Dr. Woolsey thought this relief was not due to hypnotism alone, as suggested by some, but to the influence on the spine. He was himself subject to a headache, which would be almost immediately relieved by a short horseback ride.

Dr. Massey said that an intelligent patient of his who had read of this instrument was very anxious to have it tried on him, because he had noticed that when he had certain peculiar sensations of vertigo a ride in a railroad train would relieve him immediately.

The following paper was read by Dr. Engleman on

FARADISM AS IT WAS AND AS IT IS.—MY NEW APPARATUS, THE RAPID, CONTROLLABLE INTERRUPTOR AND PRECISED NERVE AND MUSCLE COILS.

The induced or interrupted current, as generated by my new apparatus, to which I wish to call the attention of this Association, is a very different agent from Faradism as now in general use; different in range, efficiency and effect, in precision and controllability, and I trust that this apparatus may be for the Faradic current what the milliamperèmeter has been for the galvanic—the basis of progress and development.

I lay stress upon the apparatus because the faradic current, unlike the galvanic, depends altogether upon the generator for its character and efficiency, and the instruments in general use for therapeutic purposes have been such as to yield currents of limited value, without the possibility of varying their character, adapted to certain therapeutic purposes only, and imperfectly so at that; one differing from the other without means of record or comparison, so that even the most ingenious operator could derive but little positive benefit from their use, notwithstanding the satisfactory results *occasionally* achieved. The current was too vague and uncertain to be relied upon as a remedial agent: The attention of the observing practitioner and the scientific investigator was turned to more promising and efficient, more reliable and controllable, forms of electricity, and Faradism was cast aside. The striking results, however rare, which unquestionably followed its use now and then, gave a firm footing and a permanency to this current which Duchenne had so warmly recommended. It has always retained a certain status in the professional mind, which was not easily shaken, and it has been used more or less, usually in a vague way, as a mysterious agent or as a *dernier* resort, far more general than we might suppose, ever since the day of Duchenne, who, almost half a century ago, was far in advance of the general knowledge of Faradism as we find it at the present day. He not only gave us the induction current, but he perfected it as well, and the enthusiasm and perseverance, the physiologic and therapeutic research and experiment of this father of Faradism at once gave a high status to this form of electricity, which was received with favor; but as usual with a new agent, expectations ran too high, they were not realized, disappointment followed, so that the labors of Remak in behalf of galvanism were watched with interest, and his teachings fell upon fertile soil. The interrupted current was displaced, and permanently displaced, by the constant, and ever since the impetus given to galvanism by Apostoli, since this mysterious fluid has been ranged among the controllable and recordable agents, scientific interest in Faradism seems almost to have ceased, but regardless of this the interrupted current continued in popular favor. No champion appeared for the cause, but the induction coil remained, regardless of the changes in the medical profession. Why was this? We may attribute it to some extent to the desire to test this mystic agent where other remedies have failed; to some extent undoubtedly to the good results now and then achieved by its use, results surprising or unexpected at times, and to such isolated successes we must ascribe the survival and persistence of the faradic current, vague as it was, without precision, without the possibility of record or dosage.

Medical science could hardly class so vague and uncertain a force among its remedial agents, no matter what the chance results now and then achieved by its use might be. The excellent work of Tripier seems to have been without tangible results, and even the labors of Duchenne seemed doomed to oblivion. Practically, as I have already stated, far less is generally known at the present day of faradic electricity than was revealed and taught by Duchenne almost half a century ago. Faradism as known to the medcal profession, the current as produced by the instruments in general use, was certainly not an agent to which the physician could resort with any positive expectation of success. The objections which were made, and correctly made, to the use of this current were above all its vagueness and uncertainty, not only the total absence of record and dosage, but the radical difference of currents from different instruments, so much so that the current from one might serve to alleviate pain, while this might be aggravated by the current from another. Moreover, there was no certainty of result, no means of comparing results from instruments of the same kind, and even from one and the same instrument; the effect was uncertain, as the current was a variable, constantly changing one. By means of my new apparatus the instrument I wish to describe to you and which is here for the first time presented to the profession since its completion I believe that I have succeeded: (1) in overcoming the existing objections; and (2) in increasing the efficiency and the therapeutic range of Faradism.

The objections which have justly been made against this form of electricity as hitherto known to the profession are obviated by the regular, thoroughly defined, precised and controllable current produced by this apparatus. Not only does this instrument enable us to control and dose the current, so as to render it a serviceable and reliable therapeutic agent, but it also enables us to so vary and modify this agent as to make it a useful and widely applicable one. The therapeutic scope of the current has been extended and new fields have been opened to it, by reason of the great range of current variations which it gives, variations in quantity and quality and in physiologic effect, made possible by the great rapidity of interruption, by changes in the rate of of that interruption and by variation in the character of the coils. These are the factors upon which the therapeutic success of the induction current depends, and which were prominent, but less perfectly developed in the Engleman battery manufactured by Waite & Bartlett for the past —— years, in accordance with the suggestions contained in my first paper before the American Gynecological Society in 1886. In the instrument now before us, in which Dr. Waite has practically carried out my ideas in the most satisfactory manner, great improvements have been made. The apparatus with which I had been experimenting since the fall of 1892, was first demonstrated in March, 1893, in its crude form, at a meeting of the New York Electro-Therapeutic Society, and as it has proven eminently satisfactory, no material changes have been made in the construction of the instrument as now presented, although certain of the mechanical details have been simplified and improved by Mr. Harry Waite, who has assisted me so materially in the solving of the practical problems in the final carrying out of my ideas.

The characteristic features of this apparatus, which give to the current its controllability and extended range are:

1. The use of two motive powers, the separation of the primary flow through the coil from that which propels the interruptor; in other words a separation of the forces which serve to produce the interruptions and the current proper or the inducing flow which gives regularity of interruption with smoothness of current admits of perfect regulation and control of each independent of the other.

2. The interruptor, which is characterized by rapidity and

controllability: *a*, it admits of greater rapidity of interruptions than hitherto known; thus extending the physiologic and therapeutic efficiency of the current, and *b*, the control of these interruptions is perfect, making record and comparison possible.

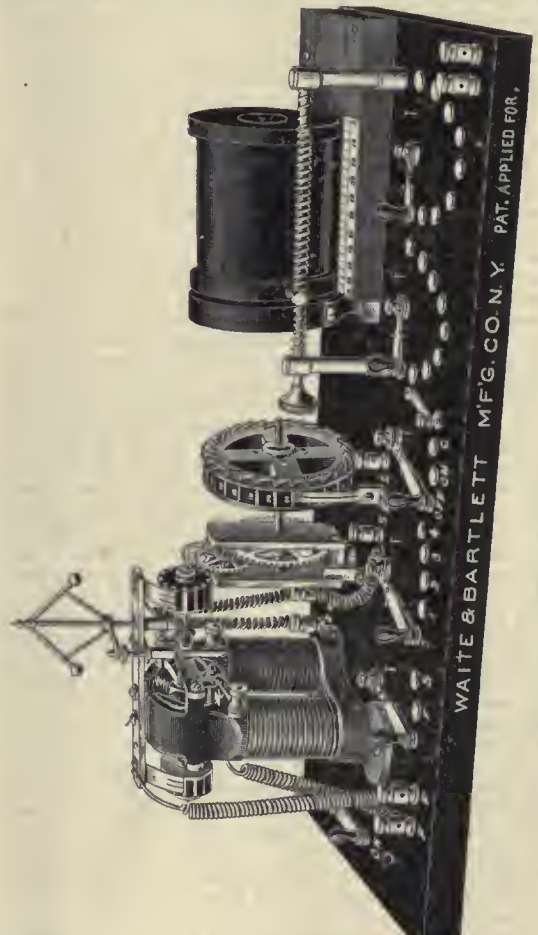
3. The series of secondary coils, varying in the number of winds and the thickness of the wire used, each of known physical and physiologic power, adapted to its special therapeutic purpose, for reduction and stimulation; for effects on nerve and on muscle.

1. *The separation of Coil and interruptor Current*, the use of an independent force for the propulsion of the interruptor and the induction current proper overcomes some of the most important objections to the therapeutic use of the faradic current, by removing all irregularity and allowing of perfect control of each of its essential factors, the rate of interruption and the force of the induction flow proper. In the ordinary medical apparatus the same primary flow acts upon both, so that the resultant therapeutic current is constantly varying. The rapidity of interruption varies with the force of the primary flow, and varies with the position of the secondary coil, which is frequently changed as it is the essential element in determining the intensity of therapeutic effect. The rapidity of interruption with the same arrangement of the vibrator varies, then, not only with the force of the primary current, but with the pushing in or out of the secondary coil, the primary or the core, as the case may be, and the therapeutic or coil current again varies with the rapidity of interruption. Rapid interruption calls for a strong propelling force, so that a mild therapeutic current with rapid interruption can hardly be attained, but it is the constant variation which is the main objection, and by a separation of the forces the necessary regularity and controllability of each is attained. For the new apparatus by this separation of coil and interruptor current the most delicate or the most powerful inducing flow can be utilized with any desired rate of interruption, whether one or one hundred thousand per minute; whether it be the ordinary slow or rapid vibrator with muriate of ammonia cells or the new interruptor propelled by Grenet cell or storage battery.

I believe that I have satisfactorily shown that the rate of vibration is one of the most important factors in determining the therapeutic effect of the induction current, and not merely as it was formerly treated, a mechanical necessity for the production of such currents, and a very secondary part in the apparatus, as it has always been and still is in all faradic instruments for medical use. However, regularity of vibration or interruption is essential to a serviceable therapeutic current, and to obtain this we must not only have an interruptor acting with far greater regularity than the old-time vibrator as ordinarily constructed, but in addition the vibrator must be controlled by a separate force entirely distinct from the coil current, as it is in this apparatus. This separation of forces is essential to satisfactory work, to a simple and reliable controlling of the two most important factors of the therapeutic current. In no other way can precision be obtained, and I trust that erelong the better class of medical instruments will be arranged for a separate and distinct coil and interruptor current. The portable battery for general use, especially for stimulating currents, will probably, on account of the greater simplicity of construction, retain its present form with a single motive power or one primary current, which acts on the vibrator, producing the interruptions, and likewise the induction effects; but the stationary apparatus, from which the various phases of therapeutic currents are to be derived, must have a separate motive power for each, a storage or Edison-Lalande battery for the interruptor and four or, at most six, muriate of ammonia cells for the coil.

2. *Vibrator and Interruptor.*—It is needless at this time as in my earlier papers, to insist upon the therapeutic importance of vibration or alternation, an accepted fact since Mr. Tesla has demonstrated the marvelous mechanical results of rapid vibration, and D'Arsonval has proven the surprising insensibility of the system to currents of extremely rapid alternation. The remarkable results of vibratory action have been sufficiently demonstrated of late, and the varying effects of such vibrations of various mediums upon different nerves are the subject of physiologic and therapeutic experiment. The more varying the effect of different rates of vibration the more important is their perfect control, and this I believe has been achieved in this apparatus. The increased rapidity of interruption and the ability to control it gives a wide scope to the efficiency of the current, increases its sedative power, and renders the application of effective currents possible to the most sensitive tissues, certain results, especially decided vaso-motor effects, being produced by rapidly interrupted currents which are no longer perceptible to the sensory nerves. Whatever be the theory, whether it be true or not that the effect of the faradic current is mainly due to its mechanical influence upon the molecular constitution of the organism, the facts are that this variability, which is the very life and essence of faradic electricity, is likewise one of the most essential factors in determining its therapeutic efficiency. This is readily proven by observing the physiologic effects of the interrupted current. The effects of the slower rates of vibration, the highest obtainable by the spring vibrator,[1] are best demonstrated by the use of mild currents, but as such currents would cease to impress the sensory nerves, and would no longer be recognized by them if interrupted with greater rapidity, stronger currents must be used to test interruptions of greater rapidity.

The physiologic effect of the induction current slowly increases with an increase in the rapidity of interruption up to 2,500 or 3,000 per minute. The increase in the *intensity* of physiologic effect within these limits is not great, and



Engleman Faradic Apparatus, with rapid controllable Interruptor and Alternator.

observable only, as has been stated, in mild currents, hence of no great therapeutic value. The *character* of physiologic and therapeutic effect, however, does vary, so that it behooves us for medical purposes to note approximately, at least, the rate of interruption even within these limits, the limits as given by the spring vibrator, and this serves well as an exact control is unnecessary, unless for experimental pur-

[1] Great vagueness exists as to the rate of vibration of the average vibrator, and as a rule this is overestimated. An ordinary spring may vibrate 2–3,000 times per minute, 40 or 50 per second, and a better instrument at most from 4–6,000 per minute or from 60 to 100 per second; to determine this with precision by tuning fork is possible, but a difficult task for any but the skilled experimenter; the simple determination by the comparison of the note sounded is uncertain and subject to a most variable individual equation as well as other sources of error. My assertions are based on my own older Gaiffe instrument, which does not exceed 3,600, and on the comparison of results from the Waite and Bartlett spring vibrator with those from the controllable interruptor current. Moreover, at the suggestion of Dr. Mount-Bleyer, the lycopodium figures obtained upon the tense membrane by the vibrator and known rates of the new interruptor have been used as means of comparison, and by reference to the results obtained by these three methods the rates of vibration have been determined with approximate certainty.

poses, and this can be obtained by the new interruptor. For ordinary therapeutic purposes the methods of current interruption used in my portable battery may suffice; that is, the single impulse key for very slow interruption; the slow vibrator, which can be regulated so as to give from 100 to 1,500 interruptions per minute, and the rapid vibrator giving from 1,500 to 4,000 or at most 6,000 per minute. High rates of interruption, together with a perfect control of those interruptions, are obtained by the new interruptor, as seen in Fig. 1. The interruptions are obtained from the commutator upon the axle of a small motor propelled by a two-cell storage battery or six Edison-Lalande cells, per minute. We can thus obtain interruptions of known rapidity and perfect regularity, the rapidity being limited by the size of the apparatus only, any desired rate being obtainable. But I believe that the apparatus in its present form, with a limit of 50,000 to the minute, is ample for all therapeutic purposes in connection with the primary and secondary coils as now in use. This is a great change from the ordinary apparatus with the vibrator which averaged from 3,000 to 4,000 per minute, and all statements as to greater rapidity of vibration are based upon erroneous suppositions, not upon scientific experiment. The physiologic results obtained by experiments with interruptions between 50,000 to 100,000 per minute have not warranted their application to therapeutic purposes, so that higher rates still were not even tested; in fact, they would be useless, as such rapidity completely annuls the effect of currents obtained from four to six muriate of ammonia cells and ordinary coils. The higher the number of interruptions the greater is the current strength which is necessary to make an impress upon muscle or nerve, and with higher rapidities all physiologic effect would be lost. Up to 2,500 or 3,000 per minute there is a slight increase of effect both upon motor and sensory nerves. As the rapidity continues to increase the intensity of physiologic effect diminishes and its character changes.

I am not as yet prepared to give the results of my clinical work, and can only refer to physiologic experiment as a guide, bearing in mind that the physiologic effect of rapidity of interruption varies with character of coil and intensity of primary flow. I will merely cite an experiment with a primary current of four muriate of ammonia cells and coil 3 of my earlier apparatus (W. and B.). At 45 of the scale, or one-third of the coil in circuit, this will produce muscular contractions with from 45 to 100 interruptions per minute; this current grows stronger with an increase in the rapidity of interruptions up to 4,000 per minute, then soon decreases. Muscular contraction ceases at 5,000, at 6,500 its sensory effect is barely noticeable, and before a rapidity of 10,000 is reached it ceases to be felt altogether. A very strong current, such as one from No. 3 coil completely overlapping the primary, with an inducing power of four Leclanché cells, and applied through large moist electrodes—in other words, a current too strong for therapeutic applications with the ordinary vibrator at 3,000 per minute, is barely perceptible with 25,000 interruptions per minute, and ceases to be felt altogether at 28,000. The rapidity of interruption controls the physiologic effect of the current as perfectly as the sledge movement of the secondary coil, so that, all other conditions remaining unchanged, it is an index of current strength which may well be utilized. The therapeutic value of rapid interruption rests upon our ability to employ strong, efficient currents without discomfort, and is found in the nerve-quieting, sedative effects of these interruptions with fine coil currents.

Slow interruptions from 100 to 400 per minute are obtained from the large wheel in the center of the figure, which has 24 contacts, any and all of which can be eliminated at will, so as to reduce the number of interruptions in the revolution, and as these contacts are very distinct and clearly numbered, they will serve for the control of the rapidity of the motor and the number of interruptions from the rapid interruptor upon its axle, to the left in the figure, which revolves 210 times as fast; to the right is the alternator. Slow interruptions from 100 to 400 are obtained from the large wheel by moving the switch to the left to "S," and rapid interruptions from the commutator by moving it to "F."

The rapidity of the interruptions obtained from this instrument can be determined with precision by control of the revolutions of the slowly revolving large wheel,[2] which always preserve the same relation to those of the commutator, as 1 to 210; the rate can likewise be determined by the use of the speed indicator and a noting of the propelling current force; hence the rate of interruption is under perfect control, either by observation of the number of revolutions of the slow interruptor or by a noting of the current intensity used after its effect has once been established by comparison with the speed indicator, a given current always producing a given number of revolutions and rate of interruption. Practically, it is the rheostat, (the switch to the right is the rheostatic) which regulates the rate of interruption and when the operator is once familiar with his instrument he can closely approximate the current intensity or rapidity of interruption by the resistance used, *i.e.*, by moving the rheostat switch from point to point.

The general laws governing rapidity of interruption are true of the primary as they are of the secondary or induced current, but in order not to enter upon too wide a field I will not here discuss the interruptions and alterations of the primary faradic which are readily obtained in the new apparatus; and moreover this current has lost in therapeutic significance since instruments are furnished with gravity coils of low electro-motor force, which I prefer to the primary, and which answer perfectly in almost all cases in which the primary coil was supposed to be essential.

3. *Coils.*—As physiologic effect depends upon resistance, diameter of wire, or current quantity and electro-motive force of the current, as determined by the number of winds in the secondary coil, I have devised a series of coils of known quantity and electro-motive force, so that each coil may determine a certain physiologic effect, and I believe that I have now at least approximated the physiologic and therapeutic extremes, since these coils have been developed after prolonged experiment and the winding of coil upon coil in accordance with theoretical reasoning and results previously achieved: The coils now determined upon represent certain forces and produce certain physiologic and therapeutic effects, motor and sensory, sedative and stimulating. Motor, to the exclusion of sensory effects, the painless influencing of the muscle, are most satisfactorily obtained by secondary coils of the lowest possible resistance with the largest possible electro-motive force, within certain limits, and within certain limits the efficiency of the muscle contracting current is increased by increased ampèrage, without any pain or sensory effect; this is proven by my coils notwithstanding theoretical statements to the contrary. Nerve effects, on the contrary, are most effectually produced by coils of higher electro-motive force, increased voltage with diminished ampèrage; counter-irritation, stimulation and painful effect upon the nerve by the greatest possible electro-motive force in short coils; the sedative, nerve-quieting effect by long coils of great electro-motive force, high voltage and low ampèrage. General nerve and muscle effects vary in character with resistance of electrode and rapidity of interruption by coils of moderately high electro-motive force and resistance. The various effects desired, calling for certain quantity and quality of current, can be satisfactorily obtained from individual coils only, quantity being necessary for action upon the mind direct, and electro-motive force for the influencing of the nerve; the endeavor to combine a variety of effects in one and the same coil is possible only to a limited extent, and perfect results can be obtained only from a continuous coil or its inner sections, and a variety of such coils is necessary if definite results are to be achieved.

The coils used in connection with the apparatus are:

A—For Motor Effects.

1. Coil I of the old series, the heavy wire coil, 0.8 ohms resistance, 528 winds, as high a voltage as is well possible, is a simple coil with considerable ampèrage.

2. Multiple coil of 32 wire, 6.500 winds, 4.1 ohms resistance, which gives even more efficient and entirely painless muscle contraction, by reason of the comparatively great ampèrage with high voltage.

B—For Stimulation and Counter-Irritation.

3. Coil II of the old series, 13 ohms resistance, 1751 winds, with penetrating and rather irritating effect, the current being a more painful one as ampèrage lessens and voltage is still moderate, comparative low.

4. Short fine coil, 40 wire, 180 ohms resistance, 528 winds, giving an extremely painful current without motor effects of any kind. An unusual relation of ampèrage to voltage, ampèrage is much less than in the previous case and voltage also lower. Comparing this with Coil 1, same voltage, 528 winds, we see that high ampèrage, 0.8 ohms resistance gives effective and painless muscle contraction. whilst very low ampèrage, 180 ohms resistance causes great pain and no contraction comparatively.

[2] An improvement is now being made by Mr. Waite which admits of the direct count.

C.—General Nerve and Muscle Effects.

5. A coil of 32 wire, 7500 ohms resistance, 4500 feet, tapped at 3000 feet 500 ohms, 1500 feet 250 ohms.

D.—Sedative Effects.

6. Coil of 6,000 feet, 12,890 winds, 2,484 ohms resistance, tapped at 4,000 feet 9,685 winds, 1,656 ohms 2,000 feet 5,670 winds 828 ohms. This coil gives the most satisfactory sedative effect, acting rather upon the sensory nerves to the exclusion of the muscle, as far as this is possible, the first or 5670 winds section, with more ampèrage being still serviceable for certain muscle effects; the full coil of 12,890 winds represent the extremes which can be used to advantage even for sedative purposes, 10,000 or 11,000 winds being almost sufficient. The coil has, however, been retained as it may in some cases yield results which could not be attained by lower electro-motive force, but higher voltage, more winds, are not only useless, but even less efficient with the battery force and primary coil; as now made the higher voltage with lowest ampèrage affects the muscles least.

These coils represent definite physiologic and therapeutic effects as far as it is possible for this one factor to do: to develop the utmost possible current effect a combination of the various determining factors is necessary. The full effect of the motor coil is obtained by slow current interruption and the moist electrode, which reduces resistance to a minimum, giving the greatest possible current quantity; it thus gives an efficient muscle current without the greatest possible increase of ampèrage possible with the given voltage yields the most efficient and painless muscle current effect upon the sensory nerves. The irritating effect of the short, fine Coil 4, is developed to its fullest extent by an increase of resistance, or diminution of ampèrage, by the use of the dry metallic electrode and interruptions of moderate rapidity, whilst the sedative effect of Coil 6, with the highest possible electro-motive force, is developed by rapidity of interruption and increase of penetration by the moist electrode. Only by a combination of all the essential factors can the most perfect results be obtained, and it is readily seen how the physiologic effect may be varied by a variation in any one of these factors, especially by a variation of each one in the same sense.

A farther variation of the current is obtained by the rheostat, the switch to the right, which controls the coil current, varying its intensity without changing the relation of primary and secondary coil; the other rheostat controls the interruptor current and thus the rapidity of interruption or alternation.

In conclusion, let me again emphasize what I deem the essential features of the new apparatus, they are:

1. The separation of motive powers, an independent coil and interruptor current.

2. The precision and variation of secondary coils and current.

3. The rapidity, regularity and controllability of interruption; though rapid interruptions have been attempted by various means, they have never been practically controlled; thus the singing or ribbon vibrator, which is difficult to adjust and calls for a strong motive power. which means a powerful coil current; and while its vibrations can be varied to some extent, this variation of vibration is obtained only by a variation of coil current, and is within extremely uncertain limits. The regularity of interruption obtained by the revolutions of the commutator is perfect while every rheotome or vibrator varies constantly, almost with each of the ever-changing factors of a therapeutic application. The importance of a perfect control of the rate of interruption such as is possible in this apparatus is evident, and that rate of interruption can be determined positively at any moment, while the determination of the vibrations of the rheotome, possible only by comparison with delicately constructed tuning forks, is simply out of the question in the physician's office during therapeutic applications. The construction of the coils for the development of currents of known physiologic and therapeutic value is an equally important feature of this instrument; it is the noting of quantity or resistance and electro-motive force or number of winds of these coils, which enables the operator to indicate with precision the current quantity and quality, and it is this possibility of determining with precision each of the elements upon which therapeutic effect depends that a positive value is given to this agent, record and dosage is made possible, and upon this we must depend, as absolute measurement is of no therapeutic value. This I can now positively say since I have for some time measured therapeutic and experimental currents, and find that such physical measure is no indication of physiologic effect, as will be readily seen if we consider merely this one fact: That the same current slowly interrupted may produce a powerful effect upon motor and sensory nerves, and when rapidly interrupted it is not perceived by either, yet physical measurement remains the same.

The interruptor which was devised in connection with this apparatus will serve other therapeutic purposes; being acted upon by its own individual motive power it may be used as a separate instrument for the purpose of interrupting or alternating the primary faradic or the galvanic current; and it may likewise be used for the purpose of producing atmospheric vibrations, by means of the telephone receiver or other vibrator, vibrations which will prove useful for various therapeutic purposes. One of the results of such independent use of the interruptor has been the muscle contracting current which is obtained by a combination of the galvanic and faradic apparatus, the mixed or high voltage primary current,[3] as I have termed it, which acts powerfully upon the fiber, and may be used to contract the muscle in cases where the faradic proper has failed.

While the striking physiologic effects produced by the new currents warrant us to expect valuable therapeutic results I will merely say that I have been more than gratified by what has been so far accomplished by muscular contraction or interstitial massage in the painless stimulation of relaxed pelvic tissues by the muscle coil, the counter-irritation produced by the short, fine, wire coil, and above all, the sedative effects of the long fine coil, even with interruptions of moderate rapidity. Without entering into details, I will only say that the instantaneous relief obtained from the application of such currents in acute inflammatory pain has been surprising and warrants the highest expectations.

DISCUSSION.

Dr. Massey said that there was still another objection to the ordinary coils, and that was the rapid oxidation of the contact points on the interruptor. A very few passages of the current suffices to oxidize these.

Dr. Herdman said that the new apparatus was simple and efficient, and it not only gave very rapid interruptions, but the number of these could be very readily determined at any particular moment. It also did away with the objection mentioned by the last speaker, for the rubbing of the brake wheel suffices to prevent oxidation. He thought, however, that the physiologic limit had not yet been determined because of the lack of sufficient apparatus. He believed firmly that in view of the excellent work which faradic apparatus had done in the past, even in its crude form, in its improved form it should be capable of rendering very valuable assistance. Careful study by the graphic method, which is thoroughly scientific, will give a reliable basis for the comparison of future observations.

Dr. Morton thought Dr. Engleman's modification of the apparatus was a very desirable step in the right direction. These induction coils are very useful and serviceable, and they will probably be always more or less in demand. It is just such enthusiastic studies as these which are likely to bring forth good fruit. The mere fact that the number of vibrations can be recorded is in itself one of extreme importance. There is one advantage which the induction apparatus will always possess, and that is its great portability.

Dr. Engleman, in closing the discussion, said he thought the physiologic limit had been already determined. The best physiologic and physical effects are obtained from a coil which has a trifle less than 13,000 windings. The coils which have been already constructed have been made purely on experimental data.

EXECUTIVE SESSION.

Communications were read by the Secretary from Drs. Apostoli, Tripier and Gautier, of Paris; Drs. Henry McClure and Bruce Clark, of England; Dr. DuBois Raymond, of Berlin; Dr. La Torre, of Rome; Honorary Fellows, conveying to the Association an expression of their interest and sympathy in the work of the Association, and wishes for its success. Also from Drs. Campbell, Grier, Hutchinson and Munn, Fellows of the Association, regretting their inability to be present, and with wishes for a successful meeting.

The resignation of Dr. Anna Galbraith, of New York, was read by the Secretary, and on motion accepted.

Nomination of officers came next in order.

For President.—Dr. Morton said: It is a very difficult and delicate matter in an Association like this to make a

[3] The interrupted high voltage primary or mixed current. Medical News, Feb. 3, 1894.

nomination for this office. Even though this Association be a most "vigorous infant," if we get the wrong wet nurse, the infant will lose much of its vigor. I would put in nomination the name of a man whom I think will promote the very best interests of the Association; a man who is an instructor, and who earnestly desires to have electro-therapeutists manufactured out of students who have received a fundamental education in the principles of electro-physics and electro-physiology. These students will come in time from Ann Arbor, and their teacher is not only well known to us, but he has graced every meeting, and by his personal qualities has endeared himself to all of us. I nominate Prof. W. J. Herdman for President.

The vote was unanimous, and Dr. Herdman declared President. Dr. Franklin Martin, of Chicago, was elected First Vice-President, and Dr. A. Lapthorn Smith, of Montreal, Canada, Second Vice-President. Dr. R. J. Nunn, of Savannah, Georgia, was unanimously elected Treasurer.

Dr. Franklin Martin said that as no one could be more faithful than the present Secretary, he therefore nominated Dr. Cleaves as Permanent Secretary. Dr. Cleaves was unanimously elected.

EXECUTIVE COUNCIL.

Dr. A. H. Goelet, New York City.
Dr. Wm. J. Morton, New York City.
Dr. G. Betton Massey, Philadelphia.
Dr. Robert Newman, New York City.
Dr. Chas. R. Dickson, Toronto, Canada.

STANDING COMMITTEES.

On Standard Coils:

Dr. W. J. Morton, New York City.
Dr. A. H. Goelet, New York City.
Dr. W. F. Hutchinson, Providence, R. I.
Dr. G. J. Engleman, St. Louis, Mo.
Mr. A. E. Kennelly, Edison's Laboratory, Orange, N. J.

On Standard Meters:

Dr. Margaret A. Cleaves, New York City.
Dr. Emil Heuel, New York City.
Mr. W. J. Jenks, E. E., New York City.

On Standard Static Machines:

Dr. W. J. Morton, New York City.
Dr. J. H. Kellogg, Battle Creek, Mich.
Dr. G. Betton Massey, Philadelphia, Pa.
Dr. Margaret A. Cleaves, New York City.

On Standard Electrodes:

Dr A. Lapthorn Smith, Montreal, Canada.
Dr. Chas. P. Dickson, Toronto, Canada.
Dr. Plym. S. Hayes, Chicago, Ill.

On Electrical Illuminators for Therapeutic and Diagnostic Purposes:

Dr. Plym. S. Hayes, Chicago, Ill.
Dr. Margaret A. Cleaves, New York City.
Dr. H. H. Hahn, Youngstown, Ohio.

New York City was selected as the place of meeting for the next year on the last Tuesday in September.

The President announced a proposed amendment to Article III of the Constitution, viz.: Every candidate for admission to the Association shall be required to present a paper to the Executive Council, at least one month before the annual meeting.

The President presented the Association with a permanent gavel with the name of the Association and its Presidents engraved upon it. It was a static roller electrode which had been presented to the Committee of Arrangements last year for use during that meeting. He then thanked the members for their consideration and for their assistance in rendering the meeting pleasant, interesting and instructive. He declared that he was proud to be numbered one of the fathers of this Association and was gratified with the progress it had made. It showed by the work thus far accomplished that it is destined to be one of the most important of our American organizations. In resigning the chair, and bidding adieu to the members in his official capacity he said he knew of no one to whom he would rather surrender the office than to the newly elected President, Dr. Herdman.

Dr. Herdman—In accepting the symbol of office, I do not propose to inflict upon you a speech at this late hour. Allusion has been made on several occasions to the "vigorous infant" which you have placed in my charge for the ensuing year. I accept the charge with considerable diffidence. I understand that it has a great many grandfathers, uncles, cousins, and other blood relations, and without such relationship the infant is going to die. I accept the responsibility only on the condition that sustenance and support and constant interest of these blood relations shall not be withheld. The Association has already enlisted the interest of many worthy ones in other countries.

When I was nominated for this office this morning in such a flattering speech, I was relieved somewhat when Dr. Morton put it on the ground of my position as an educator. We know that in order to become expert electro-therapeutists, a fundamental education in electro-physics and physiology is essential, and should be an established part of the curriculum of the schools. This has been with me almost a fad; I trust that every member of the Association will make himself a missionary in this cause. Within the last four or five years there has been an effort to meet this need in all our important medical schools, and I have received many letters asking about the methods to be pursued in carrying out this idea.

I only trust that in selecting me, you may not find that I have in any way disappointed you. I am a member of a small scientific society which names its presiding officer, "the principal servant;" it is in this capacity I wish to carry out the duties of this office.

Dr. Martin.—I have a word to say. It is difficult to mix smiles and sorrows; we look upon the retiring President and sympathize with his departing glory; we say, "the king is dead; long live the king!"

I suspect that Dr. Goelet had a special design in having the names enrolled as he did on his gavel, for on it and occupying almost the entire space is written, Massey, Morton, Goelet, and he has just left room for Herdman. Obviously he desires to limit the number of names upon it. But, seriously, Dr. Goelet's name will long be graven on our hearts, as well as upon this emblem. Our meetings, I think, have never been presided over with more dignity and urbanity than by him, and on the whole we must admit that he has kept his word pretty well about not being "a talking President." Every thing has been harmonious and our papers have been of unusual merit.

A rising vote of thanks, upon motion of Dr. Morton, was then extended Dr. Goelet for the very able and efficient manner in which he had presided over the meeting.

Dr. Goelet.—I assure you the remarks of Dr. Morton have overpowered me. I can say no more.

Adjourned.

Sulphonal Poisoning.—Stern (*Deut. med. Woch.*, March 8, 1894), discusses the renal lesions in this condition. An insane woman, aged 70, received 1 g. of sulphonal every evening, the dose having to be doubled in a month's time. This was continued for more than three months, with frequent intermissions amounting often to eight days. When the total amount taken was some 150 g. the urine showed a dark color due to hematoporphyrin. The drug was omitted at once. Fatal coma, however, supervened in a week's time. The kidneys were of a pale red color, with smooth surface, and contained deposits of lime salts. These changes were such as might be attributed to advanced age, but the microscope displayed a very extensive necrosis of epithelium, and also minute hemorrhages. These minute changes represent a toxic nephritis, and were unquestionably due to the sulphonal. There was a large gall stone in the gall bladder, and small friable concretions in the scarred cystic duct. Very slight jaundice was present during life. The poisoning occurred here, as in other published cases, in a woman, and after the prolonged use of the drug. The obstinate constipation, the age of the patient, and the changes found in the myocardium no doubt accelerated the result. During the use of sulphonal the urine should be carefully examined for albumen or formed elements, as when once hematoporphyrinuria appears the prognosis is unfavorable. In the presence of renal disease the prolonged use of sulphonal should be resorted to with great caution.—*Brit. Med. Journal*, April 14, 1894.

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All members of the Association should send their Annual Dues to the Treasurer, RICHARD J. DUNGLISON, M.D., Lock Box 1274, Philadelphia, Pa.

SATURDAY, APRIL 28, 1894.

THE SURGERY OF HENRI DE MONDEVILLE.

That accomplished *savant*, M. NICAISE, who recently published an edition of the "Chirurgie de Guy de Chauliac," has brought out an edition of the surgery of Master HENRI DE MONDEVILLE, which proves conclusively that MONDEVILLE and not GUY DE CHAULIAC, was the father of French surgery. DR. PAGEL (J. L.) gave a Latin edition of MONDEVILLE in 1892, and with that exception the work has remained unknown quite down to our time. The predecessor of GUY of Montpellier, by fifty years, he lectured at Paris in 1306 and 1312, and the volume now edited by NICAISE is the identical course on surgery delivered more than five centuries ago by Master HENRI DE MONDEVILLE. NICAISE is of opinion that while the work was written in Latin, MONDEVILLE gave his course in French. As proof of this hypothesis he cites the fact of the existence of the manuscript written in the life time of the author, in the Bibliotheque Nationale.

MONDEVILLE had been a pupil of the famous THEODORIC, of Bologne, who among other advanced notions held that the "formation of pus was not necessary for the cicatrization of a wound," and he used dressings of wine, dressings that were antiseptic exactly in proportion to the percentage of alcohol contained therein. MONDEVILLE, who was the surgeon of PHILIP LE BEL, sought to introduce the wine dressings of THEODORIC into French civil and military practice. But MONDEVILLE had much trouble; he thus writes in 1312:

"It is very perilous for a surgeon to make an operation otherwise than according to the custom of other surgeons; we have a proof; for the treatment of wounds according to the method of THEODORIC, MASTER JEAN PITART and me, who have been the first to bring this method in France, and we were the first to employ it at Paris, and in many wars, contrary to the wish and the advice of all, particularly the physicians. We have well endured the disdain and shameful words on the part of the people and on the part of our confréres, the surgeons, and as well menaces and threats. From certain persons and physicians, every day, and at each new dressing, we have borne discussions and such violent words, that half vanquished, and fatigued by all this opposition, we had almost renounced this treatment, and would have completely abandoned it without the aid of the most serene COUNT DE VALOIS. But this Prince came to our aid, and also certain other persons, who had seen in the camps, wounds treated by this method. Furthermore, we have been sustained by truth, but if we had not been strong in the faith, and nominated by the King as Royal Physician, and not a few letters, it would have been necessary for us to have abandoned this treatment."

But the treatment, says NICAISE, "ceased to be employed after the death of MONDEVILLE," and GUY DE CHAULIAC, writing fifty years later, speaks "with a certain disdain and rejects the doctrine of MONDEVILLE on suppuration."

The wound treatment of THEODORIC, championed by MASTER MONDEVILLE, sought the immediate arrest of the flow of blood, and apposition of the lips of the wound; neither probe nor tent was allowed to be introduced, the wound was closed by suture, and a pledget soaked in wine laid upon it. The whole theory of treatment after the suppression of hemorrhage was based on exclusion of the air. MONDEVILLE frequently used a plaster of resin cerate or turpentine.

Ligature of arteries is mentioned as a matter of common practice, in the chapter on amputations. The teaching that we owe the introduction of the ligature to PARÉ is thus spoken of by NICAISE:

"This practice has remained, it seems, in the traditions of the Italian surgeons, where MONDEVILLE and perhaps PARÉ borrowed it. CELSUS spoke [of the ligature] also as a simple thing, and as well that ORIBASIUS reported the practice of ARCHIGINUS of Apamia, who tied the vessels after amputations and placed a ligature at the root of the member during the operation."

In the treatment of wounds of the belly, where the intestines and omentum had escaped, MONDEVILLE recommended immediate reduction after washing them with hot wine. In event of the wounding of the epiploön he said that the "considerable arteries and veins should be tied so that the blood escape not, and then replaced." When the escaped intestines were wounded, he considered the case incurable, but if the wound were so small as to close itself without suture, it was favorable. He excepted wounds of the great intestine from this gloomy prognosis, and sutured them with a Glover's suture of silk. He wished always to exclude the air, "which is suppurative and cold," from these wounds.

His materia medica list was large, but purely empirical. M. NICAISE has done a great public service in rescuing this manuscript of the Middle Ages from oblivion, and bringing it to the front.

THE ANTISEPTIC DRESSING OF THE UMBILICAL STUMP.

Under this title, Dr. Joseph Eve Allen, in the *American Journal of Obstetrics* for April, makes an earnest plea for more rigid care of the cord in newborn children. The author reiterates the fact, long since known, that the separation of the funis is effected by a process of desiccation and that, therefore, any ulceration or suppuration is proof positive that the physiologic process has been interfered with. The method advocated by the author is as follows: The cord is ligated temporarily or clamped till after the nurse has washed the child. The accoucheur, having previously washed his hands and the child's abdomen and cord in an antiseptic solution, releases the ligature, strips the cord, pressing out as much of the contained gelatinous material as possible, and religates it with a silk ligature that has been rendered thoroughly antiseptic by being boiled in a strong solution of corrosive sublimate and afterward kept in a solution of iodoform in ether. The cord is then dressed with a piece of sterilized gauze, covered again with a pad of gauze soaked in chemically pure glycerin, and the whole retained by a sterilized flannel bandage. Each day the gauze pad is removed and a fresh one, soaked also in glycerin, applied; as often as the retaining band becomes soiled it is changed.

Under this treatment the cord often falls within three days, and the umbilical fossa should then be filled with aristol, a dry pad of gauze placed over it and the bandage re-applied. Repeated microscopic examinations of cords treated in this way, the author declares, failed to show the presence of any form of microbe.

This is but a step in advance of the practice of applying a piece of scorched linen to the cord, which has been in vogue for so long as to have descended to the place of an "old woman's remedy." And yet, like so many old wives' prescriptions, down at the bottom lies a grain of truth. The charcoal formed by the scorching was in fact an antiseptic to a very mild degree, and the heat rendered the linen aseptic. Dr. Allen's procedure starts out by making the cord aseptic and keeping it so by the sterilized dressing and the glycerin—in itself a mild antiseptic. The glycerin also serves the secondary purpose of hastening the desiccation by its hydroscopic qualities.

It may be urged that the treatment is unnecessary and meddlesome. The same was said of antiseptic midwifery, and the profession of one generation has seen the criticism silenced and antisepsis practiced in all the maternity hospitals and by most of the physicians of the world. It is true that infection of the cord rarely occurs, but that it occurs at all is an argument in favor of preventing it as far as human means can. Perhaps in the true country districts, with houses far removed from each other, with pure air and pure water, the risk of infection may be slight; but in the city, with its crowded tenement houses, its air loaded with particles of filth of all kinds from the streets, and its water of questionable purity, the necessity for care becomes imperative. The author's method may be too strongly antiseptic to suit some, but the main principle is good sound surgical sense; that the attendant should see to the dressing of the cord, having in mind the possibility of septic infection of the child, and not trust it to the unwashed hands of any old woman who happens to officiate as nurse.

"The danger of septicemia threatens every newborn babe, and can be certainly averted only by strict attention to asepsis; and the physician who does not practice its principles, and has septic diseases occur to infants in his charge, is derelict in his duty and is morally, if not legally, responsible;" such are the closing words of Dr. Allen's paper, and they are worth while pondering over.

REQUIREMENTS OF THE TEXAS LAW.

The Court of Civil Appeals of Texas handed down on Feb. 28, 1894, in the case of Kennedy vs. Schultz, a decision of considerable importance to the medical profession, and especially to practitioners in that State. This was an action brought to recover for services rendered as a physician. The party suing alleged that he was a physician in Bexar County, and had been ever since May 1, 1890; that he was a graduate holding a diploma from a reputable American medical college, recognized as such by the American Medical Association; that he had never resided in any county in Texas but Bexar, and never practiced his profession in any other county in Texas; that there had not, since May 1, 1890, been a duly appointed and qualified board of examiners in Bexar County, and, if such board or boards were ever appointed by either of the district courts, that none of the members had ever qualified, and for that reason it had been impossible for him to obtain a certificate, as required by law, and to have the same registered.

The petition in which these declarations were made was specially excepted to because it appeared from the face of it that the services rendered were in violation of the civil and criminal statutes of Texas, because the party rendering them had not caused to be recorded the certificate permitting him to practice medicine or surgery, which exception was sustained.

The court first of all holds constitutional the State law concerning physicians. The conflict set up between the statute and the constitution was that the statute provided that the board of examiners must be graduates of some medical college recognized by the American Medical Association, and that this

Association was composed entirely of adherents to the "allopathic" school of medicine. This court said that it could not possibly know that to be a fact, and could not go out into the field of speculation in connection with that subject.

Coming to the main question in the case, which has never before been directly decided in Texas, the court holds, in harmony with the uniform decisions of many other States, that a physician practicing medicine in violation of the law can not recover for fees for his services.

To practice medicine in Texas without having obtained a proper certificate and without having it duly recorded, is in violation of the civil statute, and this failure, the court holds, can not be excused on the ground that no board of medical examiners had been appointed. A violation of law can not be excused on the ground that some one else has violated it; so that, if there was no medical board in Bexar County, as required by law, this physician, for example, should have applied to some other board for examination, or at least have had his diploma recorded, in order that others might see it, and ascertain whether it was from some "reputable American college."

SMALLPOX AND TRAMPS.

In times of the prevalence of smallpox the best efforts of the sanitary officers are nullified or baffled by the Wandering Willy and Dusty Rhoades of the community. The cities have in their low-browed cheap lodging houses, as well as the rural districts in their workhouses, a source of danger in the unvaccinated tramp that deserves especial attention. The jail, likewise, to which the dirty and homeless "rounder" gravitates two or three times in the smallpox season is another menace. The prison is ordinarily free from danger, it being the rule with nearly all wardens to compel all newcomers to go through the ordeal of vaccination. But in reference to the former places of temporary abiding of the homeless class, it is expedient that an official inspection for vaccination purposes be made once to thrice a week during epidemic crises. The following sensible observations, by Dr. Richard H. Lewis, in the *Bulletin* of the North Carolina Board of Health for January, are worthy the attention of all local sanitary officers:

"We have already called attention to the rapid spread of smallpox over the United States and sounded a note of warning. Since that time the disease has made its appearance in our own State—in Cherokee; but thanks to the prompt and vigorous action of the County Superintendent of Health looking to the quarantining of the patient he did not abide with us long. Rather than be quarantined he left the State, thereby demonstrating in a very practical and satisfactory manner the value to the community of an organized health department with an alert health officer. Most fortunately also he came in contact with none except those who were protected by a previous attack of the disease, and we have good reason therefore to hope that he will not leave a trail behind him. There is no reason why a similar case should not crop out at other points in the State, particularly on the main lines of travel, which are now more than commonly infested with tramps. It is most unlikely to happen again that every one exposed is protected, and if not there is no telling, in view of the great number of unvaccinated persons to be found everywhere in the State, what a terrible scourge might then and there be originated. The danger is a real one, but how to get the people to realize it and avail themselves of the protection so easily obtainable is the question, and a most difficult question it is to answer. Most persons not acquainted with the temper of our people would say at once, Make vaccination compulsory. That sounds well, but it would be *vox et preterea nihil*. In the first place, in the opinion of the writer, our Legislature could not be induced to enact such a law; and if it could the law would, unsupported by public sentiment, be a dead letter. As to what public sentiment on this subject is the following will illustrate: At the conjoint session of the State Board of Health with the State Medical Society in Wilmington in 1892, one of our county superintendents reported that going to a public school house to vaccinate the children, according to a previous appointment, he found the house shut up and the entire school, teacher and all, taken to the woods. Again, more recently, an outbreak of the smallpox occurred in an adjoining State about fifty or sixty miles from one of our progressive towns. The Town Commissioners discussed the advisability of passing an ordinance making vaccinations compulsory. Whereupon certain citizens gave notice that they would remove from the town. Comment is unnecessary."

LICENSES MUST BE RECORDED IN ALABAMA.

The Supreme Court of Alabama holds, in the case of Nicholson v. State, decided Feb. 8, 1894, that the requirements of the Alabama Code, with regard to the recording of certificates, or "licenses," are mandatory and vital. It is provided that every certificate of qualification authorizing any person to practice medicine in that State, which shall be issued by any authorized board of medical examiners, shall be presented to the probate judge of the county in which such person resides, who shall officially indorse the same, seal it with the seal of the county, and cause it to be recorded in a book kept for the purpose. The very fact that no time is fixed to comply with these requirements, the court says, is a strong argument in support of the position that until they are complied with, the so-called "license" is waste paper conferring no right, perfect or inchoate. The language employed is equally positive and mandatory in respect of those requirements as in respect of the issuance of the certificate by the board of examiners, and there is as much room on the face of the statute, for holding the latter provision directory as the former. Until these things are done, the nom-

inal licensee is as much without authority to practice medicine, or, as it was in this particular case where the question was raised, dentistry, as if the paper had never been issued to him. And upon familiar principles, there being not even an inchoate right to so practice until the statute has been complied with in the respects mentioned, such compliance can not relate back, and relieve the practitioner of the penal consequences of having previously engaged in the business.

CORRESPONDENCE.

LETTER FROM EUROPE.

Major Girard, Surgeon U. S. Army, to Professor Senn.

No. V.

THE INTERNATIONAL MEDICAL CONGRESS AT ROME.

Rome, Italy, April 7, 1894.

Dear Dr. Senn:—When I promised you a letter from Rome, relating to the International Medical Congress, I did not realize the import of the promise. I had been at the International Congress at Copenhagen and found there no difficulty in following the work of one or two Sections; at least, made notes as the papers were read, and elaborated them at night, so that at the end of the Congress I had a fairly full report of the general sessions and of at least one Section ready for the press. I found matters quite different here, and have been obliged to postpone this letter to the end of the Congress in order to arrange my notes and collect material, when I could not be present in person.

I find that my account of this Congress can not be condensed into one letter, and will devote the first one to general considerations.

The Roman Executive Committee have had no easy task of it, and can not be held responsible for all of the many shortcomings of this Congress. It is evident that the attendance far exceeded their expectations and preparations, thus causing in the commencement great confusion. Over 7,000 physicians attended the Congress. A great majority of these were attracted to Italy by the reduced fares and the prospect of taking in the wonders of this land, while ostensibly attending the Congress. The first two or three days they felt in honor bound to visit the Sections to which they had attached themselves, without, however, earnestly becoming listeners. The result was a restless going in and out, causing such a continued noise that only the persons occupying the rows of seats nearest the speakers could follow the discourse. The place appointed for the general sessions accommodated only 300 persons, while the first two sessions were attended, not only by nearly all the members of the Congress, but by a large lay audience of Roman citizens. The jam occasioned by this enormous concourse can well be imagined. Soon, however, the sights of the great Italian metropolis proved a greater attraction than the scientific work and the Sections were but slimly attended, and the audience in the general sessions fell to about one-half of the capacity of the hall.

In his speech at the dinner given by Minister Baccelli after the third day of the Congress, Prof. Virchow characterized this change with satire. He reverted to the softening influence of Italy. Even Hannibal had lost the edge of his sword under the smiling skies of Capua. Thousands of physicians had wandered across the Alps with the earnest intention of devoting themselves to severe scientific work, but the irresistible amiability of Roman hospitality had somewhat blunted the scientific zeal. He feared that the Congress would fare somewhat as Hannibal did in Capua.

There was another circumstance inimical to continued serious attention. The number of papers presented to the Congress was 2,700; of these more than one-half—perhaps three-fourths, were in the Italian language, which was understood by a small minority of the 3,000 foreigners. At first the papers were read regardless of the language, often compelling the majority of the audience to listen for hours to a tongue they did not understand. This naturally led to disappointment and indifferent attendance. In some of the Sections this was partly remedied by relegating the Italian papers to the latter part of the sessions, but the stream of favor had already been diverted to other channels and the attendance did not recuperate in numbers. Another great drawback was the distance of the Poli-clinico from the city. This building is a large hospital on the pavilion plan, completed, but not furnished in time for this Congress. While the first three days it was entirely inadequate for the vast attendance, it was very comfortable during the latter part of the Congress, but still its location caused a loss in transit of two hours a day, unless one took the slim chances of getting a luncheon in the restaurant established in the Administration building.

Now as to the papers presented. Either the reader of the proceedings, when once they are published, or the publishing committee, who will have to select the papers suitable for printing, will have a hard task of it to sift the wheat from the chaff. A general plan of subjects to be reported on and discussed, if such a one existed, was not followed, and if any particular subjects received more attention than others, they received it accidentally because they happened to be questions of the present fashion in medicine. At least 1,500 of the papers presented were of Italian origin. The majority of these papers could not be of any scientific value, as Italy, no more than any other country of equal size, has such a number of physicians capable or in position to manufacture mental food of quality sufficiently good to be worthy of presentation at an International Congress and preservation as a matter of record or a specimen of the progress in medical training.

I believe, therefore, that for immediate or remote scientific results this Congress is a failure, and that all international congresses, when the attendance can not be reduced to a conference of more select spirits, and when distractions can more than fill the week allotted to the meetings, will be equally barren, compared to the time and money devoted. Still, for all this, I would not condemn these gatherings as useless. We can always notice a nucleus of renowned men, who closely follow the work and, if they do not participate much in the discussions, they gather in what is worth keeping. Around these come in concentric layers the less distinguished, perhaps younger generations, who sooner or later advance to the inner layers.

In this manner, insensibly as it may seem, the men of similar caliber congregate, become acquainted, learn to gauge each other and their methods of investigation and reasoning. These little cliques, as we may call them are, however, limited by language, and when a congress is held in four languages, while but a very small part of the members have command of more than two, and the great majority of but one, as here, the congress ceases to be international as far as the scientific work is concerned.

I have prefaced this letter with general remarks, which properly belong to the epilogue, but deemed them of importance for a correct understanding of what may be said in the secular and medical press.

SOCIAL FEATURES OF THE CONGRESS.

As to the social amenities, of which, judging from the

above remarks, there must have been many, they are very creditable to Roman hospitality. When the fetes were general, with admission of a large concourse of invited residents, the arrangements were not sufficient to control and guide the multitudes assembled. Selected gatherings and dinner parties, however, were as exquisite as liberality and art could make them.

The festivities commenced with Sunday, on which various excursions to the Roman "Castelli" were arranged. I participated in one of the Military Section, to Tivoli, to visit the falls of the Arno, the Temple of Sibyl and the Villa d 'Este, the country seat of Cardinal Hohenlohe, who had offered the use of the large castle for a luncheon to be given by the medical officers of the Italian Army to the medical officers of foreign armies, of which a large number were present; not less than sixty of the German Army. The Secretary of the Section, Dr. R. Livi, gave evidence of great organizing talent in this entertainment, as well as in others given by his Section; decorum was never lacking and the crush of other entertainments was avoided by personal attention to accomodation.

The same day a concert was given by the Mayor of Rome to the members of the Congress at the Constanza Theater. In the evening, Minister Baccelli, the President of the Congress, gave a magnificent dinner to the more distinguished members of the Congress, and to the official delegates of the several governments. I had the good fortune of being invited as delegate from the Army Medical Department.

One evening the vast ruins of the palaces of the Roman emperors on the Palatinum were illuminated with Bengal lights; several bands of music played during the evening; the King and his court were present on a special balcony; a powerful electric searchlight illuminated at a distance the thermes of Caracalla, the pyramid of Cestius, the aqueducts, the arches of Constantin, and of Titus, and the Coliseum, etc., the whole making a most splendid spectacle.

Another evening there was a reception in the museum of the Capitol—a most elegant gathering, but such a jam I have never witnessed. The Venus of the Capitol, generally acknowledged the best statue of the many Venuses of antiquity, was illuminated with rose-colored light and appeared life-like.

Tuesday afternoon the Queen of Italy gave a garden party at the Quirinal, to which a limited number of invitations were issued to distinguished members of the Congress and to delegates. Of the Romans, only those who were received at court were present. I was also among those fortunate. Presentations to the King and Queen, music by two fine bands, and luncheon served by the royal servants were the order of the day. The affair was very enjoyable.

The last day of the Congress was celebrated by the dinners of the several Sections. The one by the Section of Military Medicine and Surgery to which I was invited, was held at the Aquarium, a dome-shaped magnificent hall. Nearly every person of about 300 guests was dressed in full uniform with all their decorations. The United States Army uniform looked very plain among all these brilliant uniforms, but the spectacle was brilliant, the menu very good and the speeches in the various tongues cheering.

After the closing of the Congress a luncheon was given at the immense Roman baths, the thermes of Caracalla, at which 14,000 persons were present, with the jam usual on these general occasions.

A flower corso in the afternoon, at which over 3,000 carriages participated and a punch by the officers of the Italian Army, at their club, to the members of the Military Section, concluded the official festivities.

Numerous private balls, concerts and dinner parties were given during the Congress.

All the galleries and museums were open to the members of the Congress free of charge. It will be seen that it required an unusual sternness of purpose to steadily pursue the scientific work, and it will not be saying too much, if I assert that 90 per cent. of the members of the Congress fell more or less from grace.

A few words on the opening of the Congress and the organization of the Sections, and I will conclude this letter, hoping to find time during my return voyage to give you an extract of the scientific work.

The first day was the grand opening of the Congress, in presence of the King and Queen, their court, the foreign ambassadors and the members of the Congress at the Castanza Theater. The multitude present, inside and outside of the building, was enormous. The introductory address was made by Minister Crispi, followed by Baccelli, Ruspoli, Virchow, and others, upon which Maragliano, the Secretary-General made his report. This was followed by speeches of the representatives of the various nations, and presentations to the King and Queen. The Presidents of the nineteen Sections, all Italians, were announced and from the national committees of the visiting nations the following illustrious names were announced as Vice-Presidents: Virchow, Sir James Paget, Sir W. MacCormac, Stokes, Stockvis, Grainger Stewart, Kocher, etc., and last but not least, Jacobi of New York, for the United States.

The speakers at the general sessions to be held in the afternoon at 4 o'clock (or as the Italians say at 15 o'clock) were by Virchow, Brouardel, Babes, Foster, Nothnagel, Laache, Danilewsky, Bizzozero, Cujas, Kocher, Jacobi, and Stockvis. These sessions were held at the Eldorado, near de Hygienic Exposition, on the Via Nationale, in the center of the city, while the sessions of the Sections were at the Poli-clinico, as mentioned above.

In the afternoon of the first day the Sections were organized; that of Surgery electing Durante of Rome, as President, with Spencer Wells, MacCormac, Stokes, Macewen, Konig, Mikulicz, Ollier, Péan, Championniere, Lorenz, Janny, Lavista, Rossandu, Kocher, Murphy as Honorary Presidents. The Section of Military Medicine and Surgery elected Cipalla as President, and as Honorary Presidents, among others, Col. J. R. Smith, Assistant Surgeon-General U. S. A., senior delegate from the War Department, and myself among the Honorary Secretaries.

The sessions of the Sections lasted from 8 to 12, and from 1 to 3, but soon the majority of the afternoon sessions were abandoned. A great haste was apparent, in order to get through the vast number of papers, and many of those who had announced theirs were anxious to present them, in order to follow the army of those who preferred sight-seeing to the scientific labors.

A. C. Girard.

What the General Practitioner Should Know About Diseases of the Eye.

Chicago, April, 1894.

Dr. T. A. Smith read a paper with the above title before the Tennessee State Medical Society, which was published in several medical journals. The object of Dr. Smith's paper was to define the minimum amount of knowledge the general practitioner should have before entering upon the practice of medicine. I took exceptions to his ideas in an article with the same title in this Journal, Feb. 3, 1894. Dr. Smith replies to my criticism in an article in this Journal of April 14, 1894.

In Dr. Smith's first article he says the general practitioner should not attempt to use the ophthalmoscope. On this statement I took decided issue with him, and in his article of February 14 he repeats his former statement. In my article of Feb. 3, 1894, I cited cases of glaucoma, cataract,

optic atrophy and albuminuric retinitis where the ophthalmoscope would have been very valuable in helping him make a diagnosis. In answer to the first and second, Dr. Smith says he does not need an ophthalmoscope. That any case of glaucoma can be easily diagnosed by the tension alone, as it does not require any great amount of skill if it is at all marked, and the ophthalmoscopic signs do not appear until late. The reference given below will show how misleading this is.

I do not maintain that the general practitioner should become an expert with the ophthalmoscope and tie his hands. Just because he can use the ophthalmoscope he need not be barred from using his fingers to test the tension. He might make a mistake were he to depend upon either alone. No doctor would ignore his stethoscope because he had a microscope and could examine sputum with it. If Dr. Smith's cases of glaucoma are all inflammatory, then he may get along nicely without an ophthalmoscope, but if he has, as others have, cases of glaucoma simplex and can make a diagnosis by the tension alone, I will give him the credit of having his sense of touch very highly developed.

Every one knows who does work in ophthalmology that we often see cases of glaucoma simplex where the tension is normal, or if it is elevated we can not detect it, and the patient has no pain or any symptom that would lead us to suspect glaucoma, except loss of vision. With such cases we use the ophthalmoscope or fail to find the trouble. If the specialist can not detect the tension I think it poor policy to advise the general practitioner to rely on it. To keep this from appearing as personal difference of opinion, I will quote a few works that are called good authority, *verbatim:*

Fuch's 1892, "Glaucoma Simplex," page 343: "In glaucoma simplex, the increase of tension sets in very gradually, so that no inflammatory phenomena are produced. The eye either looks quite normal externally, or it gives evidence of its lesion through the greater prominence of the disturbed anterior ciliary veins, and also through a somewhat dilated and sluggish state of the pupil. The tension of the eye is shown by palpation to be elevated, but not to any considerable degree. Often on the first examination no increase of tension is found at all; it is not until we examine the eye repeatedly, and especially at different times of the day, that we succeed in demonstrating that the tension is elevated. At these times a slight, smoky cloudiness of the cornea is also present, such as appertains to the prodromal attacks of inflammatory glaucoma. Finally, there are cases of glaucoma simplex in which the tension is never found distinctly increased; in consideration of the fact that in glaucoma simplex marked external symptoms, and sometimes indeed, any manifest increase of tension are wanting, and we are thrown back upon the ophthalmoscopic examination for the establishment of a diagnosis. Such an examination shows the presence of a total excavation of the optic nerve, the depth of which corresponds to the duration of the process."

Meyer, 1887, page 251: "Simple Glaucoma: In this variety of glaucoma the inflammatory symptoms are entirely absent, and the appearance of the eyeball does not materially differ from that of the normal eye. At most we may find, after some exciting cause, a slight pericorneal injection, and a slight turbidity of the aqueous humor, soon disappearing. In short, the patient does not complain of any pain, and the exterior of the eye preserves its natural appearance. It is often difficult in the early stages, and even throughout the disease, to decide by the sense of touch whether the eye be harder than usual. This is all the more difficult that the physiologic tension is subject to considerable variation. To the opthalmoscope the media of the eye seem to be completely transparent; but we find the characteristic excavation of the papilla and the arterial pulsations, which are either spontaneous, or easily produced by slight pressure of the fingers on the eye."

Noyes, 1890, page 506: "Patients often can give little account of the premonitory symptoms, although they have long existed. When well established it is often mistaken in old persons for senile cataract, especially because the lense in old age has a smoky hue. This explanation of failing sight is considered adequate, and a resort to skilled advice is discouraged. Under this mistake the patient is told to wait until the supposed cataract shall be ripe before going for relief, while the delay is simply affording time for the loss of all chances of recovery."

Page 509: "No dependence can be placed upon the external signs because the eye looks healthy, central vision may be normal or nearly so, and subjective symptoms are obscure or have been unheeded; tension may be doubtful. We are then confined to two symptoms, the appearance of the optic nerve and a careful scrutiny of the visual field."

(In Noyes work of 1894 the above is found, pages 551 and 554).

G. E. de Schweinitz, 1892, pages 373 and 374: "Chronic Glaucoma. This type of the disease is characterized by an absence of the signs of glaucoma in the anterior aspect of the eye, at least, on ordinary inspection. By careful examination a slight steaminess of the cornea may sometimes be detected, with a little lack of transparency in the aqueous humor. So, too, there may be some undue tortuosity of the perforating branches of the episcleral plexus. In general terms, however, there is an absence of congestive symptoms, and there is no pain. The tension of the eyeball is but slightly increased, and often it is difficult to decide whether it is increased at all. The media are clear, and the disease is detected with the ophthalmoscope by observing the characteristic cup in the nerve head, the halo surrounding it, and the spontaneous arterial pulse or its ready development by slight pressure." (The references I have given are copied word for word, so the general practitioner can see the weight of authority.)

No one will say a doctor ought not to take the tension of an eye, but why depend upon it and advise him not to attempt the use of an instrument that will assist him in making a diagnosis?

I am sure it would be better for the patients if the general practitioner knew how to use the ophthalmoscope, and infinitely better for the specialist, for then there would be found patients that needed a specialist much more often than there would if the general practitioner did not use the ophthalmoscope. Dr. Smith fails to say why the general practitioner should not use the ophthalmoscope in locomotor ataxia and albuminuric retinitis mentioned in my article. About 15 per cent. of the cases of posterior locomotor ataxia have atrophy of the optic nerves, and whenever we have atrophy it appears before the ataxic symptoms.

Dr. Smith in his first paper says the general practitioner should know when spectacles are supposed to be indicated. Let him use the ophthalmoscope and he would not have to suppose; *he would know.*

I would refer the general practitioner to Gower's work on medical ophthalmoscopy to see the necessity for the use of the ophthalmoscope in functional nervous diseases, the main indications of which should be recognized by the general practitioner.

I do not write this article simply to get the last word, like two little boys quarreling, but for the good of the general practitioner, the patients that intrust their health and happiness to him and the specialist. The general practitioner, as a rule, does not use the ophthalmoscope, but it is unjust to him and his patients to advise him not to use an instrument costing so little, and of so much importance.

103 State Street. W. A. Fisher, M.D.

Protection for Vaccinated Arms.

Mt. Pleasant, Iowa, April 17, 1894.

To the Editor:—In our "Correspondence" of the Journal, February 24, I hoped as a result of it to elicit some ideas, either suggestive or final, of value in the direction aimed; and perhaps also, that some one would bring up the subject for the same purpose next June, at the meeting of the American Medical Association. Of the former, there has been no result. Of the latter, it is yet too early to know what may be done.

Having myself concluded my opinion of the best plan of

protection to the vaccinated—the subject we have in consideration—I will advance it; and also as a reason for this second communication.

Cut two triangles out of any piece of cloth which may be at hand; a lesser triangle cut from the base of the first and larger triangle, and you have a V, the first letter of vaccine. Vaccination as a word is peculiar, in suggesting to the most illiterate that it begins with V, and V seen on the arm of a person is hence suggestive of *vaccinated*, and is at once a danger signal to the wearer. Railroads protect by signals their charges, and why should not the medical profession protect its vaccination train? Prophylaxis is considered by many to be the highest sphere in medicine; if this is so, is it not desirable to make it as perfect and complete as possible? Something cheap, simple, expeditious and efficient it seems to me is in this manner obtained. It is easy to make, easy to sew on (easier than a band), and no choice necessary (except, perhaps, to select the most conspicuous, if there is a choice), in selecting the kind of cloth.

Let us hope some one will present this subject to the Association, and something in this much needed direction be accomplished by the profession at its next National meeting. Very truly, H. L. Green, M.D.

Big Things.

To the Editor:—In a friendly chat with one of my medical friends, recently, I asked him why he did not take the Journal of the American Medical Association. His reply was as follows: "It is too full of *big things*." There is some truth in this assertion. The Journal is often full of big things; my friend claims that the so-called expert and the specialist are allowed too much space in which to air themselves; that it requires too much effort upon the part of the country doctor to digest the "big things." He says the country doctor's time is better spent in reading a few practical *truths* than in trying to analyze a lengthy article on "Electro-anesthesia and Frequency of Induction Vibration;" "The Esoteric Beauty and Utility of the Microscope"; "Appendicitis with Original Report of One Hundred and Forty-one Histories and Laparatomies for that disease under Personal Observation." To the specialist these big things are really *big*, but to the average country practitioner they are too utterly too too. He has neither the time nor inclination to read these effusions, even if he had the ability to digest them. For the above reasons the country doctor will subscribe for a journal that deals in things not quite so big.

I take the Journal because its contents are from the pens of the ablest men in the profession. (*I* write, occasionally, *myself*). But I never get on a high horse and try to say things that the reader can not possibly understand. I believe it was Josh Billings who pointed out the folly of learning too many things that were not so. Most of the *big things* in all the journals are examples of this kind of knowledge. I have often thought of writing an article on microbes; in fact did write a squib on the "Microbe of Drunkenness" and suggested the name of Cloridi of Dwightii or Goldii, I have forgotten now which, but it does not matter—*microbes* are *little things* and I am on another subject. But before I forget it, I will say that filth and vermin are often found together, therefore vermin are (or is) the cause of filth, or filth is the cause of vermin, I do not know which; but this is a very clear proof of the correctness of the germ theory. It is very plain to a man who understands it, but I don't understand it, you see.

The next "big thing" to which I call attention, is the nostrum vendor. This dare-devil worries me; every mail brings some of his diabolical literature or some of his infernal stuff, "all free gratis and for nothing." I will treat any doctor in the United States to a plug hat who will show me how to stop this fellow from writing me. One day he tells me about tablets, the next about pills, the next about elixirs, and then comes the "Ines," "L——ine," "H——ine," "P——ine," "H——ine," "T——ine," "Y——ine," "M——ine," last but not least "B——ine," all of which are certainly *asinine*. If this monster can be killed off I would be glad to know it.

Kentucky has made a raid on him and I hope will rout him. Other States ought to follow suit. Recollect, I am not making war on the "Ines;" they are inoffensive *per se*.

What I object to is the knave who puts on the almanac attachments. "A—a" with its almanac attachment is no better (to me) than "Jayne's Expectorant." If a remedy will not sell without this attachment I'll never buy it. If quinin, morphin, opium, chloral, chloroform and calomel should be accompanied with an almanac attachment, together with all the lies that usually go with such, then they too would be stricken from my list of remedies. A remedy that will not sell on its own merits is like a doctor who depends upon a newspaper for his reputation. Neither one will do to trust (in my estimation). The genuine medicine needs no almanac attachment. The first class doctor never advertises. The nostrum vender is a big thing *as a nuisance* and ought to be abated. The advertising doctor belongs to the same category and if you will watch right close you will see these two fellows very close together. The newspaper doctor prescribes nostrums. "J——e," "O——n," "S——c," are favorites with him,—but I must close.

Respectfully yours,
W. P. Howle, M.D.

The Code and Railroad Corporations.

San Diego, Cal., April 16, 1894.

To the Editor:—I have hitherto refrained from discussing Code revision, though mentally applying to *some* of the diatribes forninst the dear old Magna Charta, that well-known couplet:

"No rogue e'er felt the halter draw
With good opinion of the law."

For more than thirty-five years I have associated it with the Decalogue and the Hippocratic oath, never realizing that either of them was particularly irksome, nor believing that all men could be induced to abide by them, however modernized. In elegance of diction and loftiness of sentiment I know of no instrument comparable with it. Its quaintness lends to it an additional charm, and I much fear if we begin to revise and amend it we shall leave nothing worthy the name. Perhaps a better solution of the problem would be to adopt the suggestion and the language of the poet as he saw vandals carrying off the good ship, *Constitution*, piecemeal. He wrote, as you remember,

"Ay, tear that tattered ensign down,
Long has it waved on high,
And many an eye has danced to see
That banner in the sky.
Nail to the mast that holy flag,
Set every threadbare sail,
And give her to the God of storms,
The lightning and the gale!"

But if the suggestion of the Committee, to drop the section covering the duties of the laity to our profession, shall prevail, I hope some equally good advice to railroad corporations will be substituted in its place. And this, in connection with Dr. Lichty's timely contribution to your April 7 issue, suggests a reminiscence, for which the indulgence of your readers is solicited.

In the spring of 1869, near Wasatch, on the U. P. Road, the writer was seated in one of five coaches that plunged down a thirty-foot embankment. Upon recovering his equilibrium he closed the door of a stove suspended above his head, to prevent a threatened conflagration, and walked out on the *ceiling* to a place of exit. Several persons were killed outright, among them the nephew of Chief of Police Crowley, of San Francisco, and many more sustained various injuries. For hours the doctor stood in the melting snow, treating all applicants until both of his pocket cases were exhausted, and possibly saving the Company thousands of dollars in the matter of suits for damages. Upon reaching home he was laid up for

three weeks with inflammatory rheumatism, caused by the fall and subsequent exposure, his business, meanwhile, suffering from neglect. The recital is not unique in the experience of our profession, as Dr. L. suggests, nor is the sequel. For he has never received the thanks, much less an honorarium, from the Company. Nor would the incident be recalled at this late date except to point the moral, that doctors, journeying as they annually do for the public weal, are entitled to something better than Midwinter Fair rates. Change the Code? No, but rather the consciences of men.

Faithfully yours,

C. M. Fenn, A.M., M.D.

A Curiosum.

Indianapolis, April 21, 1894.

To the Editor:—Our Board of Health concluded to have a new pest-house.

Once on a morning, this month, our Mayor with his medical advisers and constables marched out, as in ancient times the burgomasters did, to burn the old pest-house. The old ground would become valuable and be sold at a price to purchase a new ground and to build a new house.

The foolish act was done with great dignity. But in the very afternoon a tramp marched in town with smallpox. Certainly the court house was vaccinated from the Mayor to the watch-dog, and so the station house. Then, with equal dignity, the whole city government sat down in a meeting: the Mayor, the Board of Public Safety, of Public Works, of Health and Charities, and all wise men of the town.

Whereas no bids for the old grounds had come in, it had been unanimously concluded to build new pest-houses on the same ground, but little ones, that the mistake may not appear too great.

Perhaps it is advisable to publish this incident as a warning. G. B.

From Dr. Woodbridge.

Youngstown, Ohio, April 20, 1894.

To the Editor:—I supposed that when I published my paper, "Can Typhoid Fever be Aborted," that I would immediately be buried under an avalanche of adverse criticism. It was, therefore, a great and very agreeable surprise when letters of commendation and inquiry began to pour in upon me from every part of the United States and Canada. I regret that I can not answer them, and at the same time (in addition to my other duties) prepare a paper for the San Francisco meeting. If the writers will excuse me until I return from the meeting of the American Medical Association I will employ a stenographer and will then take pleasure in answering, as far as I am able, every question.

Very respectfully,

John Eliot Woodbridge.

Philadelphia County Medical Society.

To the Editor:—At a meeting of the Philadelphia County Medical Society held April 18, the following resolutions were adopted:

Whereas, The Code of Ethics of the American Medical Association declares it derogatory to professional character for a physician to dispense or in any way promote the use of a secret nostrum; and the American Medical Association by a resolution unanimously adopted at its meeting in 1892 forbade the advertising of such nostrums in its Journal; and

Whereas, The Journal of the Association has continued to advertise such nostrums and in defense of its course in this particular has published an anonymous personal attack on a member of the American Medical Association and of this Society;

Resolved, That the Philadelphia Medical Society respectfully demands that the Trustees of the Journal shall in their public official acts, respect the spirit and the letter o its Code of Ethics; and that the columns of its Journal shall not be used for the anonymous personal abuse of its members in good standing.

Resolved, That a copy of these resolutions be transmitted to the Medical Society of the State of Pennsylvania; and to the American Medical Association; and to the weekly medical journals. T. B. Schneideman, Secretary.

PUBLIC HEALTH.

Smallpox.—Except in Chicago, smallpox is fast losing its importance as a factor in the public health situation. The disease seems to have attained its maximum spread about the middle of March, when a total of 219 infection centers had been reported in twenty States and the Dominion of Canada. At the beginning of the present week there were reported as still remaining fifty-five infected points in the following States: Massachusetts, Connecticut, New York, Pennsylvania, Indiana, Illinois, Wisconsin, Minnesota and Iowa.

The lodging-houses continue to give some trouble in New York city, nearly all the recent cases being found in these unsanitary premises. Another inspection of them was recently begun, this time at night so as to secure the vaccination of all inmates. An occasional walking-case still turns up in the city public offices, and a clerk in an office on the ground floor of the City Hall was recently taken to the pest-house. The building has been again disinfected and all occupants and employes from the Mayor down to the scrub-women, have been again vaccinated or re-vaccinated. The disease, which was declared epidemic in Brooklyn in March, had almost entirely disappeared in that city during the early part of the present month. April 4, for the first time, in several months, no new cases were reported. There was however, a recrudescence of the outbreaks soon thereafter and the work of inspection and vaccination is still being vigorously prosecuted. Infected and suspected premises are rigidly quarantined, in one case fourteen whole blocks of buildings being in charge of a corps of vaccinators and disinfectors, protected by the reserves of five police stations, and the entire population of about 5,000 were vaccinated in a single night. Elsewhere in the State, tramps conveyed the disease into the Wayne County poor-house, April 1; into the police station at Syracuse, April 8; and into the county jail at Schenectady March 18, where the character of the case was not discovered until April 6 by which time six other cases had developed.

The arrival at New York of two of the Netherlands line of steamers with smallpox on board caused the Health Officer of the port to notify the Company that its vessels will not be allowed to enter, unless their crews have been vaccinated before clearing from Rotterdam, and to request the United States Consul at that place not to give clearances for New York to these steamers unless this provision is carried out and the passengers and crews are disinfected before the vessels sail.

In Pennsylvania there were reported fifty-nine cases in the State, all but two of which had been directly traced to Danville, where, as previously noted, the disease was declared epidemic March 23. Advices from Dr. Benjamin Lee, Secretary of the State Board of Health, announce that smallpox has disappeared from Tyrone Forges, Reading, Williamsport and Wilkinsburg.

Dr. C. N. Hewitt, Secretary and Executive Officer of the Minnesota State Board of Health, reports that State free from smallpox except the cases in St. Paul, where there have been two infected houses—some half dozen cases in a suburban hotel, from which there has been no spread, and one case in a house in the city itself; this latter case was

that of a young woman in a private family, origin unknown and no connection with the first outbreak. "There is no likelihood of any spread from either of these cases."

Dr. Scott, Secretary of the Illinois State Board of Health, in his report to the Board at its meeting on the 24th inst., refers to the remark of his predecessor, Dr. Reilly, at the January, 1892, meeting of the Board, to the effect that Illinois was then in greater danger of a smallpox epidemic than of one of Asiatic cholera; and urging that, while proper precautions should be taken against the latter disease, the renewal of the vaccinal protection of the State was of even greater importance. To the work then begun, and since vigorously continued, he attributes the fact that, notwithstanding the infection has been carried into twenty-two points in the State, either by tramps or others from Chicago—in only one instance has there been any spread beyond the family or premises first infected, while in the majority of instances there has been only a single case. The exceptional instance is at a manufacturing suburb of Chicago, where three families have been infected. At the date of the report there were eleven infected points, with seventeen cases remaining, outside of Chicago. In Chicago from January 1 to April 21 there were 962 cases, apportioned among the several months as follows: January, 128; February, 233; March, 305; April (to the 21st), 296. The average for the first twenty-one days of April was 14 cases a day, and at this rate the total for April will be 420 cases, an increase of 30 per cent. over the previous month. Infection centers are widely distributed, cases having been discovered during the last week in twenty-one of the thirty-four wards of the city. The resources of the health department have been overtaxed; the smallpox hospital crowded beyond its limits, so that cases are now retained at their own homes. At the close of the week there were some sixty cases being treated at houses in twelve different wards in every division of the city, the majority, however, in the west division in the group of wards opposite the business district. There were twenty-six infection centers in the tenth ward alone—one of this group.

The municipal authorities have at last awakened to the gravity of the situation; the Health Department, crippled hitherto by want of funds, has been given *carte blanche* as to expenditures; a second 100-bed extension of the smallpox hospital is under way; an adequate ambulance service is provided; the city has been districted and each district is in charge of a qualified physician with unlimited authority as to men and measures necessary for the prompt suppression of the epidemic; inspectors are stationed at all railway stations and the house-to-house inspection is being repeated—this time by competent physicians,—the former inspections by policemen having proved worthless. In concluding his report, Dr. Scott adds:

"Meanwhile the wholesale vaccination begun by Health Commissioner Reynolds last year is being vigorously pushed, and it is upon this work that the greatest reliance is to be placed. More public vaccinations have been performed in the city of Chicago within the last few months than among any other equal number of people probably in the world, and if the work is continued it is only a question of time when the epidemic will die out for want of material."

Asiatic Cholera.—Recent reports of the westward spread of Asiatic cholera in Europe are by no means reassuring. It has been reported successively in Turkey, Poland, Belgium and Portugal—late cable dispatches announcing sixty-five new cases in Lisbon on the 22d, and 104 more, with three deaths, on the 23d. Spain has established quarantine along the frontier and has also dispatched a medical man to Lisbon with instructions to report the progress of the epidemic direct to Madrid—the Portuguese Government having suppressed information by wire. Inspector General Proust reported to the Council of Public Hygiene of Paris, three cases of the disease at Liege, Belgium, during the last week of March, but the fact was not made public until April 19. The disease has continued to spread in Constantinople, among its recent victims in the higher classes being the Director-General of the Tobacco Monopoly. The situation is being made the occasion of urgent appeals in the columns of the secular press for a rigid enforcement of the precautionary measures adopted by the recent International Sanitary Conference in Paris. These measures embrace a system of medical inspection and disinfection of pilgrims for Mecca before embarkation, and also of the vessels upon which they are to be carried; each vessel is to have a qualified physician, is to be supplied with a *per capita* allowance of good drinking water, etc., and is to furnish a given amount of space for each person on board. The Turkish lazarettos are to be reorganized on the plans laid down by the Conference at the Venice and Dresden sessions. Most important are the measures to be enforced with the returning pilgrims; it is their filthy and often diseased condition, due to their mode of life in the "holy city," that constitutes the menace to public health, and which has so often been the means of importing cholera into Egypt, Algeria, Tunis, Bosnia and thence to the rest of the world. Strict sanitary measures are to be enforced with them, especially at the lazaretto in the Turkish dependency of El Thor in Arabia Petrea on the east shore of the Gulf of Suez, and the Sultan is urged to thoroughly reorganize his sanitary administration—a recommendation which it is believed, in view of the special mission already dispatched to the Yemen under Assaf Pasha, will receive prompt attention.

Quarantining Chicago.—Conferences of neighboring State health officers have been held at Chicago with a view of determining the necessity of instituting quarantine measures against the deportation of smallpox from the city. The impracticability of such measures seems to have been conceded after investigation by Secretary Probst of Ohio, Metcalf of Indiana, Scott of Illinois, Reeve of Wisconsin and Hewitt of Minnesota. Nevertheless Dr. Hoyt, Health Officer of St Paul, has asked the Mayor of that city to take steps to establish a quarantine against Chicago. The Mayor does not believe the situation warrants such action at the present time.

Tramps and the Public Health.—In the majority of the 219 smallpox centers thus far reported, the origin of the infection has been directly traced to tramps. It has been repeatedly urged that every municipality should have a standing order that, before giving shelter or other assistance to one of these gentry, he should be examined as to his vaccinal status and if this is not satisfactory, he should be vaccinated forthwith. The tramp is a serious menace to the public health in many ways, but, in respect to the propagation of variola, he may readily be made innocuous.

Fighting Vaccination.—Suits to prevent the enforcement of school vaccination orders are growing in frequency. In addition to those already reported in New York, Pennsylvania, Indiana and Illinois, similar proceedings have been begun in Connecticut, at New Britain, and at Beloit in Wisconsin. At the latter place the State Board of Health is defending the school board, and will probably be called upon to do the same for other boards in that State.

Coxey and Preventive Medicine.—Some of the divisions of "Gen." Coxey's army of "commonwealers" have submitted *en masse* to vaccination. This has been made a condition by some communities to the supply of provisions and shelter. If the precedent should be generally followed the cause of preventive medicine, so far as smallpox is concerned, would be a large gainer by "Gen." Coxey's "petition on foot."

BOOK NOTICES.

An American Text-Book of the Diseases of Children; including special chapters on essential surgical subjects. by American teachers. Edited by Louis Starr, M.D., assisted by Thomson S. Westcott, M.D. Philadelphia: W. B. Saunders. 1894. Pp. 1190. For sale by subscription only.

This elaborate text-book has been written by a syndicate of sixty-three authors, of whom about fifty are directly connected with a medical college. This practically insures the sale of the work to the medical students at the institutions where the "American teachers" teach. The steady increase in this manner of medical book producing, has some advan-

tages, but it is, in the long run fatal to individual authorship. It is true that the "text-book" being an exhibit of the current information, and therefore of temporary value, is better adapted to syndicate writing than most other books but the practice is of very doubtful utility to the profession.

The work is encyclopedic in scope and after the introduction is divided into thirteen parts, as follows: 1, "Injuries to birth and diseases of the new-born; 2, "The Diathetic Diseases;" 3, "The Acute Infectious Diseases;" 4, "General Diseases not Infectious;" 5, "Diseases of the Blood;" 6, "Diseases of the Digestive Organs;" 7, "Diseases of the Nervous System;" 8, "Diseases of the Respiratory System;" 9, "Diseases of the Heart;" 10, "Diseases of the Genito-Urinary System;" 11, "Diseases of the Skin;" 12, "Diseases of the Ear;" 13, "Diseases of the Eye."

The book is well printed, and the illustrations are excellent, some of them colored plates in the best style of the art. The prescriptions are all written in the old English system of weights and measures instead of the modern decimal system. The unusually copious index adds much to its value as a work of reference. While there is less weight given to antiseptic therapeutics in the treatment of the different diseases than one would expect, taking into consideration the existing state of bacteriological science as set forth in the pathological portions, yet the treatment fairly represents the current practice. In pathology the work is abreast of the most recent accepted facts. As a whole the book is highly creditable in every respect to American authorship, and a worthy companion to the other "text-books" of the series.

A Text-Book on Diseases of the Eye. By Henry D. Noyes, A.M., M.D. Complete in one octavo volume of 816 pages, profusely illustrated with 269 wood-engravings in the text, five chromo-lithographic plates, and ten plates in black and colors. Second Revised Edition. Price, in cloth, $6.00; leather, $7.00. New York: William Wood & Company.

That the first edition of this work has been exhausted in three years, is the best of proof that the author has succeeded well in his endeavor to furnish the American medical student a good practical text-book on ophthalmology. In the revised edition the general arrangement has not been changed; but many additions have been made in order to embody in the book the more recent discoveries and well-established views in ophthalmology.

It deserves particular mention that the subject of eye-strain and its important relation to the nervous system is a great deal more thoroughly treated than in the first edition. The chapter on granular conjunctivitis has been partly re-written, and in its new form is one of the best expositions of the various phases of this complex malady. All through the book the great care and good judgment of the author is noticeable in the selection of additional reading matter. It is, therefore, much to be regretted that the author has not bestowed the same attention on a careful revision of the phraseology in order to expunge the many inaccurate statements and ambiguous phrases which occurred in the first edition. For instance, on page 89 we read: "Then sol. sulph. atropia, gr. iv ad ℥j, will be dropped into the eyes from three to ten times within one to three days." How are we to interpret these directions? Shall the drops be used three or ten times each day, or three to ten times in all?

On page 206 *loss of sight of the one eye* is mentioned as one of the conditions which influence the capacity of fusion of the separate retinal images! How can the patient have double images if one eye is blind?

In the treatment of ophthalmia neonatorum on page 324 the following instruction is given: "If the daily personal attendance of the physician is not possible, a solution (gr. v ad. ℥i) of silver nitrate may be dropped between the lids three times daily, taking pains to insure its entrance beneath the upper lid by lifting it off the globe and at the same time avoiding contact of the caustic with the cornea." This is very bad advice in every respect; it is bad enough indirectly to admit that a physician could not see a case of ophthalmia neonatorum every day; but it is worse to let, anybody use nitrate of silver solutions on the eyes under so critical conditions; and it is absurd to insist that the caustic shall not come in contact with the cornea when it is allowed to spread all over the conjunctiva of the upper lid. That is asking for a physical impossibility.

In a work intended to be a guide for students and physicians, accuracy and clearness in the expression of views is of the greatest importance; any ambiguity which puzzles the student's understanding of the author's meaning, mars the usefulness of a text-book. If in the next edition which undoubtedly soon will become necessary, these defects are removed, this work will be the perfect text-book on ophthalmology.

Gonorrhea: Being the Translation of Blenorrhea of the Sexual Organs and its Complications. By Dr. Ernest Finger, Docent at the University of Vienna. One volume, of 330 pages, octavo, illustrated by numerous wood-engravings, and by seven chromo-lithographic plates. Third Revised and Enlarged Edition. Bound in muslin, gold lettered, $3.00. New York: William Wood & Company.

The author in this edition has given a statement of the advances which have been made since the appearance of the second edition. The author says in his preface: "The possibility of more ready culture of the gonococcus and greater precision in the question of mixed infections, constitute important achievements. On the other hand, I have been able, through the great kindness of Prof. Weichselbaum, to make the first systematic anatomic examinations of chronic urethritis. These points form the principal changes and additions to be found in the present edition."

This work is one of the most systematic in any language on this disease. The chapter on its history is especially interesting, and the author gives a *résumé* of the subject from the earliest mention in the Mosaic writings down to those of the recent bacteriologists. This portion of the book is marred by some errors in spelling, due to bad proof reading; as "Rhages" instead of Rhazes; "Abulcasem" instead of Albucasis or Albucasem (page 3); "Guido de Cauliaco" instead of Guy de Chauliac. (It is only fair to say that the Latin spelling was "Guidon de Caulhiaco.") But these are minor errors. The work is well worthy of a place in the library of every progressive physician and surgeon.

Transactions of the Southern Surgical and Gynecological Association. Vol VI. Sixth Session, held at New Orleans, La, November, 1893. Published by the Association. 1894.

This Journal published a fairly complete abstract of the proceedings of this flourishing Association shortly after the meeting; several of the papers have been printed in the Journal and elsewhere.

The papers are specially noticeable for their practical character. Many physicians of highest standing in America, without regard to the line of Mason and Dixon, were among the contributors.

The paper of the most enduring value is that by L. S. McMurtry on "Ephraim McDowell." Dr. McMurtry, long a resident of Danville, Ky., the theater of McDowell's great pioneer work, has gathered in this paper all the local information obtainable, in addition to the published records of McDowell and his operative work.

The high class of the papers in this volume, the excellent typography, and the careful editing by the Secretary, Dr. W. E. B. Davis, make it fully equal to its predecessors, and a credit to the Society. The next meeting will be held at Charleston, S. C.

ASSOCIATION NEWS.

Section on Ophthalmology.—Members of the Section who have not yet forwarded the titles of their papers will confer a favor by sending the same to the Secretary.

Preliminary program: Address by Chairman of Section.

"A Clinical Study of the Myopic Eye—Its Genesis and Treatment," Dr. S. D. Risley, Philadelphia, Pa.

"Asthenopia," Dr. C. M. Hobby, Iowa City, Iowa.

"The Physiological Basis of certain Oculo-muscular Phenomena, incorrectly termed Anomalies," Dr. F. B. Eaton, Portland, Oregon.

"The Value of Retinoscopy as the Crucial test of the Correction of Refraction Errors," Dr. B. Alexander Randall, Philadelphia, Pa.

"Toxic Amblyopia," Dr. James A. Lydston, Chicago, Ill.

"Amblyopia," Dr. A. H. Voorhees, San Francisco, Cal.

"Are Low Degree Lenses of purely Mythical Value?" Dr. H. M. Starkey, Chicago, Ill.

"Great Value of Weak Lenses in the Correction of Eye Pains," Dr. Julian J. Chisholm, Baltimore, Md.

"Sub-conjunctival Injections in the Treatment of Eye Diseases," Dr. Wm. E. Briggs, Sacramento, Cal.

"Fractures of the Orbit," Dr. J. F. Fulton, St. Paul, Minn.

"Cyclophoria—Its Detection and Treatment," Dr. George H. Price, Nashville, Tenn.

"Status of Skiascopy," Dr. H. V. Würdemann, Milwaukee, Wis.

"School Children's Eyes—A Plea for the Examination of every Child's Eyes when commencing to attend School," Dr. W. F. Southard, San Francisco, Cal.

"Iritis and its Treatment," Dr. Louis F. Love, Philadelphia, Pa.

"Some Observations upon Gould's Method of Managing Exophoria," Dr. Leartus Conner, Detroit, Mich.

"Conservative Treatment of Injuries of the Eyeball, with Cases," Dr. Lewis H. Taylor, Wilkesbarre, Pa.

"Treatment of Purulent Ophthalmia," Dr. X. C. Scott Cleveland, Ohio.

"Retinitis Pigmentosa," Dr. Dudley S. Reynolds, Louisville Ky.

"The Visual Zone of the Dioptric Media and its Study by Skiascopy," Dr. Edward Jackson, Philadelphia.

Report of the Committee on "The Value of Objective Tests for the Determination of Ametropia, Ophthalmoscopy, Ophthalmometry and Skiascopy," Dr. Edward Jackson, Chairman, Philadelphia, Pa.

ALBERT R. BAKER, M.D., Chairman,
122 Euclid Ave., Cleveland, Ohio.
LEWIS H. TAYLOR, M.D., Secretary,
41 S. Franklin St., Wilkesbarre, Pa.

Section on Dental and Oral Surgery.—The following papers are announced for this Section:

Address, by Dr. M. H. Fletcher.

"Professional Ethics," by Dr. Van Orden.

"The Lateral Incisor," by Dr. C. L. Goddard.

"The Teeth of our School Children—What shall be done to save Them?" by Dr. Jno. C. McCoy.

"Pyorrhea Alveolaris. What it is and what the Dentist can do for it," by Dr. L. L. Dunbar.

"Pyorrhea Alveolaris," by Dr. W. J. Younger.

"Remote Effects of Oral Lesions," by Dr. W. B. Sherman.

"The Systemic Factor in the Treatment of Dental Caries," by Dr. G. S. Dean.

"The Present and Future Status of the Dental Practitioner," by Dr. J. D. Hodgen.

"Operations on Congenital Cleft Palate," by Dr. Robert McLane.

"Random Thoughts on our Specialty," by Dr. A. E. Baldwin.

"Pathological Notes on Neoplasms of the Maxillæ, with Cases and Photographs," by Dr. Vida A. Latham.

"The Present Scientific Status of Hypnotism," by Dr. W. X. Sudduth.

Dr. R. J. Taft.

Dr. E. S. Talbot.

SOCIETY NEWS.

The Cleveland Medical Society.—Dr. William Pepper, of the University of Pennsylvania, will address the Cleveland Medical Society Friday evening, June 22, and will also give a clinic on the following forenoon in one of the hospitals in the city, to which the profession generally will be invited.

OSCAR T. THOMAS, Secretary.

The Indiana Medical Society.—The forty-fifth annual meeting of the Indiana State Medical Society will occur in Indianapolis, Thursday and Friday, May 17 and 18, 1894. The sessions will be held in Plymouth Church, southeast corner of Meridian and New York Streets. The meeting will be called to order promptly at 10 o'clock Thursday morning, May 17. The program this year promises to be a valuable one, and it is earnestly desired that there be a large attendance at the meeting. Arrangements have been made with the Central Traffic Association whereby the usual one and one-third railroad rate may be secured by those desiring to attend the meeting. In securing railway tickets, full fare will be paid to Indianapolis, the purchaser at the same time *requesting his ticket agent to furnish him with a certificate of such purchase.* This will be signed at Indianapolis by the Chairman of the Committee on Arrangements, which will entitle the holder to a return ticket at one-third the regular fare. Failure to obtain a certificate will necessitate the payment of full fare both ways. Good hotel accommodations can be secured in Indianapolis for $1.50 per day and upwards. All members expecting to present papers at this meeting must send the titles of such papers to the Chairman of the Committee on Arrangements not later than April 30.

FREDERICK C. WOODBURN,
Chairman of the Committee on Arrangements.

National Association of Railway Surgeons.—The following is the preliminary program of the seventh annual meeting of the National Association of Railway Surgeons, to be held in Harmony Hall, Galveston, Tex., May 8, 9, 10 and 11, 1894.

OFFICERS OF THE ASSOCIATION.

President: Surgeon W. J. Galbraith, Omaha, Neb.

Vice-Presidents: Surgeons E. R. Lewis, Kansas City, Mo.; Thomas H. Manley, New York, N. Y.; E. F. Yansey, Sedalia, Mo.; D. F. Stuart, Houston, Tex.; E. A. McGannon, Brockville, Ont., Can.; E. G. Cochran, Greenville, Tex.; W. R. Blakeslee, Forest City, Pa.

Secretary: J. M. Dinnen, Fort Wayne, Ind.

Assistant Secretary: J. H. Ford, Wabash, Ind.

Treasurer: R. Harvey Reed, Columbus, Ohio.

Executive Committee: Surgeons B. F. Wilson, Chairman, Slater, Mo.; J. B. Murdoch, Pittsburg, Pa.; G. L. Hoege, Fostoria, Ohio; Alexander J. Mullen, Jr., Michigan City, Ind.; J. B. Murphy, Chicago, Ill.; A. A. Thompson, Waxahatchie, Tex.; C. K. Cole, Helena, Mont.

Committee of Arrangements: Surgeons C. H. Wilkinson, Chairman, Galveston, Tex.; D. F. Stuart, Houston, Tex.; T. F. Wagley, Cleburne, Tex.; A. A. Thompson, Waxahachie, Tex.; C. C. Barrell, Galveston, Tex.

Committee on Transportation: Surgeons W. B. Outten, Chairman, St. Louis, Mo.; J. B. Murdoch, Pittsburg, Pa.; C. M. Daniels, Buffalo, N. Y.; Mr. Harry P. Robinson, Chicago, Ill.

ORDER OF EXERCISES.

Tuesday, May 8—Morning Session—10 A.M.

Opening of the seventh annual meeting. Surgeon C. H. Wilkinson, Chairman Committee of Arrangements.

Divine invocation.

Address of welcome, by his honor, the Mayor of Galveston.

Address of welcome in behalf of the citizens.

Response to the address of welcome. Dr. Alexander J. Mullen, Jr., Michigan City, Ind.

Delivery of the gavel to the President. Chairman Committee of Arrangements.

President's address. Dr. W. J. Galbraith, chief surgeon U. P. Railroad, Omaha, Neb.

Annual report of the Treasurer.

Tuesday, May 8—Afternoon Session—2 P.M.

Contributions to the study of fractures:

a, "Conservatism in the Treatment of Compound Comminuted Fractures of the Leg," by Dr. Geo. R. Dean, Surgeon R. & D. Railroad, Spartansburg, S. C.; *b*, "Compound Fractures," by Dr. Milton Jay, Chief Surgeon C. & E. I. Railroad, Chicago, Ill.; *c*, "Plaster-paris Splints to Fractures Simple

and Compound," by Dr. J. G. Buchanan, Surgeon Pennsylvania Company, Pittsburg, Pa.

Contribution to the study of anesthetics:

a, "Anesthesia (local and general) and its Proper Production," by Dr. E. A. McGannon, Surgeon G. T. Railroad, Brockville, Ont., Can.

Wednesday, May 9—Morning Session—9 A.M.

Contributions to the study of spinal and nervous injuries:

a, "Fracture and Dislocation of the Spine," by Dr. Thomas H. Manley, Surgeon C. P. E. & W. Railroad, New York, N.Y.; *b*, "Diagnosis of Injuries of the Cord and its Envelopes with and without Fracture of the Spine," by Dr. C. H. Hughes, Surgeon Mo. Pac. Railroad, St. Louis, Mo.; *c*, "Treatment of Injuries of the Cord and its Envelopes with and without Fracture of the Spine," by Dr. W. B. Outten, Chief Surgeon Mo. Pac. Railroad, St. Louis, Mo.; *d*, Medico-Legal Relations of Injuries of the Cord and its Envelopes, with and without Fracture of the Spine," by Clark Bell, Esq., Member Bar, New York, N. Y.

Contributions on miscellaneous subjects:

a, "Some of the Uses of Hot Water in Recent Injuries in Railway Surgery," by Dr. N. A. Drake, Surgeon C. R. I. & P. Railroad, Kansas City, Mo.; *b*, "Minor Surgery," by Dr. J. D. Myers, Surgeon C. & O. Railroad, Huntington, W. Va.

Wednesday, May 9—Afternoon Session—2 P.M.

Contributions to the study of injuries of the eye:

a, "Color Blindness," by Dr. D. Emmett Welsh, Surgeon G. R. & I. Railroad, Grand Rapids, Mich.; *b*, "Exhibition of New Tests for Simulated Blindness in One Eye," by Dr. James L. Minor, Oculist K. C. M. & B. Railroad, Memphis, Tenn.; *c*, "Evisceration vs. Enucleation, following Injuries of the Eye," by Dr. A. E. Prince, Surgeon Wabash Railroad, Springfield, Ill.

Contributions to the study of miscellaneous subjects:

a, "Rectal and Anal Surgery and its Relation to Railway Injuries," by Dr. S. G. Gant, Surgeon K. C. Ft. S. & M. Railroad, Kansas City, Mo.; *b*, "Should the National Association of Railway Surgeons become a Delegatory Body," by Dr. R. Harvey Reed, Consulting Surgeon B. & O. and Big Four Railways, Columbus, Ohio; *c*, "Quarantine and its Relation to the Railway Surgeon and Railway Surgeons Relation to Quarantine," by Dr. Van B. Thornton, Local Surgeon H. & T. C. Railroad, Hempstead, Texas.

Thursday, May 10—Morning Session—9 A.M.

Contributions to the study of spinal and nervous injuries:

a. "Litigation Psychosis," by Dr. Matthew D. Field, Surgeon Manhattan Railway Company, New York, N. Y.; *b*, "A Case that ought to have been one of Railway Spine and its Treatment," by Dr. C. M. Woodward, Surgeon C. M. & J. Railroad, Tecumseh, Mich.; *c*, "A Novel Case of Cerebral Traumatism," by Dr. J. R. Barnett, Surgeon C. & N.-W. Railroad, Neenah, Wis.; *d*, "A Case of Fracture of the Spine; operation followed by improvement," by Dr. John E. Sylvester, Surgeon C. H. V. & T. Railroad, McArthur, Ohio.

Contributions on miscellaneous subjects:

a, "The Evolution of Railway Surgery," by Dr. E. R. Lewis, Surgeon Wabash Railroad, Kansas City, Mo.; *b*, "Dressing of the Stump in Amputation," by Dr. A. B. Brumbaugh, Surgeon Pennsylvania Railroad, Huntington, Pa.; *c*, "Railways and Railway Surgery," by Clark Bell, Esq., New York, N. Y.

Thursday, May 10—Afternoon Session—2 P.M.

Contributions to improvements in appliances in cases of emergency:

a, "Improved Railway Stretcher," by Dr. R. Ortega, Chief Surgeon M. I. Railroad, Ciudad Porfirio Diaz, Mex.

Contributions on miscellaneous subjects:

a, "Thiersch's Grafts in Extensive Destruction of Soft Parts about Large Joints," by Dr. Henry W. Coe, Surgeon East Side Railroad, Portland, Ore.; *b*, "A Digest of 400 Consecutive Raiway Cases," by Dr. Howard J. Williams, Surgeon Central Railway of Georgia, Macon, Ga.; *c*, "Management of Burns and Scalds, with Cases," Dr. C. K. Cole, Chief Surgeon Montana Central Railroad, Helena, Mont.

Contributions to the study of spinal and nervous injuries:

a, "A Case of Spinal Injury with Rupture of Intestine; operation; recovery," by Dr. I. N. Warren, Chief Surgeon S. C. & N. Railroad, Sioux City, Iowa; *b*, "Concussion," by Dr. Geo. W. Cox, Surgeon S. P. Railroad, Brownsville, Ore.

Friday, May 11—Morning Session—9 A.M.

Contributions to the study of shock:

a, "Shock—its Phenomenal Results," by Dr. Willis M. Wilson, Surgeon B. & M. R. Railroad, Curtis, Neb.; *b*, "Clinical Cases—Shock, Hemorrhage, Tendon, Suture," by Dr John Van Duyn, Surgeon West Shore Railroad, Syracuse, N. Y.; *c*, "Treatment of Shock," Dr. James H. Letcher, Chief Surgeon O. V. Railroad, Henderson, Ky.

Installation of officers elect.

Friday, May 11, 3 P.M. Excursions on the bay; excursion down the island; excursions over to mainland. All members and accompanying members of their families invited.

Saturday, May 12—7 A.M.

Excursion to Houston, Austin, San Antonio. Through the courtesy of the management of the Houston & Texas Central, Gulf Colorado & Santa Fe, International & Great Northern and Southern Pacific Railways an excursion has been arranged and will be conducted under the auspices of Dr. D. F. Stuart, Chief Surgeon of the H. & T. C. Railroad and Dr. W. B. Outten, Chairman Committee on Transportation, and Dr. C. H. Wilkinson, Chairman Committee of Arrangements. Receipts for the annual dues for next year will be accepted for the transportation of members and their families on this excursion, the same as last year.

W. J. Galbraith, M.D., President.
C. H. Wilkinson, M.D.,
Chairman Committee of Arrangements.
J. M. Dinnen, M.D., Secretary.

Nebraska State Medical Society.—The twenty-sixth annual meeting of the Nebraska State Medical Society will be held in the chapel of the State University buildings, Lincoln, Nebraska, May 1, 2 and 3, 1894.

Officers: President, A. S. Von Mansfelde, Ashland; Vice-Presidents, B. F. Crummer, Omaha, Geo. L. Humphreys, Kearney; Secretary, George Wilkinson, Omaha; Corresponding Secretary, B. D. Davis, McCook; Treasurer, W. M. Knapp, Lincoln; Committee of Arrangements, F. D. Crim, H. B. Lowry, M. H. Everett, Lincoln.

Call to order; payment of dues; report of the Committee on Credentials and election of new members; reading of the minutes; report of the Committee of Arrangements.

President's address: "The Constitution and Code of the American Medical Association—Individual and Society Relations Thereto."

Annual reports of *a*, Secretary; *b*, Corresponding Secretary; *c*, Treasurer. Business requiring early consideration; report of the Special Committee on Sanitary Science; report of the Special Committee on Medical Legislation; report of Committee on Grievances; report of Committee on Necrology; miscellaneous.

Practice of Medicine: "The Diagnosis of Valvular Disease of the Heart," Dr. H. B. Lowry, Lincoln. Discussion, Dr. A. R. Mitchell, Lincoln; Dr. E. M. Whitten, Nebraska City.

Surgery: "Some Observations on Tuberculosis of the Osseous System," Dr. J. P. Lord, Omaha. Discussion, Dr. J. S. Butler, Superior; Dr. G. L. Humphreys, Kearney.

Obstetrics: "The Responsibility of the Obstetrician from a Gynecological Point of View," Dr. Sherman Van Ness, Omaha. Discussion, Dr. P. L. Hall, Mead.

Gynecology: "Endometritis, Pathology and Treatment," Mrs. M. H. Jonas, Omaha. Discussion, Dr. F. D. Crim, Lincoln; Mrs. E. S. Daily, Omaha.

Nervous and Mental Diseases: "The advancement of the Care and Treatment of the Insane," Mrs. Sophronia N. Lane, Asylum. Discussion, Dr. S. C. Spalding, Omaha; Dr. G. W. Johnston, Fairmont.

Anatomy and Physiology: "The Anatomy of the Reflexes with their Interpretation in Rectal and Genito-Urinary Diseases," Dr. Charles Allison, Omaha. Discussion, Dr. A. R. Mitchell, Lincoln; Dr. F. E. Coulter, Omaha.

Ophthalmology and Otology: "Optic Neuritis following La Grippe," Dr. D. C. Bryant, Omaha. Discussion, Dr. J. W. Bullard, Pawnee City; Dr. W. L. Dayton, Lincoln.

Materia Medica and Therapeutics: "The Therapy of the Respiratory Tract," Dr. W. H. Christie, Omaha. Discussion, Dr. E. M. Whitten, Nebraska City; Dr. W. B. Ely, Ainsworth.

Medical Jurisprudence, Medical Chemistry and Toxicology: 1, "Medico-Legal Aspects of the Social Evil." 2, "On the Legal Responsibility of the Physician upon Whose Certificate a Sane Person is Committed to an Insane Asylum," Dr. M. V. B. Clark, Sutton. Discussion, Dr. Chas. L. Kerr, Falls City; Dr. Claud Watson, Nebraska City.

Pathology and Histology: "Etiological Factors that Cause Pathological Changes," Dr. Wm. Protzman, Lincoln.

Discussion, Dr. George H. Littlefield, Syracuse; Dr. W. F. Milroy, Omaha.

Public Hygiene and Medical Legislation: "The Medical Law of Nebraska and its Enforcement," Dr. J. V. Beghtol, Friend. Discussion, Dr. B. F. Crummer, Omaha; Dr. F. D. Haldeman, Ord.

Dermatology: "Eczema," Dr. E. E. Womersley, Omaha. Discussion, Dr. W. O. Henry, Omaha; Dr. A. B. Anderson, Pawnee City.

Laryngology: "Adenoid Vegetation with Illustrative Cases," Dr. F. S. Owen, Omaha. Discussion, Drs. H. S. Burrell and George Wilkinson, Omaha.

"The Treatment of Asthma," Dr. J. Lue Sutherland, Grand Island.

"Lessons from a Few Surgical Cases," Dr. W. O. Henry, Omaha.

"Ulceration of the Stomach," Dr. F. E. Coulter, Omaha.

"The Conservative Treatment of Pelvic Disease in the Female," Dr. B. F. Crummer, Omaha.

"The Surgical Treatment of Large Vascular Nervi," Dr. A. F. Jonas, Omaha.

"Brief Thoughts on Surgical Methods in General Practice," Dr. M. L. Hildreth, Lyons.

"Memoranda—The Course and Diagnosis of Acquired Syphilis," Dr. H. Clayton Sumney, Omaha.

"Remarks upon Recent Aids to the Diagnosis and Treatment of Diseases of the Bladder, Ureters and Kidneys in the Female," Dr. J. E. Summers, Jr., Omaha.

"Three Functions of the Liver Normally and Pathologically Considered," Dr. J. S. Foote, Omaha.

"Legislation for the Prevention of Blindness," Dr. H. Gifford, Omaha.

"Detection of Sugar in the Urine," Dr. F. Martin Mueller, Omaha.

Report of Standing Committees; miscellaneous and unfinished business; election and installation of officers; selection of next place of meeting; banquet, Thursday evening.

The following constitutional amendments will need attention at this meeting: Amendment to Constitution, Article II, Sec. 2, by Dr. J. E. Summers, Jr.:

"That any legally qualified practitioner shall be eligible for membership in this Society, whatsoever his source of education, provided that he or she proclaims in writing adherence to no particular dogma or line of practice other than rational medicine."

Amendment to By-laws by Dr. A. S. von Mansfelde. Add at the end of No. 2:

"Except the Committee on Credentials which shall be composed of one member from each Congressional District and the Recording Secretary, who shall be ex-officio chairman of such Committee."

Transportation—All of the railroad companies have granted a reduction in rates—one and one-third fare for the round trip—on the certificate plan. Take certificate from ticket agents from whom tickets are purchased in going to the meeting. Have it countersigned by the Secretary, which will secure a return ticket at one-third fare.

GEOAGE WILKINSON, Sec'y.

MISCELLANY.

Medical Director Albert L. Gihon, U. S. Navy, delivered the address at the commencement of the Albany Medical College on the 18th instant.

Dr. M. L. James, of Richmond, Va., has retired from the professorship of Practice of Medicine of the Medical College of Virginia.

The Graham Matter of the Brain.—"Do you vegetarians claim that the use of unbolted flour bread is good for brain-workers?"

"Certainly. It stimulates the production of graham matter."—*Chicago Tribune.*

Dr. Corydon L. Ford, whose death was announced in the JOURNAL of April 21, left an estate estimated at $250,000. His will bequeathed $9,000 to the University of Michigan, the income to be used to purchase books for the general library and $3,000 to the Students' Christian Association. The remainder of the estate is to be distributed among his relatives and certain specified religious and missionary associations of the Congregational denomination.

Honorary Presidents International Medical Congress.—The International Medical Congress has appointed its Honorary Presidents for the ensuing Congress in Russia. The list is as follows: For America, Dr. J. B. Murphy, of Chicago; for Germany, Bergman, of Berlin; for Switzerland, Kocher, of Berne; for Ireland, Stokes, of Dublin; for England and Great Britain, Sir William MacCormac; for Austria, Mikulicz, of Vienna; for Scotland, Macewen, of Glasgow. Dr. J. B. Murphy, of Chicago, the American Honorary President, is well known to the profession through his work in abdominal surgery and the success of the intestinal anastomosis button, of which he is the inventor.

The D. Hayes Agnew Memorial.—The D. Hayes Agnew Memorial Committee, organized a year ago to secure a lasting memorial of Dr. Agnew in connection with the University Hospital, have pleasure in reporting that subscriptions have been promised of sufficient amount to give reasonable assurance of the speedy and successful carrying out of the project. The plan includes not only the Children's Ward (for the building of which this Associate Committee was established and for which it is so earnestly laboring), but also an amphitheater and ward class rooms, with wards for men and for women,—the whole to be a model in perfection of details and completeness of appliances, and thus a fitting representation of the wonderfully full and complete work of Dr. Agnew.

The State Legislature, at its last session, made an appropriation of $80,000 to the University Hospital for building purposes, provided that an equal sum of $80,000 be raised by the friends of the Hospital, and paid in cash, available for construction purposes. The Managers of the Hospital, appreciating the eminent propriety of our movement, have consented to give to the entire wing the honored name of D. Hayes Agnew. Toward the additional $80,000 to be so raised, about $60,000 can now be counted upon as available in cash on or before May 1, 1894, leaving only about $20,000 more to be secured by that time, so that building operations may begin this spring, and the State appropriation be drawn and expended within the two years contemplated in the Act.

It is to be hoped that, in addition to the building fund, there may also be secured a sum sufficient for the beginning of an endowment. Such a memorial will best attest the affection inspired by Dr. Agnew's life of usefulness and the example of devotion to his profession both as teacher and practitioner.

The grant by the Legislature is a recognition of the work done by the University and its Hospital, to which Dr. Agnew gave the best years of his busy life, and the subscription supplementing and securing that appropriation will show how his many friends, patients, and students honor his memory.

All those who desire to join in this memorial of a great surgeon and good man can do so by sending their subscriptions to the Treasurer, Mr. Eugene Delano, of Messrs. Brown Brothers, at the banking house, southeast corner of Fourth and Chestnut Streets, Philadelphia.

By order of the Committee,

J. S. MACINTOSH, D.D., Chairman,
J. G. ROSENGARTEN, Secretary,
WM. PEPPER, M.D., Provost of the University.

Resignation of Prof. Wm. Pepper as Provost of the University of Pennsylvania.—The following is the text of the letter of Prof. Pepper:

With deep thankfulness I recognize that the University has reached a stage of development and prosperity which justifies me in laying down the high office you intrusted to me more than thirteen years ago, and which I have held as long as it was possible to combine the administrative labors of Provost with the demands of medical teaching and practice. This time has now passed, and I beg, therefore, to tender my resignation to take effect after the coming Commencement.

The close of the current session will witness the completion of the formative period of the University. From a group of disconnected schools there has been gradually

organized a great academic body, complete in its unity and instinct with varied yet harmonious activities. Mutual confidence and coöperation have developed a system strong enough for effective central control, yet so flexible as to admit affiliation with many separate organizations. To our University is due the credit of establishing university extension in America, yet the important and successful society which controls this movement has no organic relations with the University, save that the Provost is *ex officio* the honorary president. The Wistar Institute of Anatomy and Biology, a magnificent memorial to the founder of American anatomy, has a separate charter and is not owned by the University, yet is governed by a board, the majority of whose members are appointed by yourselves. The University Hospital, which has grown so prosperously, is a special trust and administered by a board of twenty-two members, only four of whom are appointed by the Trustees of the University.

The Department of Archæology and Paleontology, under whose energetic operations there is developing rapidly a museum of high rank, is governed by a board of not less than thirty-six members, of whom only six are appointed by the Trustees of the University. Reference is made to these familiar instances to illustrate the admirable results which may develop under a system which excludes rigid control, and rests upon mutual confidence and a common devotion to a great cause.

It has been a chief aim of your Board to demonstrate to the people of this great Commonwealth that the University is truly the voluntary association of all persons and of all agencies who wish to unite in work for the elevation of society by the pursuit and diffusion of knowledge and truth. No less important has been the establishment of the principle that the University, so far from being a private and exclusive corporation, is essentially and organically a part of the municipality. The large future of the University was secured when, in 1872 and in 1883, City Councils voted, without a dissenting voice, the transfer to the University of splendid tracts of ground, in consideration of the establishment in perpetuity of fifty free beds in the Hospital for the poor of Philadelphia, and of fifty prize scholarships in the College, to be awarded to graduates of the public schools of Philadelphia. The subsequent accessions of territory which have brought the domain of the University up to fifty-two acres, in a compact body in the center of the city, have been the logical consequences of these great steps; and so faithfully have all the trusts and conditions been executed, that it has come to be recognized by the municipal authorities that it is more profitable to the city to give freely to the University anything in its power to bestow, which is needed for the development of that institution, than to dispose of it elsewhere, even at a great price. It needs only the resolute continuance of this wise policy to secure for the University full recognition as a branch of the city government, with a duly accredited representative of its great constituency in her Councils.

Progress has also been made toward the establishment of the essential principle that the University is in right, and should be in fact, the head of the educational system of the entire Commonwealth. We may fairly claim to have done much toward securing a recognition of the view that the encouragement of higher education, by the municipality and the Legislature, is as proper and important in the older communities of America as it has been decided to be in the newer States.

"While the unification of the University and the establishment of broad lines of policy may seem to be the most important work of the past thirteen years, it will be found that the resources of the University and the educational work in each department have been successfully promoted. In 1881 its property was fifteen acres, while at present there are owned or controlled by the University, in a continuous tract and solely for educational purposes not less than fifty-two acres. The values of the lands, buildings and endowment in 1881 may be estimated at $1,600,000; it is now over $5,000,000. Prior to the date of the late John Henry Towne's great bequest, the University had never received a single large gift or legacy. During the current year ending Sept. 1, 1894, there will be acquired in lands, buildings, money and subscriptions not less than $1,000,000. The members of the teaching force in 1881 numbered 88, and the students in all departments 981; at this time the former are 268 and the attendance has reached 2,180, representing every State of the Union and no less than thirty-eight foreign countries. The College Department has attained a national distinction, and its complete re-organization, which has now been accomplished successfully, gives sure promise of sound and rapid progress. The Medical School has been advanced to preëminence in equipment and prosperity, while plans now maturing will place it abreast of the great schools of Europe. The Law School has effected the prolongation and elevation of its curriculum, and has deservedly won national repute. Encouraging progress has been made toward providing an admirable building on an approved site, so that the future eminence of the school is assured. Gratifying reports may be made of the position of the Dental and Veterinary Departments; and well considered plans for their still further development need only time for their fulfillment. Upon this vigorous basis rests the Department of Philosophy, which although organized as late as 1884, and still without special endowment, has already 154 students. It represents the University in its highest and best intellectual life; it affords inspiration to teachers and students; it has enabled us to extend the richest privileges of the University to women on equal terms with men; it points the way to large endowment of rich research and advanced scholarship."

The necessity of dormitories to the development of the best university life has come to be clearly recognized by your Board, and generous friends stand ready to supply this important need.

It is pleasant, in these days of strength and prosperity, to reflect upon those of doubt and struggle, when ridicule met the assertion, the truth of which is now freely conceded, that nowhere can a great university be developed so favorably as in a great city.

In closing my term of service as Provost, I may be permitted to allude to the motives which impel me to this step. The labor of these thirteen years has been so severe, in connection with my professional duties in the Medical School and with the extensive medical practice necessary to provide the funds which have enabled me to initiate nearly all of the large movements undertaken during this time, that I have often felt that my life was specially preserved for the work. It has, however, been growing evident for several years past that the time was approaching when the immense extent of the University interests would demand the undivided activity of the most energetic man. It has now become necessary for me to choose between administrative work and medical science, and my devotion to the latter has determined the choice.

No official has ever been associated with more affectionate and indulgent colleagues, or has enjoyed more loyal coöperation than has been extended to me. I am confident that the choice of my successor will be wisely and promptly made. I do not leave the service of the University, but will remain, with more free hands, ready to serve her every interest with utmost devotion.

I invoke upon your continued labors in the government of this grand institution the richest blessings of Almighty God, who has in the past so signally guarded it.

April 23, 1894. William Pepper.

THE PUBLIC SERVICE.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from April 14, 1894, to April 20, 1894.

Capt. Ogden Rafferty, Asst. Surgeon, leave of absence granted is extended eighteen days.

Capt. Alonzo R. Chapin, Asst. Surgeon, will report in person to the President of the Army Retiring Board at Ft. Bliss, Texas, for examination by the Board. By direction of the President.

First Lieut. Charles Willcox, Asst. Surgeon, is relieved from temporary duty at Angel Island, Cal., and will rejoin his proper station, the Presidio of San Francisco, Cal.

First Lieut. Harlan E. McVay, Asst. Surgeon, par. 2, S. O. 68, A. G. O., is so amended as to direct him, on being relieved from duty at San Carlos, Ariz., by First Lieut. Straub, Asst. Surgeon, to report for duty at Angel Island, Cal., instead of Ft. Huachuca, Ariz.

First Lieut. Allen M. Smith, Asst. Surgeon, will be relieved from duty at Ft. Custer, Mont., at the expiration of his present leave of absence, and will report in person to the commanding officer, Ft. Reno, Oklahoma Ter., for duty at that post.

First Lieut. James M. Kennedy, Asst. Surgeon, is relieved from duty at Ft. Riley, Kan., and ordered to Ft. Custer, Mont., for duty.

Major Peter J. A. Cleary, Surgeon, so much of par. 13, S. O. 79, A. G. O., as relates to him, is so amended as to direct him, on being relieved from duty at Ft. McPherson, Ga., to report for duty at Ft. Wingate, N. M., instead of Ft. Custer, Mont., for duty at that post, to relieve Major Washington Matthews, Surgeon. Major Matthews, on being so relieved, will repair to Washington, D. C., and report in person to the Surgeon-General for temporary duty.

PROMOTION.

Capt. James C. Merrill, Asst. Surgeon, to be Surgeon with the rank of Major, March 13, 1894, vice Bartholf, retired from active service.

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ORIGINAL ARTICLES.

THE MEDICAL HISTORY OF CHRISTOPHER COLUMBUS,

AND THE PART TAKEN BY THE MEDICAL PROFESSION IN THE DISCOVERY OF AMERICA.

Read by the Author before the Section on General Medicine of the First Pan-American Medical Congress, Washington, D. C., Sept. 7, 1893.

[Published simultaneously in the Spanish language.]

BY A. M. FERNANDEZ DE YBARRA, M.D.

NEW YORK.

Corresponding Member of the Spanish Medico-Chirurgical Academy of Madrid, Spain; the Argentine Medical Circle of Buenos Ayres, South America, and the Society for Clinical Studies, of Havana, Cuba; Official Delegate of the Medico-Legal Society of New York to the First Medical Congress of the Island of Cuba; Executive Assistant Secretary-General of the First Pan-American Medical Congress.

"*Amicus Plato, sed magis amica veritas.*"—ARISTOTLE.

One of the most important events in the history of humanity, and perhaps second only to the birth of Christ in beneficial results, is without any species of doubt the discovery of America by the Spaniards under the leadership of Christopher Columbus. A number of times willing and unwilling visitors certainly did come before that date from the Old World to the New. In the fifth century of the Christian era, a few Buddhist missionary priests came, either directly from China to a country which they called Fusang, and known to us now as Mexico, or they first, and most probably, settled in Japan and afterwards crossed from there to the Pacific coast of America; the voyages of the Northmen in the tenth and eleventh centuries, the traditional narratives of which tell us of the deeds of the daring sailor, Eric the Red, and the discovery of Helluland, Markland, and Vinland by his famous son, Leif Ericsson; the story of the Venetian brothers, Nicolo and Antonio Zeno, the first wrecked in 1390 upon one of the Faroe Islands, his subsequent visit to Greenland and return, and the second embarking on an unsuccessful voyage of discovery in the Atlantic Ocean, about the year 1400, to verify some fishermen's reports of the existence of land a thousand miles or more to the west from the Faroe Islands; the old and often repeated rumors concerning the fancied Island of St. Brandan, which several Portuguese and Spanish captains imagined they had beheld beyond Madeira; the seemingly-truthful statement in regard to the Spanish pilot, Alonzo Sanchez de Huelva, who, sailing in 1484 (which should be 1474) "one year more or less," from the Canaries to Madeira, had been tempest-tossed by violent easterly winds upon an unknown island (the Island of Hispaniola or San Domingo), where he landed, took an altitude, and wrote an account of all he saw, and all that had occurred in the voyage; he succeeded in returning, arrived at Terceira (one of the Azores) sick and worn out, and soon after died, leaving Columbus, who had hospitably received him in his house and nursed him, heir to his papers.

All these, and more, pre-Columbian voyages, legendary reports and fanciful descriptions of America are completely divested of true historical importance, and did not contribute a mite to our geographical knowledge or to the betterment of mankind. To speak of them as to implicate, in any sense whatsoever, that they constitute a *discovery* of America is perfectly absurd. To expatiate about them with the mental reservation of robbing Columbus of his well-earned title of discoverer of the New World is the height of folly. In 1492 the American continent was to a certain degree as unknown to the rest of the world as the nebulous inhabitants of the planet Mars are to us to-day.

On the present four hundredth anniversary of that paramount event in history, almost all classes and conditions of men have endeavored to bring forth their representatives who, in some way or another, had anything to do with it. Mariners are still singing the wonderful skill and intrepidity of their seafaring companions of the fifteenth and sixteenth centuries. The military have spoken of their famous captains, and with minute details referred to their heroic feats and glorious conquests, not always wise or even right. The clergy have told us of the first American bishops, large numbers of pious and lion-hearted missionaries, and the numberless martyrs sacrificed in our luxuriant forests. Politicians have pointed out the many examples of good, indifferent, bad, and very bad rulers, together with chieftains and leaders totally destitute of diplomatic tact. Lawyers have shown who were at that time eminent legislators, and put on record the notable judicial contests arising in consequence of the discovery of America. Physicians only have remained silent in this universal revival, when we, as a class, contributed very largely to the realization of the constant dream of a great genius, thought then by almost every one but a distinguished Italian physician and a modest Spanish village doctor to be merely a madman.

If modern anthropological science can justly boast of having made clear the intimate relations existing between the shape, volume, and minute structure of the internal organs of man and his outward manifestations, both physical and psychical, it is evident that in speaking of such a profoundly important historical figure as Christopher Columbus, an humble attempt to examine his personal appearance, temperament, physical ailments, and the cause of his untimely death may greatly help a more accurate appreciation of his mental characteristics and moral nature.

First, as to the date of his birth. This is a *vexata questio* which it would be out of my power in the limits of this short paper to discuss. Washington Irving, relying upon the evidence of Andrés Bernaldez,

an historiographer and intimate friend of Columbus, states it to be about 1435 or 1436. Don Fernando, the Admiral's second son and his most faithful biographer, relates that in a letter written by his father to the King and Queen of Spain, dated 1501, he declares that he had then been forty years at sea, and in another letter that he was fourteen years old when he first went to sea; so that allowing a year either way for probable inattention to circumstantial details, we get the date of his birth, fixed by his own hand, at about 1447. If we take into consideration that he did not go to sea during his seven years of patient waiting in Spain,—from 1485 when for the second time he entered that country from Portugal, to 1492 when he set sail westward on the Sea of Darkness—we must then acknowledge that in referring in 1501 to his being forty years at sea, he did not probably reckon the time spent in surmounting the difficulties encountered at the court of Ferdinand and Isabella. This would bring us to 1440 as the date of his birth; but if we make a calm and philosophical analysis of the expression, "being forty years at sea," from a sailor who had the year before arrived, a prisoner in fetters, poor, sickly and dejected, from his third voyage across an unknown ocean, and bearing in mind his former unequivocal statement that he had "followed the sea for twenty-three years without being on shore any space of time worth accounting," in which period he had been to and fro upon the Mediterranean, the Grecian Archipelago, France, Flanders, the coast of Guinea, the Canary Islands, Madeira, Porto Santo, the Azores, Cape Verde Islands, England, Ireland, Iceland, and sailed a hundred leagues beyond this "Ultima Thule" of Ptolemy, we will be forced to admit that that phrase only means *a sailor of forty years' experience*, the same as any old professor, architect, lawyer, or physician might express himself in like circumstances regardless of the few years spent in traveling, sickness, or some temporary occupation.

The place of his birth was the city of Genoa.

From the accounts of his personal appearance given by his son Fernando, Las Casas, Andrés Bernaldez, Pietro Martire d'Anghiera, the Portuguese historian João de Barros, Agostino Giustiniani, Antonio Gallo and others who knew him well, I gather that Columbus was a man of commanding presence, tall and well built, with fair ruddy complexion somewhat freckled, oval face with rather prominent cheek bones, broad and high forehead, medium-size mouth, aquiline nose, grayish-blue eyes, very light reddish hair and beard prematurely turned gray. He was of a genial disposition, courteous and graceful, his conversation agreeable and interesting to such a point that strangers were quickly attracted and felt at ease. An indefinable air of dignified command surrounded him, and the magnetism of his noble soul was perceptible in the tender glance of his glowing eyes, when his religious enthusiasm was kindled by the divine spark of genius that abided in him. Of a great nervous susceptibility, his mind was highly imaginative and poetical. Naturally religious, he was temperate in eating and drinking and puritanical in his habits.

My search for particulars regarding the life of Columbus prior to his arrival in Portugal is far from satisfactory. From the period of his first going to sea, which was about 1460, until the year some biographers say his vessel was burned near the Portuguese coast not far from the city of Lisbon, nowhere in history have I met with a distinct mention of his name. We have positive evidence, however, that in 1472 he was in the city of Savona, Italy, from the fact of his signature being appended as witness to the will of one Nicolo Monleone, under date of March 20 of that year. It appears very probable that in 1469 he took part, under the command of a French vice-admiral of the name of Caseneuve, in a successful sea fight to capture several Dutch ships returning from the herring fishery in the Baltic. We find him afterward in a terrible naval engagement between Lisbon and Cape St. Vincent, trying to take possession of four richly laden Venetian galleys on their return from Flanders, the desperate struggle lasting from morning till evening, the hand grenades and other burning missiles used in the battle caused at last a general conflagration among the vessels, which having been lashed together with iron grapplings, could not be separated, and the crews were compelled to leap into the water to escape the fire. Columbus' son, Fernando, goes on to say that "his father, who was a good swimmer, finding himself at the distance of two leagues from land, seized an oar, and by its aid succeeded in reaching the shore." It was close at hand to Lisbon, where he went and there made his abode. This happened in the year 1470 or early in 1471, and in 1473 he married the Portuguese lady, Philippa Moniz de Perestrelo, and went to live with her at Porto Santo, a small island on the Atlantic Ocean, twenty-five miles northeast of Madeira. There his son Diego was born in 1474.

The subject of the medical history of Columbus is a barren one, so barren indeed that it has never before been touched upon. I asked the present Duke of Veragua, and such living sterling biographers of the illustrious Genoese navigator as Mr. Henry Harrisse, Mr. José M. Asensio y Toledo, Professors John Fiske and C. K. Adams, Mr. Justin Winsor and Mr. Cesareo Fernandez Duro, and they all answered me that they did not know of anybody who had investigated the medical aspect of the life of Columbus. I consulted the librarians of the Smithsonian Institution at Washington, Lenox and Astor Libraries of New York and the Public Library of the City of Boston; I searched carefully all the old standard historical authorities, but mighty little did I find, and here it is embodied. I must, however, acknowledge my indebtedness to a recent monograph of Dr. Calatraveno, of Madrid, Spain, for many things I say in this paper about the part taken by the medical profession in the discovery of America. Nearly a year of constant inquiry and exploration in this unproductive field has resulted in what I venture to call my contribution to this first Columbian Pan-American assemblage of scientific men.

The piratical character of the seafaring life of Columbus' time, and the peculiar construction of the vessels, necessarily exposed its followers to unceasing hardships, privation and many unavoidable dangers to health. The severity of this early manner of living in a man of such a well-marked sanguine temperament as that of the immortal sailor must have very insidiously tended to undermine his naturally strong constitution, after "being at sea twenty-three years without remaining on shore any space of time worth accounting," and render him liable, at the age of 46 years, to the ailments and sicknesses he

subsequently suffered during his four voyages of discovery to America; to which must be added the grief, disappointment, mental anxiety and moral depression he endured, altogether combining in the production of the chronic disease that put an end to his imperishable career at a comparatively premature period of life.

Regarding hereditary predisposition to disease, I may safely say he had none. His father died at an extreme old age (in 1496 or 1498) and his mother a few years before. He was the eldest of five children, four boys and a girl, and not one of the others showed hereditary taint. His parents belonged to the healthy, sound, hearty and frugal types of the Ligurian peasantry.

On Friday, August 3, 1492, Columbus sailed westward from the little seaport of Palos de Moguer, Spain, to plough the Sea of Darkness in quest of a New World. On Friday, October 12 of the same year, he discovered America, and also on Friday, March 15, 1493, he dropped anchor, back from his mission, at the same little harbor of Palos. He spent 225 days in this first round trip to the Western hemisphere, in which time I have found no record whatever of his having suffered any sickness, except casual references to "sore eyes." This slight and transitory ocular affection which he often experienced afterwards, I consider to have been probably due to blepharitis, or styes, or to granular ophthalmia, brought on by straining the eyes in search of land in a diaphanous atmosphere where the sun's rays of light are most intense. Perhaps the Admiral's leaning toward albinoism also contributed to it. His excellent eyesight at night seems to lend weight to this opinion of mine.

He undoubtedly suffered great anxiety, tribulation and mental anguish when the crews began to murmur, and finally became openly impatient and mutinous at not finding land; but this prejudicial moral effect on his health must have been entirely extinguished by the joy, satisfaction and pride of having succeeded in his stupendous enterprise. The two shabby tricks of Martin Alonzo Pinzon, captain of the caravel *Pinta*—by far the best sailer of the three—when on the 20th of November, sailing along the coast of beautiful Cuba, he treacherously deserted his chief, and on the 12th of February he surreptitiously abandoned him again to bring the news of the discovery home first, must have also caused Columbus no little pain and dejection.

He put to sea again, on his second voyage of discovery, from Cadiz, Sept. 25, 1493; this time with a fleet of three galleons or carracks and fourteen caravels, carrying 1,500 people on board, instead of the 120 who accompanied him in his former unparalleled hazardous cruise.

This large number of men—among whom were many aristocratic young fellows, daring, supercilious, irascible and obstinate hidalgos, left without occupation at the end of the war with the Moors—were placed under the medical care of Dr. Diego Alvarez Chanca, a distinguished practitioner of great reputation of the city of Seville, who was also Physician-in-Ordinary to the King and Queen of Spain, and had attended their firstborn, Princess Isabella (who afterwards became Queen of Portugal), during her serious illness the year before. Speaking of him in a memorial addressed to Ferdinand and Isabella, dated Jan. 30, 1494, Columbus wrote: "You will inform their Highnesses of the continual labor that Dr. Chanca has undergone, from the prodigious number of sick and the scarcity of provisions; and that, in spite of all this, he exhibits the greatest zeal and benevolence in everything that relates to his profession. As their Highnesses have intrusted me with the charge of fixing the salary that is to be paid to him while out here (although it is certain that he neither receives, nor can receive anything from any one, and does not receive anything from his position equal to what he did receive and could still get if he were in Spain, where he lived peaceably and at ease, in a very different style from what he does here), I have, nevertheless, not ventured to place to the credit of his account more than fifty thousand maravedis (about $725) per annum, as the sum which he is to receive for yearly labor during the time of his stay in this country."

The letter or report of this learned and magnanimous man to the Chapter of Seville, from which I quote two passages further on, is the first scientific monograph written about America, and worthy of careful perusal.

On the 27th of November the fleet arrived in the harbor of La Navidad, in the Island of San Domingo, and found the little fortress completely destroyed, and each and every one of the thirty-eight men left there on the first voyage had been massacred by the native Indians. Columbus caused to be built a neat little town, to which the name of Isabella was given, and remained in this island until April 24, 1494, when he put to sea again and discovered Jamaica (May 3), and visited Cuba for the third time; returning from there he passed by all the southern coast of Jamaica and Hispaniola, and discovered the little islands of Beata, Saona and Mona.

The day after leaving this last island, in the passage between San Domingo and Porto Rico (Sept. 25, 1494), worn out with the toil and hardships of a five months' cruise among people who, though very kind and generous, could not afford him the relief and comfort he so much needed, and in which time his incessant watching, nervous excitement and high hopes of finding large quantities of gold and spices had sustained him wonderfully, the inevitable reaction at last overtook him, and his whole system suddenly collapsed. "He lay in a stupor, knowing little, remembering nothing, his eyes dim and vitality oozing, until the little fleet sorrowfully, but gladly entered the harbor of Isabella." Columbus himself acknowledges that for thirty-three days he had slept next to nothing, when he began to feel very tired and fell into a lethargical state which almost deprived him of his life. He remained sick very nearly five months, under the care of Dr. Chanca.

In the early part of April of that year he had been seized with intermittent fever at Isabella, where the same principles of heat, humidity, porosity of the soil, and presence of decaying vegetable matter which gave an extraordinary fecundity to the uncultivated fields, worked havoc among the Spaniards. Many of them are also said to have suffered at La Vega under the torments of a disease called "the scourge" (syphilis?), the origin of which, whether American or European or Asiatic, has been a subject of great dispute for over three centuries. Dr. Chanca, in his letter to the Chapter of Seville, expresses himself on the situation thus: "One-third of our people have fallen sick within the last four or five days, which I think

has principally arisen from the toil and privations of the journey, and another cause has been the variableness of the climate." In another place he says: "The Admiral had at one time determined to leave the search for the mines until he had first dispatched the ships which were to return to Spain on account of the great sickness which had prevailed among the men." Does he refer here to venereal diseases? I incline to the affirmative, but in the sense of gonorrheal and not syphilitic diseases. Concerning his first statement that one-third of the colonists had fallen sick in four or five days, I firmly believe it was due to the bad quality of the provisions brought from Spain, and to malarial infection, not very well understood in those days. The miraculous *pulvis febrifugus orbis americani* was not yet known to Europeans. The existence and wonderful virtue of "quinquina,"—which later on saved the life of Charles II, of England, Louis XIV, of France, and Friedrich the Great—were then only known to the native inhabitants of undiscovered Peru.

What was that dangerous disease from which Columbus did not entirely recover for nearly five months? Was it a disease of the nervous system? The only affections of that kind most likely to have developed are acute softening of the brain or idiopathic meningitis. But acute softening occurs always in very old persons, is apt to be preceded by mental confusion, a feeling of numbness, and some slight impairment of motion; and in idiopathic meningitis there are from the beginning an intense headache, vertigo, nausea and vomiting. These two diseases also run their courses generally in a short time, the usual termination in acute meningitis being death; cerebral softening always leaves behind permanent disorder of the mental, sensory or motor functions.

Could it have been scurvy? Decidedly no, because although scorbutus was in those days a very familiar disease among soldiers and sailors, arising from a deficiency of fresh meat or vegetable diet; and sometimes to be found also in badly ventilated, dark, and damp prisons, owing to the want of proper assimilation of food, neither insomnia, stupor, nor delirium form a part of the onset of this disease. Besides, scurvy is so slow and gradual in its development that the patients do not know when it begins.

In the absence of a clinical history of the case, let us scrutinize a little more the simple historical account of the disease. In going from Mona to Porto Rico, Columbus' fatigue and weakness and want of proper food "cast him into a dangerous disease between a pestilential fever and lethargy, which deprived him of his sense and memory." This is his own way of expressing his malady. It certainly was then one of the following three low-type fevers—typhus, typhoid, or relapsing.

We must not lose sight of the fact that he had just got over a protracted attack of paludal poisoning, which consequently left him in an anemic and debilitated condition at the time of embarking in this five months' cruise; thus offering an inviting soil for the favorable incubation of a specific, blood-disorganizing fever such as the above named ones.

Not knowing the exact bodily temperature, nor the characteristics of its daily variations (and for the best of reasons,—the clinical thermometer had not yet been invented), nothing whatever in regard to the peculiarities of the pulse, the actual condition of the skin, the tongue, the bowels, the presence or absence of eruption, epistaxis, lung symptoms, nausea or vomiting, the anomalies of the urinary excretion, etc., we can not make a good differential diagnosis between those three low, specific fevers. As a rule, we find in all of them the same symptoms of general malaise, weakness, drowsiness, at the beginning of the disease; but my opinion is, however, that it was typhus because of the prolonged convalescence, which must have been due to some pulmonary complication, partial paralysis, scurvy, dysentery, suppurative inflammation of parotid, submaxillary or inguinal glands, or more probably of the joints. There is another important circumstance which leads me to make the diagnosis of ship fever, and that is that Columbus, as a general rule, very seldom went ashore but remained on board while waiting at the different harbors, coves, anchorages, and roadsteads, thus necessarily exposing himself more to the infection than the average of his companions, whose nervous systems could not have been in such an unstrung and depressed state as his.

When Columbus recovered consciousness at Isabella, he found his dear brother Bartholomew, whom he had not seen for six years, seated by his bedside and tenderly nursing him. This happened on the 8th or 9th of October, which shows that the stupor lasted during the first two weeks of the disease—another diagnostic symptom in favor of typhus.

Early in March, 1496, the immortal navigator sailed for Spain; but he did not arrive there until June 11, having exhausted all their provisions and the famine was such that the crews came near eating up some of the thirty or more Indian captives whom they were taking to Spain. The haggard and starving party dropped anchor in the same harbor of Cadiz, from which many of them had joyously set sail with Columbus two years, eight months, and sixteen days previously.

Columbus started on his third voyage of discovery with a fleet of six ships, carrying about 200 men besides the sailors, from the little sea-port of San Lucar de Barrameda on May 30, 1498. On June 21, at the island of Ferro (the most westerly of the Canaries) the Admiral divided his fleet, sending three ships directly to Hispaniola, while with the other three he steered southwest. Prosecuting his voyage toward the Cape Verde Islands, in the last days of June, and "as he advanced within the tropics, the change of climate, and the close and sultry weather, brought on a severe attack of the gout, followed by a violent fever," says Washington Irving. On the 31st of July he discovered the Island of Trinidad, and caught a glimpse of terra firma at the delta of the Orinoco River; coming out from it through the passage which he named Dragon's Mouth (Boca del Dragon), during the second week of August, "he suffered a great deal from gout and ophthalmia," says Navarrete.

These two are the first distinct and positive historical references to Columbus suffering from gout. As for the transitory ophthalmia, I have already stated my opinion about it, only adding that it is a frequent complication of rheumatism but not of gout. Now I shall endeavor to prove that Christopher Columbus was never affected with gout, which is contrary to the firm belief of all accepted standard non-professional authorities.

Gout is more decidedly hereditary than rheumatism, and occurs in those who live high or drink

large quantities of malt liquor, or is seen in persons whose systems have been impregnated with lead. The greatest maritime genius of the fifteenth century was of too humble birth to have inherited the gouty diathesis, and too frugal in his habits to have acquired a malady the result of over-indulgence in the pleasures of the table, especially when cruising with very scanty provisions; surely there could not have been much lead in his system. Gout is characterized by the occurrence of paroxsyms of severe pain in a small joint,—the great toe usually. Gout in the foot is called *podagra;* gout in the hand, *chiragra;* and gout in the knee, *gonagra.* But Columbus suffered pain in several joints, of the upper as well as the lower extremities, whose movement was slow, rigid, and jerking, so that it was accomplished with difficulty, and his disorder therefore could not very well be placed under any of these three Latin divisions of gout.

There are yet two very important diagnostic factors against the theory of gout, viz., the season of the year in which exists the greatest tendency to the occurrence of the seizures (winter), these two first attacks taking place in the middle of the summer, and moreover that we meet in the course of the distemper with no cardiac complication, at least no valvular affection, as so constantly happens in rheumatism, and which sequel was the ultimate result of the disease that launched Columbus into eternity; and furthermore, in complete possession of all his mental faculties, which does not occur in gout where the morbid changes induced in the kidneys give rise to cerebral symptoms at the time of death.

The Admiral arrived at Isabella on the 30th of August, was immediately put in irons and thrown into prison by Bobadilla, who had come from Spain a week before. While confined in prison, and deprived of intercourse with any one, loaded with fetters and chains, in the fort of the little town, he was sick for several days, probably with intermittent fever or rheumatic pains, improperly called gout. He was put on board a vessel and sent to Spain early in October, 1500, arriving at Cadiz on a December day, and as he passed, his stately and venerable figure burdened with shackles and chains, through the streets of that city, he awakened a great popular outburst of sympathy for him and indignation at his persecutors, which reproof immediately repercussed in the wealthy cities of Seville and Granada.

Fortunately the passage had been calm and fair, and of but moderate duration, rendered also less disagreeable by the kind treatment of Alonzo de Villejo, to whom he was given in custody.

While on board the ship he had written a long and eloquent letter, full of pathos, to Dona Juana de la Torre, the nurse (*ama*) of Prince Juan, a lady high in favor with Queen Isabella, to whom her brother Antonio, a fellow-voyager of Columbus, straightforth carried the epistle on landing. In studying the ideas and wording of this remarkable letter, I find that his reason was just beginning to lose equipoise under the strain of the great humiliation he was then enduring, and the disordered condition in which his unexpected, unwarranted, and unworthy arrest had thrown all his private affairs. This clouded state of his intellect suffered a more aggravated relapse on two or three other occasions, when in moments of despair and heartrending anguish his religious enthusiasm completely overpowered his understanding, and of which I will speak later on.

During the seventeen months elapsing between his arrival from the third voyage and his departure again on the fourth, not a word, that I know of, is said in history about Columbus being afflicted with gout, which is a strong argument against the theory of his suffering from that malady. When much better fed, in company of cavaliers and rich men, he should have had more paroxsyms of that "eminently respectable disease," as Sydenham used to call it, than when living as a sailor on strange seas, short of the most necessary provisions.

The equipment of the fleet on the fourth and last voyage consisted of four small caravels with crews numbering, all told, 150 men. Columbus' brother Bartholomew, and his younger son Fernando, then a boy of fourteen, accompanied him. They sailed from Cadiz on the 11th of May, 1502, and on the 7th of November, 1504, after a tempestuous voyage and narrow escape from shipwreck, he landed back at San Lucar de Barrameda, so sick and thoroughly worn out that he could not personally go to Court to give an account of his new discoveries, but had to send in his place his youthful son, Fernando.

While sailing along the coast of Honduras, on the middle of August, 1502, there was an incessant tempest with heavy rains and such thundering and lightning that "it seemed as if the end of the world was at hand." The vessels had been so violently tossed about that their seams opened, and the provisions were damaged by the rain and by the leakage. During a great part of this time Columbus "suffered extremely from the gout, aggravated by his watchfulness and anxiety." His illness did not prevent him, however, from attending to his duties; he had a small cabin constructed on the stern of his vessel, from which, even when lying down on his bed, he could keep a lookout and direct the course of the ships. Columbus himself says that "many times he was so ill that he thought his end approaching."

The little fleet at last succeeded in passing the Cape Gracias á Dios on September 14, after struggling with the wind and the waves and the currents for about forty days. When on the coast of Veragua (Republic of Costa Rica), on the middle of October, many days of constant mental disturbance and nights of sleepless anxiety, preyed upon a constitution undermined by a slow blood poison, by grief and disappointment, by hardships, by unhygienic surroundings, and by want of proper treatment, finally producing an illusory vision, deemed by Columbus in his religious conceit of private revelation to be really God-sent and supernatural. In a letter to the sovereigns of Spain he gives a very solemn account of this hallucination, in which he heard in the course of a vivid dream a piteous voice reminding him of Scriptural passages to comfort and encourage him to trust in the Almighty. Such psychical perturbation can easily be explained if we take into consideration Columbus' highly imaginative cerebration, his exalted religious conceptions, his daily devotional exercises, and his deep-rooted belief that he was the chosen one from among men to carry the light of the true faith into far-distant, unenlightened and pagan lands. This favorable field, when well ploughed by a chronic and painful disease, and harrowed by the iron teeth of grief, could without difficulty produce a momentary phonomania. Like the firm trust

of all impassioned religious or political reformers, his sublime reliance in his lofty predestination certainly served him to overcome the multitude of obstacles he found in his path. And here we find the proof once more of the undiscernible and undefinable boundary between insanity and genius.

Whilst visiting Jamaica in the latter part of June, 1503, in which island he was obliged to spend a year, Columbus suffered another attack of the so-called gout, and malarial fevers of long duration, on the shores of the harbor of Santa Gloria, known to-day as St. Anne's Bay, which rendered him a cripple.

During all this fourth voyage his mental and physical condition was very much weakened, though hope, to be sure, had not altogether departed from his ardent and sanguine nature; but it was a hope that had experienced many reverses, and its pinions were sorely clipped. His voyages of discovery always involved hardships enough to wear out the strongest human frame, having to navigate among unforeseen dangers, without chart or pilot or previous knowledge of the countries, their inhabitants or language; to keep a constant and anxious watch at all hours, in all kinds of weather, subject to the caprices of the wind and without proper food. Age was already rapidly making itself felt when Columbus undertook this, his last, and most disastrous cruise (55 years old), the ultimate ten years of which were filled with care, physical ailments, and troubles of many sorts. For several weeks before he landed back at San Lucar de Barrameda, his tiny ship was thrown hither and thither in mid-ocean by violent winds and hill-like waves, combined with tropical showers; all that time Columbus was suffering the most excruciating pains from his old malady, until his crazy and shattered little bark anchored in the harbor, with her haggard, emaciated, crippled and almost blind master aboard.

From San Lucar he had himself conveyed to Seville, where he hoped to enjoy the much-needed rest of mind and body, and to recruit his health; but fortune continued to frown upon him, for he ascertained on arriving at that city that all his private affairs were in a state of confusion and entanglement. Since he had been sent to Spain from San Domingo, shackled like the vilest of culprits, when his house and effects had been seized and confiscated by order of Bobadilla, his rents and dues had been unlawfully retained in possession of Governor Ovando, the successor of Bobadilla in command of the Island. He was, therefore, in actual penury. He remained at Seville during the rest of that winter and part of the following spring, a victim of his chronic and painful illness.

At the beginning of May, 1505, feeling a little better, he went with his brother Bartholomew to Court, then sojourning at Segovia, to personally plead for his rights. While there "he was once more confined to his bed by a tormenting attack of the gout, aggravated by the sorrows and disappointments which preyed upon his heart." From this couch of anguish he addressed one more pathetic appeal to the justice of the King, but ah, all in vain!

He sought consolation in devoutly reading the prophecies of the Holy Scriptures and the writings of the Fathers of the Church, and wrote a religious book and a final long letter, full of poetic mysticism, to that selfish and ungrateful King Ferdinand, the noble and magnanimous Queen Isabella having already expired the year before. In making a hurried psychological study of these two opuscules, I find that for the third time the intellect of Columbus was clouded with delusion. The extravagances of his overwrought imagination must not, however, be entirely judged as they appear at the present day. They were in perfect sympathy with the quintessence of those times, when the spirit of the Crusaders was still rampant, when the conquest and fanatical expatriation of the Moslem had just been accomplished, and the Inquisition permeated, enslaved and terrorized the whole Spanish kingdom.

So poor and helpless at last he found himself, after uselessly following the Court from place to place, that he accepted the modest home offered him by kind-hearted and charitable Gil Garcia—a sailor—at Valladolid, Magdalen Street (now called Colón). There, propped up in his lowly bed, suffering just as much from the cardiac complications of chronic rheumatism as from mental anguish and dejection, and want of proper medical attendance; looking a great deal older than he really was, but with loftiness of heart, the religious enthusiasm of an old prophet, and Christ-like forgiveness for all his persecutors, under those long, curling white hairs of his, and the gray robe of the order of St. Francis—of whom he had been a great devotee—in which he begged to be clothed and buried, he was uttering words which, to anybody unacquainted with his life, would have seemed very strange indeed. For he was speaking to his two sons and his confessor, Fray Gaspar de la Misericordia, of little else but of another world—not the world of the unknown and unknowable, nor the house not made with hands, eternal in the heavens, to which he was soon to go—but of a New World on this planet of ours, where he had been; of which he was the first to give a faithful account, and to bring from it men of an unheard-of race, and most wonderful specimens of the animal and vegetable kingdoms; a world which should be forever associated with his name, and which will be without any doubt for all coming ages an inexhaustible field for commerce, for industry, for agriculture, for benevolence, philanthropy and liberty—a true material salvation of the whole human race.

He took his departure from this life on Ascension day, May 20, 1506, a servant satisfied of his work and honorably dismissed from the visible terraqueous globe, which he had very much enlarged, to go to the invisible and everlasting hereafter, whither all of us are marching on, pronouncing with great unction these sublime Latin words: *In manus tuas Domine commendo spiritum meum.*

What was the cause of Columbus' death, and what part did the medical profession take in the discovery of America?

I have just remarked that he died from the cardiac complications of chronic rheumatism, thus contradicting all the standard historical authorities who assert he was a victim of gout. My humble opinion is that the chronic form of poly-articular rheumatism was not developed slowly, but succeeded to an acute attack, and that this first invasion of the disease occurred on the last days of June, 1498, after Columbus left the Cape Verde Islands, on his third voyage. "The atmosphere was loaded with clouds and vapors; neither sun nor stars were to be seen; a sultry, depressing temperature prevailed," says Washington Irving. A little farther along in his narrative the same high historical authority adds that on July 13

the ships "had entered a region where the whole sea was like a mirror, and the vessels remained almost motionless, with flapping sails; the crews panting under the heat of a vertical sun, unmitigated by any refreshing breeze." The sailors lost all strength and spirits, and there was in the atmosphere, owing to drizzling showers, that combination of heat and moisture so well adapted for a genuine attack of acute rheumatism, and entirely unfavorable for the development of a paroxysm of gout. But the presence of the rheumatic poison was clearly evident in the accompanying "violent fever." Gout is not ushered in by high fever, and during the hours of severe suffering the skin usually remains dry, a general sense of relief being experienced just as soon as a profuse perspiration sets in. A warm climate exerts for that reason a beneficial effect on the occurrence of the seizures of gout. As for the peculiarity of the first attack making its appearance at night, between the hours of 12 M. and 5 A.M., I can not say anything, because the exact time at which it occurred is nowhere recorded.

Those writers who have minutely described the last few months of the life of Christopher Columbus state that when he was confined in bed *his body was extraordinarily swollen from the chest downwards.* Here we have the cardiac dropsy met with as the final and fatal result of an old inflammation of the endocardium, brought about almost invariably by an attack of acute rheumatism. The shrinking and induration of the valve curtains of the heart and their tendons, as a sequel of endocarditis, and the hypertrophy and dilatation of the cardiac walls to which these pathologic changes give rise, owe their chief importance to the purely mechanical disturbance of the blood circulation thereby induced, the action of the heart becoming more and more feeble every day until death at last closes the scene.

The cardiac complications of rheumatism (endocarditis, pericarditis, myocarditis) are by far the most frequent, being present in more than 50 per cent. of all cases, and constitute the commonest cause of death in this disease. Bouillaud was the first to recognize the frequency of such accidents, and his great discovery that "their occurrence is the rule rather than the exception in rheumatic fever," has stood the test of all subsequent observers, and remains to-day one of the best established facts in clinical medicine.

Having finished saying what I had to say about the medical history of the immortal discoverer of this New World of ours, I will end by putting upon record the names of those belonging to our noble profession who directly contributed to the realization of such a momentous event in history. The clear intuitions of Avicenna "the Prince of Physicians," as he was called; the advice and encouragement given to Columbus by the Florentine physician and distinguished cosmographer, Paul Toscanelli; the modest village doctor, Garcia Fernandez, who, as an improvised expert in mental diseases, won for the perambulating genius the respect and sympathy of the worthy prior of the Monastery of La Rabida; the very important fact that, although it is proved beyond doubt that no priest accompanied Columbus on his first voyage, there were two representatives of our profession among his followers—Maestro Alonzo and Maestro Juan—two ship surgeons or *fisicos;* and last but not least, the learned author of the very first scientific report on America, Dr. Diego Alvarez Chanca, who came over with Columbus on the second voyage, and saved his life during a protracted and dangerous attack of typhus fever. All these facts, scattered in many old books and pamphlets, worm-eaten in dusty archives, are here collected and presented as *pièces justificatives* of the noteworthy part taken by the medical profession in the discovery of the Western Continent.

Almost every one who has written the life and voyages of the immortal Genoese navigator,—and their name is legion—speaks of the probable sources of his information about the existence of a western route to the East Indies. But none of them, that I am aware of, refers to the writing of Avicenna as a possible fountain of suggestion. This eminently successful physician and most wonderfully learned man was born at the village of Afshend, in the province of Bokhara, Turkestan, Central Asia, in 980 A.D., and died in 1037. Besides his resplendent medical knowledge, he was a profound philosopher, a skilful rhetorician, excellent geometer, well versed in astronomy and astrology, a shrewd theologian, an accomplished naturalist, and a very fine musician. During the last fourteen years of his life he wrote a considerable number of works on widely different subjects, among which his treatise entitled, "De Complexionibus," section 1, chapter 1, where he cites the opinion of Aristotle expressed in his work, "De Causis Propietatum Elementorum," is an able speculation on the existence of the Antipodes.

Paolo del Pozzo Toscanelli was born at Florence in 1397, studied medicine in his native city and became one of the most famous astronomers and cosmographers of his time. On account of his great reputation in nautical science he was constantly consulted by bold navigators from different countries, who unhesitatingly followed his advice and the course marked down for them in the charts Toscanelli himself drew. He was thoroughly acquainted with the scientific and geographical literature of the Greek and Latin classics; became one of the keepers of the celebrated Florentine Library at the age of 30 years; erected, about 1468, the famous gnomon on the uppermost part of the dome of the cathedral at Florence; died in that city on the 15th of May, 1482. To this distinguished member of our profession Columbus applied, beseeching his opinion and advice in regard to his contemplated stupendous enterprise, as had also done a few days before, on the same subject, the powerful King of Portugal. Like the truly scientific and generous man that he was, not only did he immediately answer the two letters of the then obscure sailor, confirming him in his views of the figure of the earth and the practicability of a voyage westward to India, but also sent him a chart drawn by his own hands in which was marked and explained the course Columbus should follow to reach there in safety. This very chart was the one used by the Admiral on his first voyage of discovery. He showed it to Martin Alonzo Pinzon, captain of the caravel *Pinta,* while sailing on the *mare incognitum, tenebrosum,* and both frequently sat on deck discoursing upon it. The historian Las Casas, a contemporary and friend of Columbus, says he saw it and had it in his possession. But it has been irretrievably lost.

The ancient convent of Franciscan friars dedicated to Santa Maria de la Rábida—where Columbus halted, accompanied by his son Diego, hungry, thirsty,

dressed in tatters, full of dust and tired from having tramped many miles—is situated at about half a league from the village of Palos de Moguer, in Andalusia, Spain. The humble physician of this little maritime town was Dr. Garcia Fernandez, who enjoyed the friendship and high regard of the respected Prior of the Monastery, Juan Perez de Marchena. This patriotic friar detained Columbus there as his guest, and, diffident of his own judgment as to the sanity of the distinguished-looking foreigner, sent for his scientific friend, the village doctor, to converse with him and inquire into his mental state. Dr. Fernandez was equally struck with the intelligent appearance and entertaining conversation of Columbus. He discussed with him several geographical and astronomical topics, and became convinced that he by no means was talking to a madman but to a genius. His clear discernment at once detected the possibility of the adventure Columbus was pursuing, and won for him, with his favorable report to the Prior, the good will and invaluable aid of that influential religious man. What the result would have been if that unassuming and kind village doctor had given an unfavorable opinion, nobody can tell.

Among the few brave men that dared accompany Columbus on his first voyage of discovery to America were two representatives of our philanthropical profession. Maestro Alonzo was the name of one, and Maestro Juan that of the other. The first seems to have been the better known of the two, and came over in the caravel *Santa Maria*, commanded by Columbus, while the second was more of a friend of Martin Alonzo Pinzon, and embarked in his vessel *Pinta*. This last remained at the little fort of Navidad when Columbus returned to Spain, being one of the thirty-eight men massacred by the native Indians of San Domingo, and thus paying with his life for his professional devotion. The small band of foolhardy Spanish colonizers were under his medical care.

I have already referred to Dr. Diego Alvarez Chanca, who came with Columbus on his second voyage, and saved his life and that of many hidalgos at the point of death in the Island of Hispaniola or San Domingo. The account given by this distinguished man of science to the municipal council of his native city is undoubtedly an unpretentious evidence of the wide range of his scientific knowledge, and constitutes the first sketch of the flora, the fauna, the ethnology and climatology of our dear American continent. He also wrote, on his return to Spain, a work entitled, "Comentum Novum in Parabolis Divi Arnaldi de Villanova," published at Seville in 1514.

In conclusion, we, as a class, have sufficient reason to feel proud of the active part taken by members of the medical profession in the discovery of this beautiful land of ours, where the "divine right of kings" is no longer possible, and when the great Chicago World's Columbian Fair has given imperishable existence to the memory of its discoverer.

194 West 10th Street.

Contraction of Fingers.—Apply upon the palm of the hand a large quantity of the following ointment: White vaselin, 30 grammes (1 ounce); iodid of potassium, 2 grammes (31 grains); iodin, 1 gramme (15½ grains); cover with thick layer of cotton, rubber cloth, and moderately tight bandage. Renew application daily for three or four weeks. (Vulpian, *La Presse Médicale*, Feb. 10, 1894).—*Universal Medical Journal*, April, 1894.

TRANSPORTATION OF WOUNDED IN WAR.

The opening paper of the Symposium on Transportation of Wounded, at the meeting of the Association of Military Surgeons, Washington, D. C., May 2, 1894.

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In writing history it is necessary to begin at the beginning, thereafter following our subject along the stream of time until we reach either the end of its course or its present anchorage; but the beginning of our present subject is lost in the haze of the distant past. In the earliest dawn of history we find men fighting; and battles, no doubt, were fought even in the primitive days. The history of the human race is, in fact, a history of battles and their results. But history had no eyes for those who dropped out of the struggle; seldom are we told of the wounded. Nevertheless, we must credit these old time warriors with sympathies which led them to care for their wounded, so that our subject finds a beginning as far back and as undefined as history itself.

We may assume that slaves, servants, companions-in-arms, friends or relatives cared for the fallen as soon as the exigencies of war permitted, and that the methods differed with race and nation, mode of warfare, and an infinity of small or local conditions. We get an occasional glimpse of these in the chronicles of the past, but they have merely an antiquarian interest. In the feudal age each chief looked after the welfare of his armed vassals, if from no higher motive than personal interest, for his own power depended on the strength of his following. A victorious army imposed the care of its sick and wounded on the non-combatant population, whether friends or enemies, and the system of ransom which followed that of slavery often obtained for a fallen enemy greater care and consideration than he would otherwise have received. When the companies of feudal chiefs became replaced by commands recruited at large, provision was made for the wounded by the central power or government.

The outbreak of our Revolution brought us first face to face with this question. Our improvised army was modeled on that of England, and English medical methods necessarily influenced the elaboration of our own. These looked only to providing the army with intelligent medical men, efficient nurses, and the needful allowance of medical and surgical supplies. They were of infinite value when brought into immediate relationship with the wounded, but there was no special provision to insure that this would be effected. When a battle was in progress the medical men, nurses and supplies constituting the field or regimental hospitals, were somewhere in the rear of the army with its other impedimenta, for at that time the medical armamentaria were regarded as impediments pure and simple,—their value as preservative of the integrity of a line of battle being unrecognized. In Europe, where frequent wars had reduced the methods of the battlefield to system, the regulation distance of the impedimenta behind the fighting line was not less than one league. Here, during the battle, the medical men of the army attended such of the wounded as were able to reach them, or such special cases, generally officers of rank, as might be brought to them; and as in a general engagement there was usually no lack of such patients, the surgeons naturally considered themselves to be doing excellent and valuable work, although the poor fellows stricken on the field and unable to leave it without

assistance, derived no comfort from their proceedings. If defeated, the army withdrew, leaving the wounded to fall into the hands of the enemy; if victorious, arrangements were made to have them brought to the hospital. Servants, bandsmen, and camp followers were sent to the field, and a force, volunteer or impressed, of the inhabitants of the vicinity, with all needful or available wagons, was organized for this work of mercy.

This, the usual method of bringing off the seriously wounded, was that adopted at Spire, for the wounded of the French Army of the Rhine under General Custine in the autumn of 1792. Although time honored by the practice of generations of military men, it did not meet with the approval of a young surgeon, D. J. Larrey, who had recently joined Custine's command. He thought that some effort should be made to reach and assist those men who were dying from shock, exposure and needless loss of blood, and he was positive that lying uncared for on the field for twenty-four or more hours was not a desirable preliminary to amputation for gunshot injury. His disapproval of the regulation method became strengthened when, some time later, the wounded in an engagement at Limbourg had to be abandoned because before the arrangements for their removal were completed the defeated army received strong reinforcements. With the consent of General Custine he procured some light wagons and organized an *ambulance volante* or flying hospital, intended to bring assistance to the wounded and remove them from the field during the battle. Its first service demonstrated its value. A strong force had been thrown forward to guard a mountain pass against the advance of the Austrians, and Larrey, in anticipation of an engagement, accompanied it with his ambulance wagons. The Austrians discovered the isolation of this force and surrounded it; but the French, by a vigorous assault, broke the enemy's line and succeeded in rejoining the main body, bringing with them in the ambulance wagons the wounded who otherwise would have been left on the field. His ambulance for a division of troops consisted of eight two-wheeled two-horse spring wagons and four four-wheeled four-horse wagons for the wounded, with four store wagons and a *personnel* of over one hundred men, of whom fourteen were surgeons. Its value was so well appreciated that shortly afterwards Larrey was sent to Paris to organize ambulances for all the divisions of the army. He joined Bonaparte in his Egyptian campaign, and personally supervised the operations of the flying ambulances of the French armies from that time until the Napoleonic sun set at Waterloo.

Meanwhile another surgeon of these wars, Baron P. F. Percy, serving with General Moreau's command, was also endeavoring to solve the problem of prompt aid on the battlefield. As the hospital trains were not allowed on the field on account of the uncertainty of the issue, the risk of capture, and the certainty that they would be in the way of the troops during some part of the action, Percy's idea was to transport to the field the essentials of surgical aid, without blocking roads or impeding military movements. The surgical wagons which he constructed to effect this were modeled on those of the light artillery. The art of preserving life, he considered, should compete in activity and promptness with that of destroying it. Each was drawn by six horses, and carried eight surgeons and as many orderlies, with instruments, stretchers and supplies. When a sheltered spot near the fighting line was reached, the surgeons gave professional aid to the wounded who gathered near them, while the stretchers attached to the wagon were put to excellent service by the orderlies and men temporarily spared from the combatant ranks. When the work was finished, the wagon was driven to some other part of the field where surgical assistance was in demand.

This wagon did much good during the short time it was in use. It gave aid to those who were able to reach it, but who could not have reached the hospital train two or three miles beyond; it gave vital assistance to many who otherwise would have died, and it brought aid and comfort to those who otherwise would have been exposed without either for hours; but particularly did it demonstrate how much good could be effected by the presence of medical officers, although the regulation hospitals and their supplies were miles away. It contributed as much as the ambulance volante to the immediate comfort and surgical safety of the wounded, but it left them on the field until the usual arrangements were made for their removal. Percy speedily recognized this inferiority of his system, and having abandoned the wagon he devoted his energies to adapting its *personnel* to work in connection with Larrey's ambulance.

When with General Moreau in Spain he organized a company of brancardiers or stretcher-bearers from selected volunteers from the regiments. Each man carried one-half of a litter as a part of his equipment. His lance or pike became a litter-pole by removing its head; his sash formed one-half of the bed of a litter when laced lengthwise to a similar piece by eyelets; and on top of his knapsack he carried a horizontal traverse having at each end a hole for the pole to pass through and a downward projection which formed one of the legs of the completed litter.

Percy's views, however, went further than the mere organization of bearer companies. In his efforts to provide for the wounded he at one time endeavored to effect a re-organization of the medical service in the field—defining the rank of its officers and their staff positions, with a major-general as the chief, three inspectors-general, sixteen lieutenant-colonels, etc. The Emperor declined to approve this proposition, as it failed to include the physicians and pharmacists of the general hospitals whom Percy seems to have intentionally omitted from his scheme; but the brancardier system was so successful that in 1813 it was formally adopted by the Imperial armies.

Some combination of bearer companies and ambulance wagons is now in use in all armies; but the minutiæ of the system are in many instances imperfect. Up to the year 1821 the Army Regulations of this country were silent on the subject of transportation of the wounded. The Army Medical Department was apparently left to accomplish its ends by any available means, and presumably these would have been such as were known to have given satisfactory results elsewhere. In the year mentioned, however, the Regulations compiled by General Scott, prescribed the method of aid on the battlefield in language clear as to its provisions, and yet so elastic in its requirements as to leave the Department free to exercise full discretion in its management. The medical director was authorized to establish *field* or *movable* hospitals, and these in the revised edition published

in 1825, were called *ambulances*, in advantageous positions behind the line of battle, with smaller sections organized in like manner to follow detached columns and even to give succor to the skirmish line. The Quartermaster's Department was directed to provide the wagons after consultation with the Medical Director, but these wagons were to remain under the conduct of an officer or agent of that Department. The direction to employ hired labor for the purpose of manning the ambulance system was the weakest point in the program. It was, no doubt, a concession to military custom which up to this time had been broken systematically only by the organization of the brancardiers of the French army.

During the period of uninterrupted peace which occurred at this time, our War Department officials became absorbed in current work relating to the movements of small detachments of troops in the West. War on a great scale dropped from their consideration, and in consequence the 1821 provisions for battlefield service were omitted from the Regulations published in 1834, 1835 and 1841. The only provision for assistance to the disabled in these official publications shows the narrowness of mind contracted by official routine during those years: "For the accommodation of the sick and disabled, a wagon will be attached to the rear guard when necessary and practicable, and a surgeon will attend to give assistance and see that no improper persons are suffered to avail themselves of the accommodation."

The war with Mexico then came upon us so suddenly that in a hasty re-issue of the Regulations in 1847 there was no time to elaborate and incorporate a medical system for field service; and the Medical Department was left to do the best it could, trammeled, however, by its dependence for transportation on the Quartermaster's Department. System was evolved in the progress of the war, and the results were embodied in 1857 in the next issue of the Regulations. But in these there was a great lapse from the provisions of 1821. The latter made the Medical Department a free agent to enable it to sustain its high responsibilities and gave it the Quartermaster's Department for collaboration and assistance. In this way they were in advance of the methods of all other armies; but the Regulation issued one-third of a century later fettered the Medical Department with the bonds of slavery to a so-called ambulance corps. The surgeon dropped to the status held by him in foreign armies, as the mere attendant on the wounded, when permitted by the officers of another department to come into personal contact with them. Even the medical director, a director only in name, was ordered to take his post for professional work at the principal depot.

The Regulations of 1861 found us engaged in a great war, responsible before public opinion for the care of the wounded, yet unable to accomplish anything without the consent and active coöperation of officers who were not held to this responsibility. Many of these officers were volunteers, ignorant of their powers under the Regulations, and actuated, as were the regular officers of the Quartermaster's Department, by no petty jealousy of position, rank or power, but solely by a desire to accomplish the end in view of doing the best for the wounded under the conditions of the time. The medical work on the battlefields of the Civil War progressed therefore under an intelligent appreciation of what the Regulations should have been, rather than of what they were—and as a result an ambulance corps was organized, a combination of Larrey's ambulance volante and Percy's brancardiers, the whole under the orders of the Medical Director, although officered for purposes of domestic economy and property responsibility, by details from the line of the Army.

Under these provisions the ambulance and field hospital service of the United States armies became models for the military surgeons of Europe. Their ability to deal with large numbers of wounded was fully demonstrated during the series of battles and marches, beginning with the crossing of the Rapidan and the Battle of the Wilderness and ending six weeks later with the commencement of siege operations at Petersburg, Va. On several occasions during this trying time the headquarter wagons of general officers were turned over to the Medical Department for field work; but this indicated no weakness of the system, merely a shortage of ambulance wagons—and it is to be observed that there would have been no shortage but for the imminence or the actual occurrence of an engagement during the temporary absence of some part of the ambulance train at the base of supplies. Ordinarily in the absence of railroad transportation, empty supply wagons were utilized for the evacuation of the field hospitals, but during this active campaign the wagons of the ambulance volante were called upon to do some duty *d'arrière* as well as their own special duties *d'avant*. Practically the work of the battlefield and field hospitals was done with the organization that we now have in the Medical Department of the United States Army; a staff corps of surgeons and a similar corps of enlisted men thoroughly educated in the principles and drilled in the practice of first aid. These corps did not then have a legal existence. They were extemporized by medical directors out of regimental and other surgeons, and regimental and other nurses, and hospital attendants. But since 1887 a special Hospital Corps, authorized by Congress, has been organized and educated. At the present time its members are scattered at 120 different posts, but if an order were to be issued for the mobilization of our Army, its Hospital Corps could be organized into bearer companies and field hospitals as quickly as the troops could be brigaded.

Instead of being a loose aggregation of regimental and hospital surgeons, incapable officially of doing anything but practice their profession when the military exigencies permitted or required them to do so, the Medical Department is now a compact body, responsible for the care of the sick and wounded, and having the powers of commanding officers over the *personnel* and material specially provided for carrying out its purposes.

Gentlemen, when I was asked to contribute to the history of the transportation of wounded men from the field of battle, my mind ran back to the esquire and his wounded knight—the officer brought off in his sash by servants, the Scottish Highlander in his plaid by clansmen, and the soldier generally in his blanket between two pikes or muskets or pic-a-back on the shoulders of a friend; but a little thought showed me how immaterial were these trifles as compared with changes in the status of the medical officer, and the power which he could exercise in providing facilities or in rendering them available. In this really and not in an improved ambulance

wagon or a modified litter sling, lies the progress and history of the transportation of the wounded from the field.

The car of progress moves slowly. For some undefined reason, medical men labor at a disadvantage in fields of practical work, although these may be allied closely to their own. It seems to have been assumed that because a man is intelligent enough to be capable of taking care of another in sickness or injury, he should be regarded as incapable of doing anything else with the ability that might be expected of one who has never been exposed to the deteriorating influence of medical knowledge. Although the French surgeons did so much to mitigate suffering and save life on the battlefield by suggesting and organizing new systems and testing and demonstrating their value, it was not until 1882 that the Medical Department of the French Army was given command of these organizations, nor until seven years later that it was empowered to control its supplies. During that long period its members remained merely doctors, caring for the sick and instructing nurses and stretcher-bearers, whose services were afterward controlled along with their own by officers who, in the interests of the wounded, should have been their assistants. And although Percy a century ago recommended a staff corps of military surgeons, the French still maintain their regimental officers and "soldats infermiers" or regimental nurses, the former equivalent to our medical officers on duty at the first aid stations and the latter to our company bearers.

The Germans perfected their field medical service during the war of 1870. Besides special aid on the fighting line, they have a bearer company of about two hundred men to each division and a reserve company to each corps. To 36,000 men, forming a corps of two divisions, they have therefore about six hundred men for bearer duty; but the field hospitals of the corps are manned by as many more, so that exclusive of medical officers, the sanitary force is equal to over 3 per cent. of the troops in line. The Medical Department controls its men, transportation and supplies.

The conservatism of the British military authorities was slow to permit new ideas to modify the sacred customs of service, so that although the medical officers engaged in the campaigns against Napoleon were well aware of the advantages of the methods of Larrey and Percy, and made many appeals to the government to be permitted to do likewise, these were uniformly disapproved. The Duke of Wellington was chiefly responsible for this, as he would not hear of encumbering his army and impeding its movements with these wagons. Wounded Frenchmen were succored while the din of battle was yet in their ears, but their British opponents had to lie exposed, not only during the continuance of the struggle, but during the long watches of the night until arrangements were perfected for their removal. The available wagons of the supply departments and such as could be hired or impressed into the service were brought up along with the bandsmen, camp followers and hired labor to give the long delayed aid and transport the sufferers to the hospitals. The stretchers used in loading consisted of a canvas bed between two pikes or poles, with no cross-pieces to keep them apart. The long wars of the early part of the century improved the organization and internal economy of the British field hospitals, but effected no immediately beneficial change in their methods of transportation. Nor was anything done until the outbreak of the Crimean war, when a Hospital Conveyance Corps was hastily organized and shipped with the troops. This was so decided a failure that the work of transporting the wounded had to be transferred to the train of the Subsistence Department. The wagons of the Conveyance Corps were too heavy; no provision was made for repair in case of accidents, and the men were old, broken down and dissipated soldiers weeded out of the regimental ranks, rather than selected on account of special fitness for important duties. After the Crimean war, a Medical Staff Corps was organized in order to provide a better *personnel* for the care of the wounded than could be obtained under the old system of regimental details. I need say nothing here of this regimental system, as our regular army officers are personally familiar with its objectionable features, some of which I delineated in a paper read at the last meeting of this Association. The Medical Staff Corps proved a failure on account of being composed of hired civilians. In 1873, however, an important change was effected. The British abolished their regimental system of medical appointments, and established a staff corps of officers and a hospital corps of enlisted men such as we have now in the Army of the United States; but these medical officers have one disadvantage yet to overcome. Their ambulances are not under their control,—the officers of the Army Transportation Corps command them.

And so in all armies we now find bearer companies and ambulance trains with unimportant differences in their composition, and more important differences in the control exercised over them by those most interested in the welfare of the wounded. Patriotic officers of corps other than the medical, may claim as much interest in their wounded countrymen as any man could have, when not bound by special ties of blood or friendship, and so far as their knowledge goes they are no doubt warranted in making the claim; but they have no knowledge of the interest of the medical man in lives or limbs susceptible of being saved. He is interested in the wounded on account of what he as an individual may be able to accomplish and also on account of what medical and surgical science may be able to effect; and to these interests, of which the Transportation Corps or Quartermaster's officer knows nothing, he may claim a full share of interest on behalf of patriotism.

But every system for the care and transportation of the wounded, no matter how carefully organized, may occasionally be crushed and paralyzed by the iron heel of war. Of what avail, for instance, were Larrey's ambulances on the disastrous march from Moscow when men, narcotized by cold, fell and were shrouded in snow before the heart had ceased to pulsate,—when they were cut off on the Berezina, and the great surgeon was, himself, saved only by being passed over the blocked, broken and enfiladed bridge on the shoulders of the men, or when the Sisters of Charity at Wilna were endeavoring to rally him from his exhaustion at the end of that terrible march.

Thanks to the better parts of human nature, scenes of this kind will be of less frequent occurrence in war hereafter. To alleviate the sufferings of the wounded, commanding generals have sometimes made temporary arrangements for the neutrality and

safety of surgeons and others engaged in the humane work. The success of an agreement of this kind in 1743 between Stair and the Duc de Noailles led Baron Percy in 1800 to draw up a similar compact, which Moreau signed and sent to the Austrian General Kray, but the latter declined to entertain the proposition. Commanding generals have not plenary powers. Kray was, no doubt, tied down by the military power at Vienna. But an arrangement of this kind has now been effected on behalf of the wounded of all civilized nations by the influence of the International Red Cross Society. I need not dwell on the provisions of the various articles of the Geneva Convention, the practical operation of which has been tested in the wars of Europe since 1864.

During the past century much progress has been made in the evolution of the ambulance wagon. Larrey's two-wheeled vehicle consisted of an oblong box suspended from springs at its four corners, closed by folding doors in front and rear, and having openings with sliding shutters in the sides for the admission of light and air. On the floor were two padded litters on castors; and, to facilitate the handling of these when loaded, four iron handles were attached to the sides of each.

The first ambulance wagon officially recognized in this country was the Moses wagon, which was examined by a medical board in 1859. It was evidently intended to meet the special requirements of our Western service, the chief characteristics of which were long marches made by small commands. It was reported to be a kind of large omnibus fitted up as a traveling hospital, and capable of extending its shelter at night or in camp by the use of attached canvas so as to accommodate about thirty persons.

The Wheeling ambulance, weighing only 700 to 800 pounds, was used extensively during the Civil war. It was furnished inside with padded seats for eight, convertible into beds for two. By some, it was considered too light or frail for field service, but it was simple in construction, easily kept in repair, and a matter of fact in many of the divisions of the Army of the Potomac, it survived the war after participating in every campaign. Since then, I have seen it in Western service accompanying troops over mountain trails where none of the wagons of recent construction could have been taken. Our present ambulance wagon is an altered Rucker, converted into a medicine wagon in front by a well which contains two medicine chests. It is thus excellently suited for the current work of accompanying small commands on marches and such field service as we have on the Mexican frontier, but is wholly unfit for battlefield service in time of war. Ambulance wagons should be suited for the work required of them. Ambulance surgeons, civil as well as military, recognize this principle. This subject is on our program for discussion, but meanwhile I desire to say, as a conclusion from the study of its history, that if we again have to gather up our wounded from the battlefield by divisions and corps, it is not by means of our present wagons that we shall accomplish our object, but with shells on wheels, in so far resembling the Wheeling ambulance wagon that they can hover under shelter in rear of a skirmish line or line of battle irrespective of the presence or absence of macadamized turnpikes.

The evolution of the stretcher has kept pace with that of the ambulance wagon. The huge knife with which the men of our Hospital Corps are armed, although under the terms of the Geneva Convention they should carry no arms, recalls the head of the brancardier's pike when worn as a side-arm; but all the other parts of the Percy litter have been consolidated into a single compact piece. Two of these, when open and in use, should fit and fill the floor of the ambulance wagon, and the handles should be long enough to keep the equipments of No. 2 of the litter squad, when engaged in actual bearer work, from bumping against the feet of the patient. Majors Harvard and Hoff, who have given more study to this subject than most of our regular medical officers, will by-and-bye show us how far we have succeeded in getting away from the pike, sash and traverse of Baron Percy's brancardiers.

In this country we have had little experience on a war scale of any other mode of field transportation than the stretcher, the ambulance, and the army wagon, the last being the wagon of the general supply train, the "six-mule team" of the War of the Rebellion. Observe the use of the word, ambulance, in the last sentence, instead of the term, ambulance wagon. This is an Americanism which grew into our use of language during our civil war. Larrey understood by an ambulance an aggregation of light wagons, drivers, surgeons, attendants and supplies in aid of the wounded, and in Europe at the present time the word conveys the same meaning; but very generally in America it means merely one of the light wagons belonging to the European ambulance or field hospital. Here we have room for international misunderstanding. When I, as an American, speak of six ambulances I mean six ambulance wagons; but the military surgeons of Europe would understand me to mean six field hospitals, each having probably more than this number of the light wagons to which the term in my American usage of it has reference. It might be well for this Association to stamp an official impress on the word. To avoid misunderstanding, when the report of our proceedings is in the hands of foreign readers, I have been careful to use the word as an adjective, but in the sentence to which I have invited attention I have made use of it American fashion in order to introduce this suggestion.

In individual instances we have tried several modes of field transportation other than the hand-litter and wagon. Many of our officers, in the absence of wheeled vehicles, have taken a lesson from the Indian and brought off their wounded on improvised travois; and have thereafter given much thought to elaborating as a perfected and prepared piece of mechanism that which owes the whole of its value to the fact that it can be so easily improvised. Single litters based on a pack saddle or *aparejo* have been constructed by some of our officers, and cacolets and horse litters were tried in a small way during our war—but in every instance with unsatisfactory results as one grand disadvantage affected each and all of them, their utter valuelessness in the absence of mules or horses specially trained for their service. In the Crimea, Algeria and Mexico, cacolets were largely used by the French troops, and many favorable reports are on record concerning them. The cacolet method has indeed been characterized as "the most perfect system that has yet been devised for the transportation of the sick and wounded on the field." This shows what may be accomplished by care and

training notwithstanding the inherent difficulties of the method. American opinion, in so far as I have been able to gather it, is against the use of these many ingenious contrivances, for it is held that if a wounded man is unable to move off on foot, or to ride a gentle horse, he should be carried recumbent in an ambulance or other carefully prepared wagon or, in the absence of wagons, on a hand-litter if the distance is short, or a travois if it is long.

After the battle of Bautzen, Baron Larrey noted with much satisfaction the "convenient and expeditious" manner in which the wounded were conveyed from the field to the city of Dresden in wheelbarrows. This observation, no doubt, originated the wheeled litter and gave rise to many of the efforts that have been made to perfect it. But the wheeled litter did not occur to Larrey. His was a broad mind; and the incident showed him "how important it is for a surgeon-in-chief to study the facilities afforded by the country through which the army is passing." American surgeons have had few opportunities of acting on this suggestion. The Indian travois is their only development in this line. The loyal British subject points with pride to the fact that the sun never sets on the flag of his government. Medical officers of the British Army have studied the facilities for transportation in every quarter of the globe, and in many of its obscure corners. Their published works on this subject are filled with modifications of "native" methods. It is needless to do more than mention the palanquin, dooley, dandy, etc., because these are acknowledged to be valuable only under the conditions prevailing in the locality which originated them, and to compare unfavorably for the general purposes of modern warfare with the lineal descendants of Percy's stretchers and Larrey's ambulance wagons.

In future wars, all ambulance wagons drawn by animals except the light wagon for battlefield service, will be superseded by railroad transportation. An excellent system of hospital trains was in use at the close of our Civil War, although at first we had no experience in this line. Cars returning to the base of operations for supplies were frequently utilized for the removal of sick and wounded, with only such provision for comfort and the amelioration of suffering as could be extemporized by comrades or attendants. But after a time, on account of the frequent recurrence of movements of this kind, railroad transportation ceased to be regarded as an emergency measure, and improvements speedily followed, until carefully outfitted trains with kitchen, dispensary and office cars became a part of our medical service—and these continue to have a formal recognition in our Army Regulations.

Although we worked out our system of hospital trains by the light of our own experience, the subject had already been discussed in Europe. In 1859 a French surgeon, M. Périer, suggested an adaptation of the ordinary baggage car for hospital purposes, and in 1860 Prof. Gurlt, of Berlin, brought forward a similar proposition; but the question was first solved in practice in 1863 during the progress of our war. Since then great progress has been made in Europe, mainly through the efforts of the Red Cross Society.

The transportation of the wounded by ships of special construction and equipment, dates from the time of the Crimean War, when Great Britain provided a hospital fleet to bring her sick and wounded to the general hospitals at Scutari and thence home. Early in the progress of our war, Mississippi River steamers were altered for hospital purposes, and later many vessels, some built specially for the service, were employed on the Atlantic and Gulf coasts. The Medical Department was at first liable to be deprived of these vessels at any time by local commanders who desired their use as transports for men or supplies; but an order subsequently issued gave the Department exclusive control of "all hospital transports and hospital boats properly assigned as such." The hospital boat, like the hospital train, is recognized by existing Army Regulations, so that in case of war the development of transportation by water, as well as by land, would depend on the energy of the Medical Department and the available appropriations.

I desire, in conclusion, to make a reference to the small caliber and tunneled bullets. Some officers consider that their disabling power at long range will prevent assistance from reaching the wounded until the battle has been fought. I by no means concur in this view. Battles are not fought on the dead level where every object within range would be struck, but on broken ground where every irregularity or swell affords more or less protection from the enemy's fire. I feel confident, therefore, that the Hospital Corps and its ambulances will be found close to the fighting line in the battles of the twentieth, as in those of the nineteenth century.

THE EXTINCTION OF TUBERCULOSIS.

The President's Address before the Medical and Chirurgical Faculty of Maryland, delivered April 24, 1894.

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This Ninety-Sixth Annual Convention of this Faculty should be to us an occasion of congratulation. During the past year our losses in membership have been few, and our gains not inconsiderable.

The semi-annual meeting held in Annapolis last November was very successful, in point of attendance as well as in the character of the work accomplished.

In an address at the opening of that meeting, I said: "A legitimate object of organization is to use it as a power to secure legislation. Not legislation for our benefit as physicians, but legislation for the public good. The medical profession wants nothing for itself from the Legislature. The legislation in which the profession is interested is such as will be for the benefit of the whole people. Public health laws, medical registration laws, lunacy laws, were all intended for the good of the public, although always originated, and their enactment promoted by the efforts of physicians."

It gives me especial gratification to call your attention to some recent results of such organization in this State. During the last session of the General Assembly three measures were considered in which the medical profession were interested, and which had their origin in committees appointed by this Faculty. These measures were: The Amendment of the Medical Practice Act, the bill for an Additional Hospital for the Insane, and the Act for the Prevention of Blindness in Infants. Each of them passed

in essentially the shape in which it was recommended by the Faculty through its appropriate committees. Having watched the progress of these measures through the Legislature, I believe I may say that not one of them would have passed in satisfactory form if the members of the Legislature had not been impressed by the fact that the organized profession of the State, as represented in this Faculty, indorsed and supported them. In this connection I may be permitted to mention a circumstance which, I think, justifies this statement. When the bill for the prevention of blindness was put upon its passage in the House of Delegates there was a good deal of opposition to some of its provisions. The bill was eloquently and intelligently defended by the Baltimore City delegation and the Committee on Hygiene, but the opposition was so determined that for a time its success was problematical. It was not uninteresting to note that the only effective opposition came from those counties which are still unrepresented in this Faculty.

There is additional reason for congratulation in the fact that all the labor of getting a law passed through the Legislature was not rendered nugatory by unfavorable executive action, as has happened to the profession of this State heretofore. Having at present in the executive chair a Governor "noted for his common sense," as was happily said by Dr. Preston, in the discussion on the Care of the Insane at Annapolis, all our bills have been approved and are now laws.

These successes should only render more forcible the appeal of the Committee on Membership for a larger representation of the profession of the State in the Faculty. There is room in this organization for every honorable regular practitioner in Maryland.

I will now invite your attention to some considerations showing the possibility of

THE EXTINCTION OF TUBERCULOSIS.

For over two thousand years a portion of the medical profession has believed in the contagiousness of consumption. A not inconsiderable proportion of the laity has likewise leaned to this view. So strong was this belief at one time that toward the close of the eighteenth century a law was promulgated in the kingdom of Naples, making very stringent regulations looking to the registration of consumptives, the segregation of the sick in hospitals and the destruction of infected articles. It seems that at the beginning of the present century the prevalence of consumption in Southern Italy was so great that the expression, "See Naples and die," could almost be taken in its literal sense.

About thirty years ago Villemin demonstrated the communicability of tuberculosis by a series of experimental inoculations upon animals. The results obtained by this investigator were soon confirmed by Chauveau and others. It was, however, not until the epoch-making discovery of the tubercle bacillus by Robert Koch, in 1882, that the value of the researches of the two distinguished French experimenters was generally recognized. Since that time the view that tuberculosis is an infectious and communicable disease has gradually pervaded the profession until today there are probably few physicians laying claim to common sense and current knowledge who would attempt to controvert it.

Coincidently with the general acceptance of the infectious nature of tuberculosis have come experiments to more definitely indicate the common methods of infection, and endeavors to restrict the disease within narrower limits. That this is a laudable striving must be conceded when we reflect that the annual mortality from tuberculosis in its various forms in the United States is 163,500, or nearly 450 per day; and that in this city the deaths from consumption of the lungs alone reach nearly 1200 per year, a ratio of 13.69 per cent. to the total mortality. If the deaths from tuberculosis in its various forms were included, the ratio would amount to over 14 per cent., or one in seven, which is the ratio throughout the world, as stated by Koch in his memorable paper announcing the discovery of the *bacillus tuberculosis*.

In accepting the infectious nature of this disease, we must not overlook the influence of the receptive condition of the individual in determining the time or place of infection. While the value of hereditary predisposition in determining phthisis is often overestimated, we can not ignore it altogether; neither may we undervalue the effect of an acute or chronic inflammation, a traumatism, or other weakening factor in rendering the tissues less resistant, or more receptive to the infective agent. These and many other conditions governing the infection of the individual must be recognized and accorded their full worth. The essential fact remains, however, that without the inoculation of the bacillus tuberculosis we can not have consumption, or any form of tubercular disease; and if by any means we can exclude this infective agent from the body the individual is safe from the disease.

There are two principal channels of infection in tuberculosis; one is by the digestive tract and the other, far the more important, by the respiratory organs.

Children are especially liable to infection by way of the digestive organs. An infant nursed by a consumptive mother, or one fed on milk from tuberculous cows may become tuberculous if the food contains the infective agent. It has been shown that the milk may contain tubercle bacilli, even though there is no recognizable local tubercular disease of the lacteal glands. It is highly probable that the frequency of tuberculosis of the intestinal canal, the peritoneum, the mesenteric glands and other abdominal organs in the young, is in most cases attributable to direct infection by tuberculous milk. In the adult this avenue of infection is likewise open. Meat from tuberculous animals, or other articles of food accidentally contaminated by the tubercle bacillus, may be the medium of communication. Secondary infection, from swallowing the bacillus-laden sputum from the lungs, is also not infrequent.

I need hardly say, however, that in the great majority of cases of tuberculosis the infection takes place by way of the respiratory organs, which also become the principal and generally the only, seat of the disease.

It is held by some, and I am inclined to consider the belief well founded, that the tubercle bacillus can not effect a lodgment in the tissues and begin its destructive action, unless these are weakened in their resistive power by an inherited defective organization, or by acquired conditions of lowered vitality. It is a result of clinical observation that a catarrhal pneumonia, for example, is often a forerunner of pulmonary consumption. It is assumed, with good reason, that the anatomical elements of the lining

membranes of the inflamed air-cells and finer bronchial tubes succumb to the attacks of the invading germ, carried in the inspired air, while in a state of health the tissues could resist the destroying organism. This simply emphasizes the importance of avoiding any factors tending to depress the vital condition of the organism or any of its parts.

The tubercle bacillus does not multiply under ordinary conditions outside of the body, and the fully developed organism when removed from the conditions favoring its growth in the body soon loses its vitality. But the spores of the bacillus, or the germs of the germ, as one may say, are extremely resistant and retain their power of growth and development for a considerable period. The dried spores are thus always potential sources of mischief if accidentally taken into the system by inhalation or swallowing. They may also be inoculated in wounds or traumatisms, but this mode of infection is comparatively rare, and may be left out of account in the present discussion.

Careful investigations by Baer and Cornet have shown that the death-rate from consumption is four times as great in German prisons as among the free population of the same age. In convents, asylums, and similar institutions, tubercular diseases are also extremely prevalent. In the Maryland Hospital for the Insane, over 30 per cent. of the deaths are due to tuberculosis. I am confident that within the last two years at least three patients contracted the disease by infection in the wards. Efforts have been recently made to minimize this danger.

Dr. Lawrence F. Flick has shown by a patient and laborious study of the cause of death in the fifth ward in the city of Philadelphia, that certain houses in that ward are infected. He found that for a period of twenty-five years, from 1863 to 1887, all the deaths from tuberculosis in the ward occurred in less than one-third of the houses, while in 1888 over one-half of the tubercular deaths occurred in these same houses, demonstrating beyond a doubt that these houses were infected.

I can hardly think it necessary to adduce proof that the tubercle bacillus is in all cases of tuberculosis the active agent of the infection. Recent investigations, especially those of Cornet, have shown the manner in which infection occurs. The breath of consumptives contains no bacilli, and is not infective. Even when the lungs are full of broken down tissue swarming with bacilli, the latter are only in the rarest instances, if at all, exhaled in the breath. During a fit of coughing, small particles of pus and secretion containing bacilli may be carried along in the forcible expulsion of air from the lungs, but even this is probably rare. Ordinarily the air of rooms or of hospital wards occupied by consumptives is free from bacilli and may be breathed with impunity. It is only when the dust of the room, containing dried and pulverized sputa, is disturbed by sweeping, or shaking up the bed-clothing, or in other ways, that danger of infection occurs. Scrapings from the walls of rooms occupied by consumptives, inoculated into animals, produced tuberculosis in 20 per cent. of the latter. Control experiments showed that dust from the walls of houses, hospital wards and public buildings not inhabited by tuberculous patients was not infective. Cornet showed also that the dust from the walls was in no case infectious when sputum cups were used to receive all expectorated matter, although such expectoration was full of bacilli. Praussnitz has demonstrated the presence of tubercle bacilli in the scrapings from the interior of railway carriages on one of the German railway lines carrying many consumptive passengers. Thus is experimentally demonstrated a danger to which attention had previously been forcibly drawn by Whittaker, Gihon and others.

It is generally agreed among physicians that if the stools from a case of typhoid fever are disinfected before being thrown out where they may contaminate the drinking-water supply, there is little, if any, danger from further infection. The alvine excreta being recognized as containing the infective agent, the destruction of the latter renders the material innocuous. In like manner it may be accepted as demonstrated by recent researches that if the sputa of a case of consumption be disinfected as soon as expectorated, the consumptive patient is no longer a source of danger to his neighbor.

From the foregoing it becomes evident that the principal measures of prophylaxis against tuberculosis must be such as comprise, first, immediate destruction of the bacillus tuberculosis in the sputa, or in other excretions when the case is not a pulmonary one; second, the disinfection of clothing and bedding, or other furniture liable to be contaminated with the infective material. As accessory measures must be considered notification to the health authorities of all cases of consumption, public disinfection of infected houses and conveyances (ships, railway cars), and the establishment of special hospitals for the free treatment of indigent consumptives.

The first example of an attempt at a thoroughgoing restriction of tuberculosis, is the decree of the King of Naples in 1832, before referred to. According to De Renzi, quoted by Flick, this decree contained the following propositions:

1. The physician shall report the consumptive patient, when ulceration of the lungs has been established, under penalty for the first offense of 300 ducats, and upon repetition, of banishment for ten years.

2. An inventory shall be made by the authorities of the clothing in the patient's room, to be identified after his death, and if any opposition shall be made, the person doing so, if he belongs to the lower class, shall have three years in the galleys or in prison; if to the nobility, three years in the castle and a penalty of 300 ducats.

3. Household goods which are not susceptible shall be immediately cleansed, and those that are susceptible shall at once be burned or destroyed.

4. The authorities themselves shall tear out and re-plaster the house, alter it from cellar to garret, carry away and burn the doors and wooden windows and put in new ones.

5. The sick poor shall at once be removed to a hospital.

6. Newly built houses can not be inhabited before one year from their completion, and six months after plastering has been finished and repairing has been done.

7. Superintendents of hospitals must keep in separate places clothing and bedding for the use of consumptives. Other severe penalties are threatened to those who buy or sell objects which have been used by consumptives, to servants, members of the family, and to any transgressors whomsoever.

The discovery of the bacillus tuberculosis and its mode of propagation and transmission would almost seem to justify these harsh regulations. Indeed, their enforcement appears to have produced a marked reduction in tuberculous diseases. Dr. Flick, who has made a very thorough study of this question, estimates that in 1782 the mortality from tuberculous diseases in the Kingdom of Naples was ten per thousand of population. In 1887 the official statistics for the Italian States formerly comprised under the Neapolitan Kingdom showed that the death-rate from all forms of tuberculosis was only 2.05 per thousand living people.

The efficient carrying out of restrictive measures against consumption requires intelligent coöperation on the part of the public. Hence, the education of the laity upon the infectious nature of tuberculosis and the importance of individual measures of prophylaxis must precede any successful enforcement of legal enactments looking toward the restriction of the disease. There can be no doubt that the public press can give most effective aid in spreading such knowledge. The newspapers are always foremost in the dissemination of useful information. The press is the most powerful auxiliary of the sanitarian. The press makes public opinion. Public opinion makes laws, and until laws have the sanction of public opinion, it is futile to look for their successful enforcement.

Popular societies, like the French "Ligue prèventive contre la phthisie pulmonaire," and the "Pennsylvania Society for the Prevention of Tuberculosis," are also useful and effective agencies in educating the people upon this subject. The organization of similar societies should be encouraged elsewhere.

Our current knowledge of tuberculosis and its means of prevention was effectively summed up in a report made to the New York City Health Department in the early part of 1889, by Drs. T. M. Prudden, H. M. Biggs, and H. P. Loomis, the pathologists of the department, and extensively published. In 1890, the Prussian Government issued a set of regulations which admirably cover the whole subject. This action was followed by the Kingdom of Wurtemberg in 1892. In the same year the State Board of Health of Michigan issued a pamphlet giving instructions for the disinfection of sputa, and in 1893 the same Board went a step further and adopted a resolution requiring consumption of the lungs and other tubercular diseases to be reported among "the diseases dangerous to the public health," this report to be made by householders and physicians to the local health officer as soon as the disease is recognized. The purpose of such report is to secure to the health officer information of the location of each case, "with the view of placing in the hands of the patient reliable information how to avoid re-infecting himself or herself, or giving the disease to others, and in the hands of those most endangered, information how to avoid contracting the disease."

The publication of the report of Drs. Prudden, Biggs and Loomis seems to have been the first official notification to the public by any health authority of the infectiousness and preventability of tuberculosis, since the Neopolitan decree before quoted. Within a few months the New York Health Department has taken a more aggressive step, and now requires all public institutions, such as asylums, homes, dispensaries, etc., to transmit to the Board of Health the names and addresses of all persons suffering from pulmonary tuberculosis within seven days of the time when such persons first come under observation." Physicians are requested to notify the Board of all cases coming under their professional care. Hospital authorities are urged to separate consumptive patients from those sick of other diseases. Special inspectors are appointed to visit the residences of consumptives, deliver printed instructions containing methods of prevention, and practice disinfection when required. One of the municipal hospitals is to be set aside as a "Consumptive Hospital" for the exclusive treatment of this disease, and whenever requested by physicians, the Health Department will undertake the bacteriological examination of the sputum in doubtful cases.

Action in a similar direction was contemplated by the Board of Health of Philadelphia, but objection on the part of some physicians to the compulsory notification of the disease was so strong that it has been for the time abandoned.

Within two months the State Board of Health of Washington has placed consumption among the diseases required to be reported to the Board.

The Board of Health of the City of Baltimore is about issuing a circular to the public giving suggestions in reference to preventive measures against tuberculosis.

The Pan-American Medical Congress, in session in Washington last September, adopted resolutions recommending to the various National Governments represented, effective measures for the restriction of the disease, and the American Public Health Association, which has been studying the question for the past four years through a special committee, set its stamp of approval upon the work of the committee by the adoption of the following report and recommendations in Chicago last October:

1. "Tuberculosis has been conclusively demonstrated to be contagious by bacteriological experiments, by clinical observations, and by a study of the history of the disease.

2. "Tuberculosis is a preventable disease. Its preventability follows as a logical sequence upon its contagiousness, but has likewise been demonstrated in practical life.

3. "The contagium of tuberculosis resides entirely and solely in broken down tubercular tissue. A person suffering from tuberculosis, therefore, does not become a source of danger to others until he begins to give off broken-down tubercular tissue, either in the form of sputa from the throat or lungs, diarrheal discharges from the bowels, or matter from a tuberculous sore such as lupus, white swelling, cold abscess, scrofula or tubercular inflammation of a joint.

4. "*A person suffering from tuberculosis can be made entirely harmless to those about him by thorough sterilization of all broken-down tissue immediately upon its being given off. With proper precautions it is therefore possible to live in the closest relation and upon the most intimate terms with consumptives without contracting the disease.*

5. "Tuberculosis is not hereditary. A predisposition to the disease can be transmitted from parent to offspring, but this is more true of tuberculosis than it is of all other contagious diseases.

6. "A predisposition to tuberculosis can be created anew by malnutrition or by anything which depresses the nervous system.

7. "Tuberculosis affects animals as well as man, and is identically the same disease in both. In domestic life, human beings and animals mutually infect each other.

8. "The media through which human beings are ordinarily infected by animals are milk and meat.

9. "Houses in which consumptives have lived and in which immediate sterilization of all broken-down tissue has not been practiced, are infected houses and are liable to convey the disease to subsequent occupants.

10. "Spitting upon floors and into handkerchiefs, and permitting the broken-down tissue to dry and become pulverized, is a prolific cause of spreading tuberculosis.

11. "Temporary occupation of hotel rooms, sleeping-car berths and steamer cabins by consumptives in the infectious stage can infect them so as to convey the disease to subsequent occupants unless proper precautions are taken against contamination of the bedding, furniture and walls with broken-down tubercular tissue."

We recommend the following practical measures for the prevention of the disease:

1. "The notification and registration by health authorities of all cases of tuberculosis which have arrived at the infectious stage.

2. "The thorough disinfection of all houses in which tuberculosis has occurred, and the recording of such action in an open record.

3. "The establishment of special hospitals for the prevention of tuberculosis.

4. "The organization of societies for the prevention of tuberculosis.

5. "Government inspection of dairies and slaughter houses, and the extermination of tuberculosis among dairy cattle.

6. "Appropriate legislation against spitting into places where the sputum is liable to infect others, and against the sale or donation of objects which have been in use by consumptives unless they have been thoroughly been disinfected.

7. "Compulsory disinfection of hotel rooms, sleeping-car berths and steamer cabins which have been occupied by consumptives before other persons are allowed to occupy them."

The City of London Hospital for Diseases of the Chest, and the North London Hospital for Consumption, the Royal National Hospital for Consumption, the National Sanitarium, the Manchester Hospital for Consumption and the Victoria Dispensary for Consumption, issue instructions to be observed by their patients to prevent spreading the disease. These all comprise the use of spit cups, disinfected cuspidors, the prohibition of expectorating on the floor indoors, or on the ground out of doors, and the avoidance of swallowing the sputa to prevent reinfection.

In the various sanatoria for tuberculosis in Germany and in many in this country similar instructions are issued. Some progressive private practitioners in this country have cards printed containing concise instructions for the disinfection of sputa, and other measures to prevent the further spread of the disease.

The various practicable measures for the restriction of tuberculosis may be summed up as follows:

1. Notification to the health authorities of all cases of tuberculosis, more especially of tuberculosis of the lungs. This report should be made by the physician who becomes cognizant of the case in the line of his professional duty, and by the householder himself. In order to reach all cases, such notification should be compulsory. While it is probable that some cases would escape report through the negligence or wilful disregard of the medical attendant, these would be few and would diminish as soon as the benefits accruing from attention to this regulation became apparent.

2. All public institutions, as hospitals, prisons, schools, asylums, etc., should be required to promptly report through their managers or executive officials, under penalty, all cases of tuberculosis occurring in such institutions.

3. Upon the recovery, death or removal of a consumptive from one house or apartment to another, notice should be given by the patient or his guardian, the householder or the physician, to the health authorities in order that appropriate measures of disinfection of the vacated premises may be taken.

4. Concise instructions for the guidance of patients with pulmonary consumption, or persons coming into frequent contact with them, should be furnished free of charge by the health authorities, upon notification of a case, or at the request of any person interested. These instructions should cover especially the means for destroying or rendering innocuous the sputa. *The isolation of patients is not necessary; when the material containing the tubercle bacilli—in these cases the sputa—is destroyed, the consumptive is no longer dangerous to his most intimate associates.*

5. The health authorities should be empowered to employ special inspectors to visit all cases of consumption reported, instruct the patients themselves and the family, or those brought closely and constantly in contact with them in the best means of avoiding self-infection and the communication of the disease to others, and to disinfect the apartments occupied by the consumptive if found necessary. It may be objected that this will interfere too much with the rights and privileges of the attending physician, but the latter would doubtless often be willing to be relieved of the tedious details necessary. There could, of course, be no objection to the attending physician performing these duties himself, provided they were thoroughly done.

Neither the inspector nor any other officer of the health department should be allowed to comment on the physician's treatment or to offer any suggestions in this particular. I believe it will be generally conceded that sanitary officials conduct themselves with tact and discretion in their relations with physicians.

6. Municipalities should be urged to establish special hospitals for the treatment of indigent consumptives. General hospitals should provide special wards for patients with this disease, and enforce in them the proper measures for the limitation of infection.

7. Railway and steamship companies should be required to change and disinfect all bed linen and other materials liable to infection from consumptive travelers.[1] Dr Albert L. Gihon, in an address before the Pan-American Medical Congress, has graphically referred to the danger in steamship travel with con-

[1] It is reported that on one of the Hungarian railway lines, special railway cars will be furnished for consumptives. These will be renovated and disinfected after each trip.

sumptives, and Dr. J. T. Whittaker has pointed out the many sources of possible infection in the Pullman car.

Such are, in outline, some facts and suggestions that I have thought not inappropriate to present to you on this occasion. The facts are vouched for by leading investigators, physicians and sanitarians. The suggestions are legitimate deductions from the facts recorded. No one who studies the question without prejudice can resist the conviction that tuberculosis, "the great white plague" is a preventable disease; that by concerted action on the part of physicians, sanitary authorities and the public, it can be stamped out among all civilized peoples; that, like leprosy and the black death, it should be of interest in the future merely to the historian of human progress.

CLINICAL HISTORY OF THE CASE OF PRESIDENT JAMES ABRAM GARFIELD.

BY ROBERT REYBURN, A.M., M.D.

PROFESSOR OF PHYSIOLOGY AND CLINICAL SURGERY MEDICAL DEPARTMENT HOWARD UNIVERSITY, WASHINGTON, D. C., AND ONE OF THE ATTENDING SURGEONS IN THE CASE OF PRESIDENT GARFIELD.

(*Concluded from page 624*).

September 17, 8:30 A.M. Temperature 99.8; pulse 108; respirations 21. September 17, 12 M. Temperature 102.2; pulse 120; respirations 24. September 17, 5:30 P.M. Temperature 98; pulse 102; respirations 24. Up to midnight last night the condition of the President had not improved. At 11 P.M. his pulse was 130 per minute, and it varied from 116 to 130 during the night. At about 3 A.M. he fell asleep and slept until 6 A.M. When he awoke his pulse had receded to 106, and his temperature to 98 (F). His temperature during the night did not vary much from the normal point. He slept fairly well in the night taking nourishment at proper intervals. At 11:30 A.M. he had a severe chill lasting about half an hour, and his pulse ran up to 137, followed by perspiration. After 12 M. the temperature gradually fell with diminished frequency of pulse and respiration, so that they were nearly normal by 6 P.M. He slept most of the afternoon, and took liquid nourishment. The paroxysms of coughing were less frequent than usual. During a lucid interval last night the President called Dr. Agnew to him and said: "Doctor, am I not critically ill?" "Your condition is critical," was the frank response, "I thought so," rejoined the President. At the time when the President was attacked with the chill, he complained of very severe pain in the anterior mediastinum; this pain recurred at intervals of six or seven hours until the President's death. This pain is now believed to have been due to the rupture of the aneurismal sac developed on the splenic artery, as show by the postmortem.

September 18, 8:30 A.M. Temperature 98; pulse 102; respirations 18. September 18, 11 A.M. Temperature 100; pulse 116; respirations 20. September 18, 5:30 P.M. Temperature 98.4; pulse 102; respirations 20.

There was no perceptible febrile rise in the temperature of the President during the night, the pulse ranging from 102 to 112 per minute. The cough was less troublesome than on previous nights, and the expectoration is unchanged. He was able to take the nourishment and stimulants required, without gastric disturbance, and there was no evidence of mental aberration during the night. This morning his temperature was six-tenths of a degree (F.) below the normal point, and he was immediately sponged with hot alcohol and wrapped in hot blankets. Enemata containing defibrinated beef blood and stimulants have been administered to him to bring about reaction.

September 18, 6 P.M. The President though quite weak has passed a very quiet day. There has been no recurrence of chill or mental disturbance during the day. At 9 A.M. a slight febrile rise took place which began to subside at 11 A.M.

September 18. To-day the President called Colonel Rockwell to him and said: "Do you think my name will have a place in human history?" The Colonel answered: "Yes, a grand one, but a grander one in human hearts. You must not talk in that way. You have a great work yet to perform." After a moment's silence he said, sadly and solemnly: "No, my work is done."

September 19, 8 A.M. Temperature 98.8; pulse 106; respirations 22. September 19, 12:30 P.M. Temperature 98.2; pulse 104; respirations 20. September 19, 6 P.M. Temperature 98.4; pulse 102; respirations 18.

The President's condition continues to be very unfavorable, and the end is evidently approaching fast. Shortly after the issue of last evening's bulletin, he had a chill lasting fifteen minutes. The febrile rise which followed lasted until midnight, during which time his pulse ranged from 112 to 130 per minute. The sweating which followed was quite profuse. The cough which was troublesome during the chill gave him little annoyance during the remainder of the night. At 8:30 A.M. another chill came on, on account of which the dressing of the wound was temporarily postponed. He slept most of the morning, coughing but little and with more ease.

September 19, 11:30 P.M. After the evening bulletin was issued at 5:30 P.M. the condition of the President remained about the same as during the afternoon, the pulse varying from 100 to 106 per minute, and with rather increased force and volume. After taking nourishment he fell into a quiet sleep. About thirty-five minutes before his death, and while he was asleep, his pulse rose to 120.

September 19, at 10 P.M. General Swaim who was watching in the room with the President heard him gasp, and make an effort to speak. He at once arose and came to his bedside. He stood there for a few moments looking at him as he apparently lay asleep. The President opening his eyes saw and recognized him and said: "Well, Swaim," and then immediately afterward, "Oh my! Swaim, what a pain I have right here," putting his hand to his heart. General Swaim leaned over and felt his pulse, and then finding himself unable to count its beats, sent instantly for Dr. Bliss, who was in the next room. It required but a glance to see what was coming. Death was at hand. Dr. Bliss sent immediately for Drs. Agnew and Hamilton, and called Mrs. Garfield, who was in the adjoining room. Within half a minute Mrs. Garfield entered the sick chamber. Nothing was said but the one question she addressed to Dr. Bliss, "Is there no hope?" "Madame," replied the Doctor gravely, "he is dying."

By this time Mrs. Rockwell and Miss Rockwell,

Entered according to Act of Congress, May 29, 1893, by ROBERT REYBURN, M.D.

Miss Garfield, Private Secretary Brown, Colonel Rockwell and Dr. Agnew had entered the room. Mr. John Ricard, Mr. H. L. Atchinson and the four attendants were also present. The President was quite unconscious. His eyes were half closed, and the balls of them turned upwards, so that the lines of white showed between the half-opened lids. There was no sound in the sick room except his breathing, which at times was loud and stertorous, and then again could scarcely be heard. It was not many minutes (at 10:35 P.M.) before the life went out so gradually that it was hardly manifest when he was dead. When the limbs had assumed that eternal rigor which only decay can change, Dr. Bliss tried to feel the pulse, and endeavored in vain to hear the heart beats, and then said in a half whisper, "It is over."

V.

THE CAUSES OF THE DEATH OF PRESIDENT GARFIELD.

It is surprising, considering the large amount of medical literature in existence devoted to the case of President Garfield, to find so many members of our profession having very vague ideas concerning the cause of his death.

The immediate cause of his death was the spontaneous rupture of a traumatic aneurism formed on the splenic artery, probably as the result of the abrasion of the outer coats of this blood vessel by the bullet at the time of the shooting. This was a complication that could neither be foreseen or prevented, nor could it have been relieved by any exertion of surgical or medical skill on the part of his surgeons. The proximate cause of his death (and one that would have inevitably soon terminated his life even had the bursting of the aneurism not taken place) was the profound condition of septic poisoning (septicemia) which existed in the case of the President for a considerable time previous to his death. The initial point of this septic condition probably dates as far back as the period of the first chill (July 23), and though there were apparent symptoms of convalescence at various times, yet the course of this septic infection was practically continuous, and could only result in inevitable death. This brings up the grave and momentous question for consideration viz: Could this septic condition in the President have been prevented by a different method of treatment on the part of his surgeons? It is useless for me to tell how many weary days and wakeful nights I have spent in arguing with myself the various and opposing arguments on either side of this question. In order to give a calm and unbiased judgment in this matter, let us go back a little and study the course of the missile in the body of the President with the nature of the injury produced by it.

The bullet from the pistol of the assassin entered his body in a horizontal and slightly downward direction immediately over the eleventh rib about three and one-half inches to the right of the vertebral spine. Its course was deflected downward and somewhat to the left, and then it passed to the left, fracturing the eleventh rib; then it fractured the twelfth rib at a point slightly more to the left than the fracture of the eleventh took place, being still more deflected to the left by the rounded and curved surface of the twelfth rib. It then entered the upper part of the right side of the body of the first lumbar vertebra, involving the inter-vertebral cartilage of the vertebra above (twelfth dorsal) in its course. The bullet emerged from the left side of the body of the first lumbar vertebra at a lower



Fig. 1.—Lateral view (right side) of bodies and spinous processes of twelfth dorsal and first and second lumbar vertebræ of President Garfield, showing wound of entrance in body of first lumbar vertebra.



Fig. 2.—Anterior surfaces of twelfth dorsal and first and second lumbar vertebræ of President Garfield, showing fractured twelfth rib and wound of exit.

point down than its point of entrance, and continuing its course to the left with diminishing velocity, passed behind the pancreas to a point just below its lower surface where it was found at the time of the

postmortem examination. The course of the bullet was wholly without the peritoneal cavity.

As will be seen by the engraving, the course of the missile after it entered the body of the President followed the line of an irregular, nearly S-shaped curve with its convex surface directed to the back of the President, and passing to the left and gradually downward to its termination. A consideration of this fact will show at once how impossible it was to obtain any information concerning the course of the bullet, or its location in the body by any examination made from the outside of the body. No probe could be passed through the wound in the body of the vertebra, (even if it had been considered advisable to attempt such a proceeding), and the purulent material formed in the wound as the result of bacterial action, gradually by the action of gravity dissected its way downward toward the right iliac fossa, and formed a false channel or sinus, which misled the surgeons, and made them suppose the bullet lay in



Fig. 3.—Oblique view of twelfth dorsal and first and second lumbar vertebræ of President Garfield, showing wound of entrance and point of exit and carious condition of bodies of first lumbar and twelfth dorsal vertebræ. (The probe has been passed from above and somewhat downwards through wounds of entrance and exit).

that part of the body. The carious condition of the body of the first lumbar vertebra found to exist at the time of the postmortem was quite sufficient to account for the septic condition of the President during life. It may here be remarked that the spinal canal of the first lumbar vertebra was not opened by the bullet in its course through the body, nor were there any gross anatomical lesions found in the spinal cord at the time it was examined. It should be remembered, however, that the weapon with which the President was shot was an English revolver of what is commonly called the "bulldog pattern," that was capable of throwing a bullet with great propulsive force; and crushed and splintered the porous cancellated bony tissue in its passage through the body of the vertebra.

The lacerated condition of the cancellated structure of the first lumbar vertebra doubtless contributed largely to the production of the septicemic condition, which was in no wise due to lack of proper or sufficient drainage. More favorable circumstances for its production than existed in the comminuted and softened cancellous tissue, with its open venous sinuses bathed in ichorous pus could scarcely be imagined. Dr. William White (Review of some of the more important surgical problems of President Garfield's Case, p. 15, 1882): "The fact that drainage was thorough and complete, and that no portion of the unfavorable symptoms was due to failure in this respect, was fully established by the absence of purulent collections, either along the track of the ball or in the passage caused by the burrowing of the pus. There was no time previous to the first operation (July 24) at which the accumulated pus did not pass freely out of the original wound. Its exit was favored by gravitation after the two incisions had been made, which

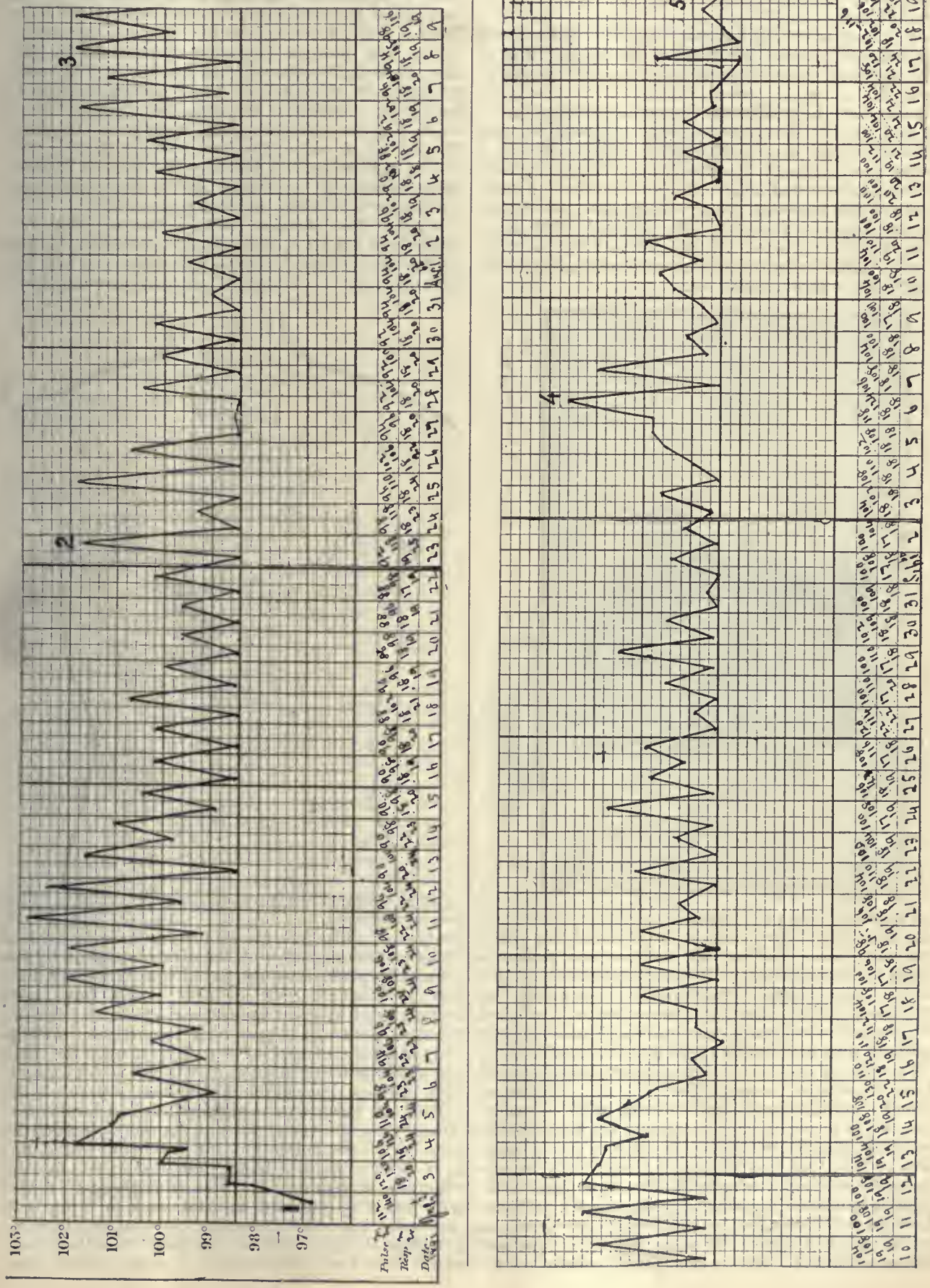


Fig. 4.—Antero posterior section of bodies and spinous processes of twelfth dorsal and first and second lumbar vertebræ of President Garfield, showing carious condition of the bodies of twelfth dorsal and first lumbar vertebræ.

brought the external openings to a lower level, and enabled them not only to drain the lumbar and iliac regions, but also to carry away any discharge that might have come from the fractured vertebra." Antiseptic treatment was employed throughout the case as carefully as it was possible to do so, and drainage tubes were used until it was evident that their use was unnecessary."

In attempting to reply to the above mentioned questions, much time and labor have been spent in reviewing the various authorities on this subject. The consensus of opinion of all the great masters of the art of surgery is to the effect that these injuries are almost necessarily fatal. Dr. Lidell, justly esteemed as one of our most experienced of American military surgeons, says (*American Journal of the Medical Sciences*, Vol. 48, p. 317): "Leaving out of the calculation such fractures as involve the spinous processes

Chart of the temperature, pulse and respiration of President Garfield from July 2, 1881 to September 19, 1881. By Robert Reyburn, M.D.
1. Period of profound shock and internal hemorrhage. 2. First rigor (septic infection). 3. Opening made to drain the President's wound. 4. President removed to Elberon, N. J. 5. President died at 10:35 P.M.



alone, the writer has never seen a case of gunshot fracture get well, and he might add that he has never seen life prolonged for a month after the infliction of that injury."

In Circular No. 6, Surgeon-General's Office, 1865 (issued during our Civil War), it is reported that of 187 recorded cases of gunshot fracture of the vertebræ, all but seven proved fatal; six of these were fractures of the transverse or spinous apophyses. It is well known that fractures of the vertebral processes are not especially fatal injuries, and that a large proportion of them recover. Many of these have been recorded under the general head of fractures of the vertebræ, but evidently have no bearing on the case in question. Dr. Demme, ("Military Surgery," 1868) says: "Extensive injuries or lodgment of balls in vertebræ or in the cord give rise to death or incurable paralysis."



Fig. 5.—Oblique view (from the left side) of the twelfth dorsal and first and second lumbar vertebræ of President Garfield.

Professor Gross ("Treatise on Military Surgery," Vol. 2, p. 82) says: "Gunshot wounds of the vertebræ, with lesion of the spinal cord, are nearly always, if not invariably fatal. Of twenty-two cases of this kind in the English army in the Crimea, not one recovered. Even when the bones alone are affected the danger is generally very imminent, most of the patients thus affected dying in a short time."

Professor P. S. Connor (Ashhurst's International Encyclopedia of Surgery, 1882, Vol. 2, p. 203) says: "The prognosis of vertebral injuries, aside from the less severe forms of contusions and fractures of the processes, especially the spinous, is very grave, death usually resulting from lesion of the cord, from septic infection, from caries with abscess, or from associated wounds of a viscus or large vessel. As was declared by Ollivier, in gunshot cases the accidents are graver and death generally more rapid than in those otherwise caused. Of the thirty-two cases of vertebral fracture among the British soldiers in the Crimea, all proved fatal except four, which were either fractures of the transverse processes in the neck, or of the spinous processes only, and in the French army, 181 died out of 194 (93.3 per cent.). In the war between Prussia and Hanover in 1866, there were eight cases with six deaths. Of 628 cases tabulated by Otis, 349 or 55.57 per cent. ended in death, the mortality according to locality having been: For the cervical region 70 per cent. (63 out of 90); for the dorsal region 63.5, (87 out of 137); and for the lumbar region, 45.5 per cent. (66 out of 145); but in almost all probably, of the non-fatal cases, the fractures affected only the processes."

In the *Wien Medicin Wochen*, No. 47, 1881, Professor Max Schuller, after giving a complete history of President Garfield's case concludes as follows: "Taking into consideration all the circumstances

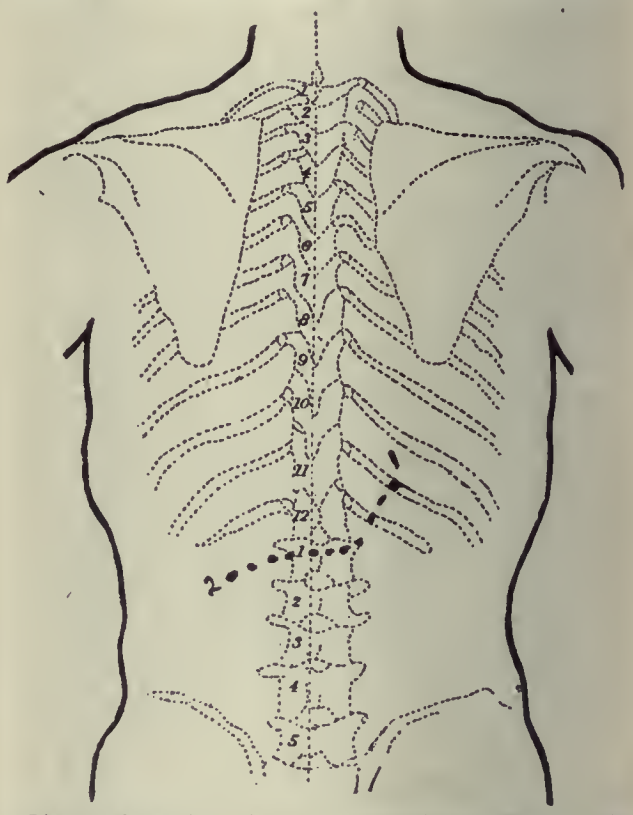


Diagram of posterior surface of body of President Garfield. 1. Point of entrance of bullet. 2. Location of bullet when found during the post-mortem examination.

connected with this gunshot wound, it is evident that the determination of the direction taken by the missile by probing would have been extremely difficult, and had it been possible, would have been accompanied by great danger to the patient. Among the symptoms which presented themselves immediately after the receipt of the injury, only the pain and disturbance of insensibility in the lower extremities, gave an indication of the true course of the bullet. If, however, the supposition had been entertained that the vertebral column was wounded, the question of the indication for treatment would not have been different from that instituted by the attending surgeons." He then continues: "To prevent sepsis in gunshot injuries, and to bring to a successful issue such a wound as that received by President Garfield, is one of the most difficult achievements, and can not always be accomplished, even

with the most careful and assiduous application of aseptic surgery."

Dr. John Ashhurst (*North American Review*, December, 1881, p. 594) says: "Looking at the whole case from beginning to end, I do not see that the treatment could have been altered in any way to the advantage of the illustrious patient; nothing was done that should have been omitted, and nothing was left undone that could possibly have been of benefit."

Dr. J. Marion Sims (*North American Review*, December, 1881, p. 300) says: "The President's surgeons did all that men could do, all that the present state of science would permit, and all that could have been done, even if they had first ascertained the course and direction of the ball." "Our whole medical literature does not contain a single well authenticated case of recovery from such a wound." "He had not the least chance of recovery under any circumstances or any treatment."

Dr. John T. Hodgen (Ibid, p. 610) says: "In reviewing the history of the case of President Garfield, I can find no reason for adverse criticism of any part of the management."

Finally, while it is difficult and perhaps impossible for any one to give a dispassionate judgment, in a case in which we were so deeply and personally interested as in that of the President, yet it is the deliberate conviction of the writer (as it was of all the surgeons in charge of the case) that the President was mortally wounded when he received the fatal shot. Freely confessing our errors of diagnosis, yet we believed that no different course of treatment could have saved his life. I know that I speak only the truth when I say that no wounded man ever received more tender, loving and devoted service, not only from his surgeons but also from the faithful friends who nursed him through his long and weary illness. We gave him this cheerfully and would have sacrificed even our lives for him, if by so doing we could have saved his. We would have done this not only because he was President, but because we loved the man. Poor patient, uncomplaining, suffering President. How our hearts ached for him; Member of Congress, Senator, President, stricken down at the time when he had received in rapid succession the highest honors his country could bestow, he passed through days, weeks and months of suffering, through the valley of the shadow of death, to that heavenly country, where there is neither sorrow, nor suffering nor pain. We can not understand why such things should be. We can only bow in humble submission to the will of Him who ruleth all things both in heaven and earth, and who doeth all things, well.

THE END.

A NEW APPARATUS FOR ADMINISTERING ANESTHETICS.

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THE ANESTHETIZER.

This new apparatus has for its object *to force the vapor alone* of anesthetics into the pharynx through a tube passed into the nose or mouth, or to force the vapor into a cone. I call this apparatus by the newly coined word, "anesthetizer," because such a device requires really a new word to express its mode of action, which is active since the vapor is *forced* out of the receptacle into the patient by an agent which is outside of the patient, who is himself passive; whereas inhalers are passive and require the exposure to the air of the anesthetic for their proper working, and require also an active coöperation from the patient.

The apparatus consists of a receptacle or bottle of suitable size with a stopper traversed by two tubes, an inlet and an outlet tube, *neither of which dips into the liquid anesthetic, but both stop close to the stopper.* The two tubes are of the same diameter throughout and at both extremities, about one-quarter of an inch more or less. Stop cocks may be fitted to them to prevent the spilling or the evaporation of the anesthetic when the apparatus is not used. The inlet tube is connected with a compressible bulb which is fixed at *both ends* to the receptacle by a simple metallic frame, so that the apparatus can be readily held and worked with one hand, leaving the other hand free to take care of the pulse. A ring adapted to the frame on the side opposite to the bulb, and through which a finger is passed, assists in the working. A hook with or without a chain may be adapted to the frame so as to hook the apparatus to the vest or coat, as is used in some inhalers. The outlet tube from the stopper is provided with a rubber tube of suitable length which is connected with a cone, or is introduced through the nose or through the mouth, into the pharynx.



SOUCHON'S ANESTHETIZER

The receptacle or bottle is filled or emptied by simply removing the cork.

To guard against any possibility of forcing the liquid anesthetic through the outlet tube, and also to guard against any spilling, so as to enable the anesthetist to lay the bottle on the bed or table without any apprehensions as to the consequences, it may be well to fill loosely the bottle with sufficient absorbent cotton to imbibe and hold the anesthetic; a sponge or any absorbent material will do as well. This, however, *may* diminish somewhat the strength or quantity of the vapor at each pressure of the bulb. After the operation is over the anesthetic unused keeps in the bottle and cotton as well as in a separate bottle, provided the tubes are disconnected and the holes plugged tightly.

The bulb is detachable and can be renewed whenever this becomes necessary.

The advantages of this apparatus over inhalers of a more or less similar kind, consist: 1, in that neither the inlet or the outlet tubes dip down into the liquid anesthetic or come near to it, thus preventing the *liquid anesthetic* from being driven into the outlet

tube, thence into the face or pharynx; 2, the absorbent cotton prevents also against this same accident and against the spilling of the anesthetic when the bottle is laid on the side or inverted; 3, in the fixation of the bulb at *both ends*, making the fastening of the bulb more secure and the bulb more easy to work with the same hand that holds the apparatus; 4, the ring which assists in holding it; 5, its small size, about five inches in height by two in diameter; 6, its cheapness; 7, the facility with which one can be constructed *ad hoc*; 8, the thorough manner in which it does its work; 9, the impossibility of its getting out of order.

TUBO-NASAL ANESTHESIA.

Without such an efficient and simple apparatus it is impossible to make a *daily practical success* of maintaining the anesthesia through the nose or mouth in all operations on the face or its orifices, when otherwise the cone or wire mask has to be removed every few minutes to uncover the field of the operation to enable the operator to proceed with the operation. Soon after the inhaler is removed, the patient recovers from the effects of the anesthetic and the operator has to stop operating to allow the cone or mask to be applied over the face. With this anesthetizer, anesthesia is maintained uninterruptedly.

It is a great saving of time, pain, bleeding and shock to the patient, thereby contributing materially to the saving of life in operations which for the most part are long and bloody and often bring the patient to death's door. It is also a great saving of mental strain to the surgeon who can proceed rapidly and uninterruptedly with the operation.

The nasal tube should be introduced down into the *lower pharynx*, otherwise the patient breathing through the mouth may not inhale sufficiently of the anesthetic. By compressing the bulb at the onset of an inspiration is best; this rule compels a closer watch over the respiration. By compressing the bulb more or less rapidly and thoroughly, the amount of the anesthetic is regulated; this must be borne in mind lest too much anesthetic be given. It does not require much anesthetic to maintain the anesthesia after the *patient has been well anesthetized*. Any soft tube of whatever material will perhaps answer, but an ordinary soft red rubber catheter is the best, and is easily obtainable; this tube should be as large as the nasal cavity will admit. It is also important that all connections should be air-tight for obvious reasons. Care should be taken that no bends or kinks form on any part of the tubes, as this will interfere with the proper working of the apparatus.

The one who administers the anesthetic can place himself in any position where he will be best out of the way of the operator, even at the head of the table or sitting, without interfering with the proper working of the apparatus.

In case of emergency any powder-blower with a bottle will answer. Care should be taken that the long stopper-tube should not dip down into the anesthetic lest too much vapor and liquid be thrown in, even upon moderate pressure of the bulb, unless the absorbent cotton be used. The ends of both tubes *should lie in the vapor only of the upper* part of the bottle. Any atomizer will do also, provided the tube that dips down into the fluid be removed, otherwise the liquid anesthetic will be driven through the outlet tube; cotton may also be used in the bottle or not.

It is easy for any one to construct an apparatus *ad hoc*, out of any bottle of suitable size. The two holes through the cork are quickly burned through with a red hot piece of large wire; any pieces of tubing, glass or metal, or two goose quills can answer; the bulb of a Davidson syringe or any other obtainable bulb may be adapted; it requires little anesthetic to maintain the anesthesia after the patient has been well anesthetized by the ordinary method.

This apparatus was first exhibited in Ward Eight of the Charity Hospital, in connection with a patient upon whom Dr. Matas was operating for cleft palate.

It was employed throughout a whole operation by the author in a case of tumor of the superior maxilla which was operated upon by Dr. A. W. de Roaldes, in the presence of Drs. R. Matas, A. McShane, F. Landfried, P. Delaup and several others. It was the case of a boy 11 years old where a portion of the right superior maxilla had to be gouged for a most interesting case of odontoma. The patient was anesthetized by the ordinary method, but from the moment the operation began, the anesthesia was kept up by the above means, for over an hour, to the thorough satisfaction of all present. The operator did not stop one minute during the operation, until it was completed. The anesthesia was complete all the time. At one time the head had been lowered (Rose's position), and kept in that position quite a long time, without interfering with the administration of the anesthetic. Barely three-quarters of an ounce of chloroform was used.

The apparatus was also used in the amphitheater of the Charity Hospital on a patient from the service of the author (Ward Two). It was the case of a mulatto adult whose chin and lower jaw had been shot off, leaving a large gap which had to be closed by a plastic operation. Dr. Matas was kind enough to operate while the author administered the anesthetic with his apparatus. The operation was performed before the class of Tulane Medical College and of the members of the Polyclinic. The anesthesia lasted one hour and three-quarters with perfect satisfaction. No bad after effects followed in *either* of the two cases. The apparatus was later on used in other cases with equal satisfaction.

BUCCAL TUBO-ANESTHESIA.

Should the operation be on the nose itself, where the tube might be in the way, the tube could be introduced through the mouth into the lower pharynx, care being taken to prevent the tube being bitten, by using a wedge or a gag or by connecting the end of the tube with a metallic tube, or, best, with a disinfected male metallic catheter which the teeth could not mash.

FACIAL TUBO-ANESTHESIA.

The apparatus may also be used to replace the ordinary way of administering anesthetics for operating in general, by pinning the extremity of an outlet or discharging *long* rubber tube to the interior of the apex of a cone, made of a towel of several ply of paper; fasten the cone with strings tied by a bow knot around the head of the patient. Apply the base of the cone close and tight around the nose and mouth so as to exclude the air; enough air is thrown in coming with the bulb from the anesthetic. For that reason the wire mask does not answer well, as it allows too much air. Dr. A. L. Metz, Demonstrator of Practical Chemistry in the Tulane Medical College, says that

there are eight parts of air to one of chloroform forced out of the receptacle at each compression of the bulb. By pressing the bulb properly, anesthesia was duly produced and kept up in the cases where we employed it. There was no burning of the lips and nose. The motions of the head of the patient are unheeded because of the length of the tube and of the fastening of the cone. In case of vomiting, the strings are readily untied and the cone removed.

If the operation is to be on the face or its orifices, the facial process is abandoned as soon as the patient is anesthetized, and the tube is introduced through the nose or mouth into the pharynx as described above.

OBSTETRICAL TUBO-ANESTHESIA.

The apparatus is useful also in administering anesthetics during labor, using a cone and perhaps a longer tube than above described. As soon as a pain is about to commence, the quick compression of the bulb throws in all the vapor needed. The accoucheur has one hand free to make his examinations. He may trust the apparatus to any one present who will press the bulb only when directed by the accoucheur.

The accoucheur is also relieved of the painful position of stooping over the patient to manage the cone and the anesthetic. The patient may safely administer the anesthetic to herself by compressing the bulb herself, since when unconsciousness is produced she can no more work the bulb and take too much anesthetic. There is no danger of spilling the anesthetic, if the absorbent cotton has been properly arranged in the bottle.

SOCIETY PROCEEDINGS.

Georgia State Medical Association.

Abstract of the Proceedings of the Forty-fifth Annual Meeting held in Atlanta, April 18, 19 and 20, 1894.

FIRST DAY—MORNING SESSION.

The Association convened in Concordia Hall, and was called to order by the President, DR. W. H. ELLIOTT, of Savannah, at 10 A.M.

Prayer was offered by REV. I. S. HOPKINS.

An address of welcome was delivered by the HON. N. J. HAMMOND, of Atlanta, and PRESIDENT ELLIOTT responded thereto in behalf of the Association.

DR. J. B. S. HOLMES, of Atlanta, took the chair, and PRESIDENT ELLIOTT delivered his address. He selected for his subject the

DUTY OF THE PHYSICIAN TO HIS PATIENT.

He began by refreshing the memory of the members by not only a recital of the law, but asked attention to some practical applications of its precepts. He quoted largely from the American and English Encyclopedia of Law, and pointed out the obligations the law implies upon the physician. Directing attention to the Code of Medical Ethics of the AMERICAN MEDICAL ASSOCIATION, he said that this Code was formally adopted by the Constitution of the Medical Association of Georgia, and the fact of its membership made it binding upon the members. It was an obligation voluntarily assumed, and therefore they were bound by the highest dictates of honor to faithfully observe its injunctions. He closed by saying that the standard of responsibility was high, but that it should only increase our zeal to attain it. "If we regard our patients as men and brethren, we will, without the restraint of law and code, follow the Golden Rule and do unto others as we would have them do unto us. If we are faithful to this, what is our reward? Not only "the promise of the life that now is," but when the Son of Man, who was our brother here on earth, shall be the King upon his throne of his glory, he will say: "Inasmuch as ye have done it unto one of the least of these, my brethren, ye have done it unto Me."

The address elicited considerable applause throughout its delivery.

The report of the Committee of Arrangements was then read by the Chairman, Dr. Willis F. Westmoreland, of Atlanta.

DR. C. D. HURT, of Atlanta, followed with the report of the Committee on Program.

The reading of papers was then proceeded with, and the first paper was read by DR. W. C. HUMPHRIES, of Acworth, entitled

THE TREATMENT OF PNEUMONIA,

in which he confined himself mostly to the acute lobar variety. The majority of cases with which he comes in contact assume from the beginning the sthenic type and require active or depleting measures. If called to treat the patient in the first stage of the disease he resorts to moderately active catharsis, and an agent that will arouse the dormant secretions and assist nature to eliminate from the system the effete products produced by the disease. For this purpose he finds no better remedy than calomel, and usually prescribes from six to ten grains to an adult in combination with Dover's powders or some preparation of opium and bismuth subnitrate, His next effort is directed to reducing the force and frequency of the heart's action, and for this purpose he has tried several remedies, such as aconite, gelsemium, the coal tar derivatives, etc., but none of them have given so great satisfaction or such uniform results in his hands as veratrum viride. He uses this oftener than any other heart sedative in this disease and it seldom ever fails him. He does not give it to such an extent as to produce nausea, but in small and often repeated doses. With veratrum he combines turpentine in the form of an emulsion. The author then dwelt upon external applications in the treatment of the disease.

DR. O. H. BUFORD, of Cartersville, followed with a paper on the

FLUID EXTRACT OF JABORANDI AS AN ABORTIVE TREATMENT IN PNEUMONIA.

The author thinks that in this drug we have a remedy that in many cases will force a crisis when given early in the congestive stage. He had used it for several years with good effect. After giving fluid extract of jaborandi, he follows it with quinin and stimulants if indicated. The author then reported three cases in which he used this treatment.

DR. T. M. GREENWOOD, of Mineral Bluff, read a paper on the

ABORTIVE TREATMENT OF PNEUMONIA.

He said his mode of treating the disease was to apply a mustard plaster over the entire portion of the lung affected. He usually makes or has them made under his special directions, using the purest brand mixed with water only, letting the plaster remain on the patient for six hours. He next investigates the condition of the bowels, the secretions in general and, if necessary, gives a mercurial. If this does not cause a free evacuation of the bowels, he administers Epsom salts or castor oil. He next prepares a solution of salicylate of soda, containing about sixty grains of soda to an ounce of water, giving one teaspoonful every two or three hours, according to the intensity of the pain and the amount of fever. Expectorants in his hands have done little or no good, generally doing harm, the great objection to this treatment being, when long continued, its rejection by the stomach. He considered this treatment abortive, for in his hands it has either been abortive or curative. A trial of over fifty cases have given varying success without a single death.

DR. C. S. WEBB, of Atlanta, called attention to the fluid extract of ergot to reduce the temperature in the first stage of pneumonia. Ergot is to some extent a heart depressant. It slows the heart and reduces the temperature, and in his opinion is not so dangerous a drug as the fluid extract of jaborandi.

DR. R. R. KIME, of Atlanta, said it was absolutely essential in the treatment of pneumonia to distinguish between the first stage of the affection and that of absorption of the circulation after consolidation had taken place, and adapt the treatment to these conditions, otherwise failures would be made. Bleeding and the use of the coal tar derivatives should have a limited place in the treatment of the disease. It was worse than folly to tax the heart to its utmost capacity by the use of cardiac remedies. But the physician should increase the power of the heart, equalize the circulation in order to get rid of the material in the lung. At

this stage many cases could be tided over the critical period by the hypodermatic use of strychnin.

DR. W. H. DOUGHTY, of Augusta, formulated the treatment of the disease under four heads: 1, give the patient plenty of fresh air; 2, keep him clean; 3, feed him; and 4, come just as near as possible to letting him alone.

DR. WM. O'DANIEL, of Bullard, considered the disease self-limiting and advocated supportive treatment. The patient needs to be supported early; that if the physician waited for any length of time the loss could not be made up.

FIRST DAY—AFTERNOON SESSION.

DR. H. J. WILLIAMS, of Macon, read a paper entitled

A CASE OF SARCOMA OF THE ILIUM FOLLOWING A RAILWAY INJURY.

The patient was 32 years of age, strong and healthy, a trainmaster by occupation. There was a wreck on his division, and it was important that the roadway should be rapidly cleared, and so he went to the scene of the accident. A guide rope was attached by one end to a locomotive and by the other to some part of the wreck, so that the power of the locomotive could be used in removing the obstacle. The patient was standing by this rope, it broke under the strain, he became entangled and was dragged some distance by the engine, striking his right buttock against the corner of a cross-tie. He felt no inconvenience from the accident, except a momentary pain following a contusion near the exit of the great sciatic nerve, and returned to work. A month later he consulted Dr. Williams for a pain in the right buttock. One day while using deep injections the author thought he felt the end of his needle scraping denuded bone. This he mentioned to the patient and then received the first intimation of the injury received at the wreck. From this he constructed a theory that the bone had been injured, and denuded of periosteum was pressing upon the sciatic nerve at the notch in the pelvis. The doctor suggested the possibility of an operation, which at this time was declined. About six weeks or two months later he operated. Beginning his incision as for aneurism of the sciatic artery, at the posterior superior spine of the ilium, it was carried over the top of the larger tumor of the greater trochanter, and the tissues were dissected down to the tumor. It was situated on the flange of the ilium just above the exit of the sciatic nerve and attached to the bone, though unattached to the muscles over it. The upper and posterior third of the great sciatic notch was denuded of periosteum and a stellate fracture radiating from the notch upward and backward for an inch and one-half was found, the bone being pressed slightly inward upon the sciatic nerve. In attempting to cut out the tumor, a cavity in it was opened, followed by a gush of fluid, and a small clot. He feared he had opened an aneurismal sac. Running his finger into this sac to find the opening of the artery, he found the interior of the cavity incrusted with small spiculæ of bone. There was no collapsing of the cavity nor any further escape of the fluid after the first gush from it. He removed several small pieces of denuded bone and as much as possible of the tumor. Not a drop of pus was found in the growth. The operation was a very bloody one and the patient was much depressed. The wound was packed with iodoform gauze and dressed antiseptically, the patient put between blankets, stimulants administered hypodermatically and hot bottles used to bring on reaction. Examination of the growth disclosed it to be a subperiosteal sarcoma of the mixed type. The patient did well for weeks following the operation, but died some forty-three days after the operation and nearly eight months after the accident.

DR. J. MCFADDEN GASTON, of Atlanta, read a paper entitled

OPERATION FOR FIBRO-CYSTIC SARCOMA INVOLVING THE RIGHT INFERIOR MAXILLARY BONE.

The patient, a colored woman, was 35 years of age, and presented herself with a reproduction of the growth, at the clinic of the Southern Medical College. Examination revealed a large mass involving the region from the angle to the mental curve of the right lower maxillary bone, extending upward to the zygomatic arch and inward to the root of the tongue. There was a protuberance on indurated substance in the middle and a tense elastic portion above, with a larger formation of the same character below. The entire cavity of the mouth on the right side was filled with the tumor. The previous operation was performed about two years ago, and the patient states that the growth commenced some six years prior to that time. An operation being advised and consented to, the patient was instructed to take two compound cathartic pills night and morning to procure free evacuations from the bowels, and to refrain from food on the morning preparatory to undergoing the operation. At the outset of the operation a strong silk ligature was passed through the tongue and its ends knotted together so as to form a loop, which was to be made available to prevent the tongue from dropping back and interfering with respiration at a subsequent stage of the operation. This precaution was made requisite from the record of cases in which suffocation has resulted from its omission when the lateral attachments of the tongue have been severed. The next step was the extraction of two of the lower incisor teeth, where it was expected to divide the thick bony structure subsequently, either with the saw or bone forceps. This would effect its detachment in front and another section behind the angle of the jaw, through the condyloid would separate the bone behind, so that all the intervening portion of the lower maxillary bone on the right side should be detached with the tumor. Dr. Gaston's greatest concern in regard to hemorrhage connected with the operation was relieved by the expectation of leaving the condyloid process and thus obviating the risk of wounding the internal maxillary artery by its removal. Having planned to accomplish the incision and dissection, so far as possible, without entering the buccal cavity, and thus avoid the entrance of blood into the fauces, he first divided the skin from a point immediately below the middle of the lower lip along the line of cicatrix from the former incision back to the angle of the right lower jaw, and thence upward to the prominence of the zygoma, keeping away from the temporal artery in front of the ear. The skin was then dissected back on the lower side from the tumor and in like manner above to the zygomatic arch, thus exposing the exterior surface of the diseased structure without entering the buccal cavity. The few cutaneous arteries which were divided were secured with artery forceps in the course of the dissection on the lower border. Dr. Gaston outlined the further details connected with the operation. Following the operation there was a steady increase of coma, with a gradual decline of vital force until the death of the patient six days and four hours after the operation. With the favorable state of the wound in the progress of this case, and the final retention of urine, Dr. Gaston is disposed to consider the coma of uremic origin, but has not sufficient data upon which to base this opinion. The cause of death was given as septicemia in his certificate.

DR. M. B. HUTCHINS, of Atlanta, read a paper on

MALIGNANT GROWTHS OF THE SKIN: THEIR DIAGNOSIS AND TREATMENT,

in which he said that while not all the growths to be described are strictly malignant, in a literal sense, the term applies, in that they are either malignant or terminate in malignancy. We have the carcinomata of the skin with epithelioma as a related disease, and the sarcomata. Epithelioma being more frequently met with, Dr. Hutchins described this first: He said that authors described three varieties of epithelioma: the superficial, the deep-seated, the papillary. These three varieties were then interestingly described.

Coming to the treatment of epithelioma, he said this must be limited to local measures, as internal treatment has no value. Incomplete destruction or removal is liable to do more harm than good. Whether caustics, the actual cautery, the galvano-cautery, écraseur or knife are used, the operation must be thorough and the destruction of the growth complete. The means used must be governed by the size, extent and situation of the growth. The caustics are said to be best for superficial growths. Caustic potash may be bored into the diseased tissue, and into its border, any excess being neutralized by dilute acetic acid. It is not an exceedingly painful method. Pure carbolic acid, followed in a few minutes by nitric acid, is mentioned by Shoemaker. Chlorid of lime has been used, but it is very painful and has no advantages. Marsden's paste was referred to as an excellent application for certain forms of epithelioma, as the small, not too deep. The curette may be used for very superficial growths or preceding the caustic application.

Regarding the use of the knife, the author said there was a popular prejudice against it, and people would submit to anything in preference to its employment. There are recurrences after the knife but their frequency, their malignancy, and their terribly destructive action following inefficient or incompetently used applications remove none of the fear of the knife. For the majority of cases the knife is the only remedy, and it is to be preferred where not mechanically

contra-indicated. The deep-seated and the papular forms especially require excision. Every visible particle of the disease must be removed, and with it a perfect coating of healthy tissue.

Dr. Arthur G. Hobbs, of Atlanta, read a paper entitled "Treatment of Corneal Ulcers with the Galvano-Cautery."

Dr. J. W. Hallum, of Carrollton, contributed a paper on

CHRONIC SORE LEGS AND HOW TO CURE THEM,

in which he said that chronic sore legs were the result of a disease that we often meet in our healing journey. In the remarks of his paper he excluded specific and malignant ulcers, and discussed a simply chronic ulcer that has refused to heal from all efforts of nature that have been brought to bear upon it. The author had been curing such ulcers by painting them with carbonate of lead and linseed oil, in the following proportion:

Pure white lead (ground in oil) ℥xv.
Raw linseed oil ℥vi.

Mix well and sign, paint the ulcer once or twice a day after washing it with warm water. Dry well before painting. The best thing to apply the remedy with is a camel's hair brush.

He was not able to tell how this application effects a cure; but carbonate of lead is sedative, astringent, and probably possesses disinfectant powers, all of which the author considers quite essential in the cure of these ulcers. The shortest time he has been able to accomplish a cure by this method was six days. The ulcer was two and one-half inches in diameter and of three years' standing, but had not penetrated the entire true skin.

SECOND DAY—MORNING SESSION.

Dr. H. Perdue, of Barnesville, read a paper on

DIAGNOSIS.

He said the ability to make an early and quick diagnosis should be sought and, if possible, attained by every physician. It enables one oftentimes to abort disease, and even when this can not be done the violence of the attack may often be modified, and its duration abridged. Thoroughness should be the aim of every physician. None should be satisfied with attainments short of the ability to make a diagnosis through scientific and practical methods of research.

Dr. Luther B. Grandy, of Atlanta, read a paper entitled "Suture of the Tendo Achilles," in which he reported a case and exhibited the patient. Similar cases were reported by Drs. Battey, of Rome, and Wm. O'Daniel, of Ballard.

Dr. J. B. S. Holmes then read a paper entitled

MAKING AND CLOSING THE INCISION IN ABDOMINAL SURGERY.

He said that many surgeons, in doing abdominal work, pay more attention to time than the details that are necessary to secure results that are free from sequelæ. This not only reflects seriously upon the surgeon, but leaves the patient in many instances a sufferer for life, requiring often a second operation to cure what might have been prevented. A smooth wound with no cicatricial tissue, no abscess scars and no ventral hernia, is a pleasing sight, not only to the surgeon but to the patient. He would not pretend to say that the sequelæ following abdominal operations can always be prevented, but certainly with proper care and attention to the technique of the operation, if not prevented entirely, they can be reduced to a minimum. The author then went into the details of closing the incision in abdominal operations.

Dr. F. W. McRae, of Atlanta, contributed a paper on

APPENDICITIS, WITH REPORT OF CASES.

The author presented some tentative conclusions and opinions culled from papers and discussions which had fallen under his notice within the last few months.

In the fulminant cases there was no question as to the proper treatment. Nothing but an early operation would save the patient; but in the milder cases there was much diversity of opinion as to how we should proceed. The author's personal experience was confined to six cases of well-defined appendicitis. He had seen several other cases where there were some indications of inflammatory trouble in the right iliac fossa, but no well-defined lesion. They all got well. Of the six cases one, a child of 2 years, died before he saw the case, after an illness of five days. From the history of the case and a careful examination of the body he had no doubt as to the diagnosis. Of the other five cases two passed through one attack, one through two attacks, and one through four attacks of well-marked appendicitis in his hands. In all, except one, he advised operation. All declined it. All except one are now in good health. The one who has had four attacks he thinks will require an operation later, as there is a well-defined persistent tumor in the right iliac fossa.

Dr. Samuel C. Benedict, of Athens, delivered the orator's address. He selected for his subject,

SUGGESTION AND ITS THERAPEUTIC USES.

By suggestion is meant simply an impression made from without, through one of the five senses, upon the cells of the cerebral cortex; it is a sensory impression by which either motor phenomena only are developed, or mental action such as revival of memory. In some instances a language used in childhood and long since forgotten, has been brought again into speech as clearly as though never lost. Auto-suggestion arises without external impressions and is typical in dreams or delirium. Now, as explanatory of such phenomena a working hypothesis has been formulated by Hudson which explains better than any previous theory the causes for such phenomena. His reasoning is that man has two minds, one of which he calls the objective, and one the subjective mind, and further, that the subjective mind, which is the store house of the memory and the seat of the emotions, is constantly amenable to control by suggestion, and is incapable of inductive reasoning.

Dr. P. R. Cortelyou, of Marietta, reported an interesting case of inflammation of external auditory canal following facial erysipelas in a woman, sixty-eight years of age.

Dr. Dunbar Roy of Atlanta, read a paper on

CHRONIC OTORRHEA, ITS SIGNIFICANCE AND TREATMENT.

This paper dealt with: 1, chronic discharges from the external auditory meatus; 2, polypi and foreign bodies; and 3, discharges originating from and dependent upon pathologic conditions of the middle ear or its contiguous cavities. With reference to the treatment, the author said that painstaking research into the history of every case; the correlation and comparison of all phenomena; a thorough knowledge of the normal and abnormal appearances of the parts, coupled with a sufficient amount of clinical experience were necessary for the treatment of all ear diseases.

Dr. J. H. Shorter, of Macon, read a paper entitled

TREATMENT OF CATARACT.

He said all operations for removal of cataract have been by one of three methods: Depression, decission, or extraction. These three methods were then described in detail and the indications for each method pointed out.

Dr. H. McHatton, of Macon, followed with a paper on

TEETHING.

No one denies that dentition is a physiologic process, *pari passu*. As the infant departs from its natural state, teething is increased in violence. The infant who is fortunate enough to have a mother who is physiologically perfect, and who treats her child as nature intended, does not teeth the first year, but is liable to, the second summer. The one who has to be partially fed, teeths oftener and earlier than the above mentioned. The one that is bottle-fed from the start, and exclusively, teeths as a rule, early, and in many cases fatally. The author knew that most practitioners would agree that dietetic errors are the cause of nearly all digestive disorders in the infant, and that these disorders are in the beginning and non-inflammatory stage most amenable to appropriate treatment, but by neglect they become the worst type of diseases that we have to contend with. The author then quoted from standard authors in regard to the subject of teething.

Dr. Richard Douglas of Nashville, addressed the Association by invitation on "Surgical Shock."

Dr. R. H. Taylor, of Griffin read a paper on

AN OPERATION FOR HEMORRHOIDS.

He describes the operation as follows: "After preparing the patient for operation in the usual way, fix the hemorrhoid with vulsellum forceps or a stout tenaculum, which is firmly held by an assistant. Instead of cutting a groove around the base of the pile for your ligature in the usual way, make an elliptical incision through the mucous membrane, including the hemorrhoid in the ellipsis. Turn back a small flap of mucous membrane from the base of the tumor. Now, have the assistant make firm traction on the pile while you pass a double ligature of stout chromicized catgut through the pedicle, which may be much reduced in size in some instances by separating it from the muscular coat of the bowel from below upward. Firmly secure the ligature and cut away the tumor as close to the ligature as possible, only leaving enough stump to safely prevent slipping of the

ligature. Then close the flaps over the ligated stump with a suture of the chromicized catgut. This leaves you with a closed wound which if aseptic will practically heal in four days.

DR. R. P. COX, of Rome, read a paper entitled

SACRIFICIAL SURGERY OF THE OVARIES, TUBES AND UTERUS FOR UTERINE FIBROIDS AND UTERINE CANCER.

In the treatment of uterine fibroids and uterine cancer, radical interference is often the best hope for the one and always the only hope for the other. The rather indefinite, though usually given, moral ground of justification for excision of the pelvic organs is to save life, to preserve from destruction a patient's usefulness or her capacity for the rational pursuit of happiness, or to relieve serious and permanent impairment of these natural rights. The author said that any medical man who advises or performs these radical operations on vague indications, without the ability to give an honest and reasonably intelligent opinion as to the necessity and probable results and, in doubtful cases, without the sanction of skilful and conscientious counsel, has failed in his duty and dishonored his profession. The author concludes that in nearly all cases supposed to be operable carcinoma uteri, we should try to exclude cancer by the microscope, but if this examination confirms the diagnosis of cancer, we should proceed at once to amputation, or in a certain sense, excision, by the galvano-cautery, and not by vaginal hysterectomy. Abdominal hysterectomy is indicated only in certain cases where the malignant disease is complicated by enlargement, such as by myoma or pregnancy.

Dr. W. B. GILMER of Macon, read a paper entitled "Drainage of the Peritoneal Cavity with the use of the Siphon Pump."

THIRD DAY—MORNING SESSION.

DR. R. M. HARBIN, of Calhoun, read a paper entitled

TREPHINING IN HEAD INJURY WITH PARALYSIS OF OPPOSITE ARM FOLLOWED BY FUNGUS CEREBRI,

and reported an interesting case which he considered a distinct indication for operative interference. The patient was 25 years of age, and in a fight was struck upon the head with the heavy end of a thirty ounce billiard cue, and was carried home in an unconscious condition in about two hours thereafter, having vomited a number of times. The patient was seen on the third day after the injury with the left arm completely paralyzed, sensation being normal. A diagnosis of compression of the brain was made, probably due to a blood clot. Trephining was done on the seventh day after the injury.

Dr. Harbin drew the following deductions from the case:

1. That this patient would almost certainly have died in the first instance had not the clot been removed.
2. That there was a positive indication for trephining.
3. That it furnished a striking example of the practical value of the applied rules of topographical anatomy of the brain.
4. That the prevention of fungus cerebri is more important than the cure, and is not to be looked for with proper precaution.
5. That the occurrence of fungus cerebri is very unusual in such a small trephine wound without injury to the dura mater.

DR. GEORGE H. NOBLE, of Atlanta, contributed a paper on "Phlegmasia Alba Dolens," and DR. J. M. HULL, of Augusta, one entitled "Foreign Bodies in the Larynx."

AFTERNOON SESSION.

DR. WALTER A. CROW, of Atlanta, read a paper entitled

CANCER OF THE UTERUS, THE REMOTE RESULT OF OPERATIVE INTERFERENCE,

in which he reported a series of cases that had come under his care recently, and which served to impress two facts: 1, the common occurrence of this disease especially in women approaching the menopause, and 2, the great disposition to overlook their true nature or probable tendency, and to incline to use palliative measures until the disease assumes a malignant form, and we thereby lose our golden opportunity of effecting a cure in most cases.

DR. H. W. STAFFORD, of New York, read a paper by invitation on

THE EXTRACTION OF CLEAR LENSES FOR MYOPIA,

and reported five interesting cases. Previous to describing the operations, he related the circumstances which led him to believe that the extraction of the lens, whether clear or not, would arrest the progress of myopia.

RESPONSIBILITY AND RELATION OF THE GENERAL PRACTITIONER TO GYNECOLOGY, PREVENTIVE AND NON-PREVENTIVE.

This was the title of a paper read by DR. R. R. KIME, of Atlanta, in which he said to properly prepare for special work in gynecology requires years of practical experience in general medicine and obstetrics. The most successful practitioner is one who seeks to know and eliminate as far as possible the cause of disease. In gynecological work it is not so often a question of eliminating the primal cause of disease as it is to correct the results of antecedent causes. To illustrate: Pyosalpinx is not a primal cause, but the result of a previous inflammation simple, infectious, or specific. Pelvis peritonitis in the female is not idiopathic, but the result of diseased conditions elsewhere.

Having cited some of the many instances in which the general practitioner may prevent disease and injury to the female and lessen gynecological work, the author then pointed out a few instances in which his duty is reversed, and for the sake of brevity presented them in the form of *Don'ts*.

DR. J. G. EARNEST, of Atlanta, reported a case of extra-uterine pregnancy in a woman, 32 years of age, the mother of three children.

DR. J. C. AVERY, of Atlanta, read a paper entitled the "Tampon in Gynecology," and DR. BERNARD WOLFE, of Atlanta, one entitled "A Plea for the Closer Recognition of Dermatology as a Specialty."

The following officers were elected:

President: Dr. Willis F. Westmoreland, of Atlanta.
First Vice-President: Dr. H. Taylor, of Griffin.
Second Vice-President: Dr. Wm. B. Tate, of Tate.
Treasurer: Dr. E. C. Goodrich, of Augusta.
Secretary: Dr. D. H. Howell, of Atlanta.

Dr. J. McFadden Gaston, of Atlanta, introduced the following resolution, which was unanimously adopted:

WHEREAS, The AMERICAN MEDICAL ASSOCIATION at its last meeting provided for an expression in regard to the Code of Ethics from the different State Associations, to be laid before the forthcoming meeting at San Francisco; it is hereby

Resolved, That the Medical Association of Georgia reasserts its adoption of, and conformity to, the Code of Ethics of the AMERICAN MEDICAL ASSOCIATION, as heretofore recognized by that body, and authorizes this record of its adherence to the same.

After drafting, introducing and adopting resolutions of thanks, the Association, on motion, adjourned to meet in Savannah on the third Wednesday in April, 1895.

NECROLOGY.

FREDERICK MOSSBACKER, M.D., of Saginaw, Mich., April 17, aged 54.——John Fisher, M.D., of Arcadia, Ohio, April 17.——Clark E. Chappell, M.D., of Canandaigua, Mich., April 12, aged 78.——T. M. Ebright, M.D., of Akron, Ohio, April 11.——Wm. A. Conway, M.D., of New York, April 17, aged 54.

MARY P. SAWTELLE, M.D., of San Francisco, aged 59, in New York city, April 22. She was a native of New York but moved to California and was the first woman to enter a medical college on the Pacific slope. In 1872 she originated the bill which gave women, married or single, residents of any Territory or of the State of Oregon, the right take up Government land.

CHARLES COREY, M.D., of Brooklyn, died at his home on the 4th ultimo in his sixty-fifth year. He was a pioneer specialist in that city, having adopted the rôle of a neurologist after a preliminary training in Bloomingdale Asylum and elsewhere. He was always a general practitioner but devoted to mental and nervous patients the greater part of his professional interest and work. He took up his residence in Brooklyn about thirty years ago, at a time when not more than one other physician of that city had embarked in specialism in mental diseases. He was early and largely employed in important cases, not a few of which became *causes célebres* in the criminal or civil courts. He was a clear-headed observer, and made a telling medico-legal witness. He was a man of scholarship and popular in the profession as a consultant. He was a graduate in medicine of Dartmouth College, in the class of 1856, in which he was classmate of Dr. Benning Crosby, who was also, for a time, a well-known resident of Brooklyn. The death of Dr. Corey was unexpected, occurring as it did after a brief attack of pneumonia, while the Doctor was yet in the prime of his professional activity.

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MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues and subscription for THE JOURNAL. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above subscription the weekly JOURNAL of the Association will be forwarded regularly.

All members of the Association should send their Annual Dues to the Treasurer, RICHARD J. DUNGLISON, M.D., Lock Box 1274, Philadelphia, Pa.

SATURDAY, MAY 5, 1894.

THE BRITISH SANITARY INSTITUTE AND THE AMERICAN PUBLIC HEALTH ASSOCIATION.

The Sanitary Institute of Great Britain has taken a new departure in deciding to publish a journal of its proceedings instead of an annual volume of Transactions, following in this the example set by the British and the AMERICAN MEDICAL ASSOCIATIONS. The journal is to be, in the first instance, a quarterly. Its first part, April, 1894, has just been issued. The object of this alteration is to circulate to the members at an early date the papers read at the various meetings of the Institute, to afford an opportunity for recording information of general sanitary interest and to keep the members more closely in touch with the work that is being carried on.

The Sanitary Institute is the analogue of our American Public Health Association. The one was originated in 1876, the other in 1870. Usually we follow our British cousins on the track of sanitary progress. In this instance we led. The objects of both institutions are identical—the advancement of sanitary science and the promotion of organizations and measures for the practical application of public hygiene. Our Public Health Association has been remarkably successful in certain lines of its work. State and local boards of health have been called into being by the impetus it gave to sanitary progress. It was successful even in effecting the establishment of a National Board of Health; and its influence is felt in the protection from exotic disease which we now have through the agency of the Marine-Hospital service. The meetings of the Association have been as a liberal education in sanitary science and practical sanitation to health officers and others in attendance; and much excellent committee work has been done, sometimes involving, as in STERNBERG's Committee on Disinfectants, a considerable amount of laboratory research. In its methods our Association followed those of the medical societies. So also the Institute in so far as it held ordinary meetings at its headquarters in London and annual meetings or congresses in various provincial towns "to bring together those interested in sanitary science, to read papers and discuss questions affecting the public health;" but the prominence which the Institute gave to its educational line of work led to a speedy divergence from the time-honored methods of the medical associations. To educate the public, special attention was given at the meetings to the arrangements for the exhibition of sanitary apparatus and appliances for which medals and certificates were awarded. During the sixteen years that exhibitions have been held, a uniform system of judging the exhibits has been organized, and in the Transactions for 1893 an illustrated and classified list of all those to which awards have been made since the incorporation of the Institute has been published.

It was proposed also to examine those persons who were desirous of official positions as inspectors and surveyors under the local sanitary authorities, and to issue certificates of qualification when merited. During the first year only eight candidates appeared. Progress was slow in this direction; but after a time the examinations became popular and the certificates of the Institute appreciated. In 1890 the examinations, which up to this time had been held in London only, were extended to the provinces to make them accessible to candidates living at a distance; and now, by legislative enactment, sanitary inspectors appointed after Jan. 1, 1895, must hold the Institute's certificate of qualification. During the past year 510 candidates were examined. Meanwhile the examinations revealed the fact that candidates for appointment as sanitary officers had great difficulty in obtaining knowledge of the principles of sanitation, whereupon the Institute established courses of instruction suitable for these officers; and the large attendance at the first course thus instituted showed how much this development of teaching work was appreciated. Other courses of popular lectures were also established with advantage, as on Domestic Hygiene, for the purpose of instructing ladies in matters relating to household sanitation and on the Sanitation of Industries and Occupations, for the purpose of giving information to those responsible for the management of factories and instructing those likely to become factory inspectors. One of the most interesting sanitary exhibits in the first issue of the *Journal of the Institute* is the list of the lectures delivered during the past year as part of the educational work accomplished. Among the list of lecturers we find many well-known names: A. WINTER BLYTH, SIR DOUGLAS GALTON, FRANCIS VACHER, W. H. CORFIELD, SIR CHARLES A. CAMERON, and others.

We commend this first issue of the *Journal of the Institute* to the consideration of the Executive Committee of the American Public Health Association, as showing how a voluntary organization educates and graduates the sanitary officers of a country having a central health board which might have been charged with this duty. We have no health board, nor have we any provision for the education of our inspectors. Our sanitary officers have to gather up their learning as they go along, and for the furtherance of all good sanitary work the columns of this JOURNAL are always open. *We favor the creation of a Department of Public Health!*

VARICELLA IN ADULT LIFE.

The occurrence of chickenpox in adults is so rare an occurrence, that there are many practitioners who have never seen a case of that nature beyond the age of puberty. The *Lancet*, of March 10, contains a reported case, contributed by DR. MALCOLM MARGAVE, together with some editorial comments. The case is given as follows:

"I recently attended a family in which three children had well-marked chickenpox infection conveyed by the mother, who had visited a friend whose child was convalescent from the same complaint. The mother, aged 31, had a slight rise of temperature, 100 degrees F., and vesicles appeared on the chest, back and abdomen, with a few on the face. Subsequently they came out in a succession of crops and quickly scabbed over. Beyond the slight rise of temperature and headache there were no other constitutional symptoms. My excuse for troubling you is that I read in FAGGE the following: Most writers say they have never seen it in grown up patients; but HEBERDEN relates one case in which a mother caught it from her children, and another instance of it in an adult female was observed by GREGORY. I should be glad to know if this is so."

The editor's remarks point to his belief that a single attack of varicella effects an almost complete exemption from a second attack. He says:

"Chickenpox is no doubt a rare disease in adults in this country, probably because children seldom escape attack by it. We know, however, of cases of the occurrence of this disease in a number of African coal trimmers in a homeward-bound vessel from India, who were infected by an English child suffering from chickenpox. This child, for the purpose of isolation from other children, had been placed in the surgeon's cabin overlooking the engine-room, through which these men passed."

We favor the creation of a Department of Public Health!

"BOY BANE"—OR THE CIGARETTE.

A member of the Board of Education of New York City, MR. CHARLES B. HUBBELL, has interested himself in the prevention of cigarette-smoking by schoolboys. He has inaugurated leagues, in the various schools, having an exclusive membership among those boys who are willing to take a pledge to abstain from the use of the deadly cigarette until they have attained the age of 21 years. He expects to have an enrollment of 75,000 young leaguers, on or before the first of May. This plan of organization has spread to other cities, and it will not be at all surprising if we hear later of a National League and witness an anti-cigarette Congress. MR. HUBBELL uses a variety of arguments to enlist the coöperation of ambitious and thoughtful youth. For example, he adduces the fact that the medical examiner of one of the larger life insurance companies said recently that he would not accept as a risk the life of an applicant who had steadily smoked cigarettes between the ages of 8 and 18. He also calls attention to the fact that professional men and shopkeepers will no longer take boys known to be cigarette-smokers into their employ, so immediately does the habit interfere with their usefulness. These facts are to the point, although no evidence is needed to convince intelligent people of the perniciousness of cigarette-smoking by boys.

We favor the creation of a Department of Public Health!

SAMPLES FROM THE "MEDICAL" ARCHIVES OF THE PENSION OFFICE.

A reporter of the Washington *Capital* has been permitted to look over some of the affidavits and reports of the Pension Bureau, and copies the following letter said to have been given by the "family physician" of one of the claimants for pension:

"In anser to yur inkiry i wos ekquanted with Martin White Before Went in armery and also his famerly physician. He was rase in a mile of me. He was sond when he went in the servise, he complain offen times, his fingers hand is drod crucked he cant do manly labor to a grate extent I was passen by where he was making rales last sumer two years ago i took notis he could not work as abel body he had to rest as long as he worked, he complains of his nerves been stiff I sene him every two months or so an cant do nothing to cure him. I give him almost every thing they is for stiff nerves, but they is still stiff. I don't think he can do nothing much. You have my examination of him in your office. P S You are given some two much pensions i no some by me that drod 8 per month which was a plenty now dros 12 talkin of laing in for increase I say they don't reserve it."

The certifier of the above is said to be a member of the local board of pension examiners. Inasmuch as no name is given it is not possible to confirm the statement.

A claimant is said to have made the following answer:

"My age is 70; I can not say precisely when and where I contracted senile debility. It has come on quite gradually. I seemed free from it at my birth; yet if I had been born so far back as I was, I am sure I would not be suffering with it so seriously as now. The most eminent authorities are agreed that old age is of a permanent character and I begin to feel certain that my chances of becoming younger are exceed-

ingly slim. In my case senile debility is not due to vicious habits; yet I have a habit of getting older each day. I have been infirm for the last ten years."

Among the affidavits of examiners are these:

"We find dulness in this man's heart and the general symptoms that the book of instructions calls for."

"In the center was also seen a large red mass as large as a small hen's egg, or rather a small egg, be the hen herself of dimensions stately or otherwise."

"I find a scar on this man's foot at the junction of the sole with the upper."

"Please give voice test for deafness." Answer of board:

"Claimant's voice not characteristic of deafness in this case."

"The claimant alleges loss of memory, but as we could not take it out and examine it we have nothing to say, only his statement, which we rate nil"

"Claimant can't read without glasses very much. He never could much. He never learned."

Office letter:

"The claimant above named is required to file his sworn statement showing when, where and how he contracted senile debility; the cause of disability not alleged in his declaration filed under act of June 27, 1890, and that such disability is not due to vicious habits, and is, to the best of his knowledge and belief of a permanent character."

It is quite possible that the various bureaus at Washington have some curiosities of composition, but we hope that there are none that reflect more seriously than the above upon the profession of medicine. The whole shows that the system of appointments of medical examiners for the pension service needs revision. It has always needed it.

TESTIMONY AS TO PROBABLE RESULTS.

The volume of personal injury litigation at the present time is something appalling. Almost every case, too, has to have its expert witnesses. This makes the rules stated by the Supreme Court of Missouri, in the case of BARR v. City of Kansas, decided March 5, 1894, of considerable interest and value. It says that the plaintiff, in these personal injury cases, may recover damages suffered up to the date of the verdict, and also such damages as will be suffered in the future; but no allowance for future damages should be made, except for such as it is reasonably certain will result from the original injury. Physicians may testify as to the probable result of personal injuries upon the health and life of the plaintiff. The question whether future damages will, with reasonable certainty, flow from the injury is, however, one for the jury. But it does not follow that the witnesses must be interrogated in language which would be proper and appropriate in an instruction. The object of the examination is to get the opinions of persons competent to express an opinion on the subject, and the different shades of opinion which the physicians may entertain, leaving it to the jury to say whether future damages are reasonably certain. To illustrate: Here there was evidence that the plaintiff received severe and permanent injuries to the spine and womb. In such a case, the court holds, the most that any physician can say as to the effect of the injuries on the life of the injured person, however expert or learned in his profession, is to give his opinion as to the probable consequences. An opinion being expressed, it becomes a proper subject for cross-examination, and in the end it is for the jury to determine the question as to the degree of certainty.

A TERRIBLE SANITARY MISTAKE.

The Washington correspondent of this JOURNAL telegraphed us in time for this edition as follows:

WASHINGTON, D. C., May 1, 1894.

"Coxey's army," 437 men and 30 horses, fatigued and improperly and scantily fed, without shelter, camping in enclosure 60,000 square feet, recently drained, containing five decomposing manure dumps, and abutting James Creek. Foul smelling, open sewers and many filthy gutters, no shade, temperature about 90 at 10 o'clock P.M. The health of "army" and city is threatened. Several cases of diarrhea are reported. The location is said to have been approved by district authorities after inspection.

We entirely disapprove of Mr. Coxey's misguided mission, but his deluded followers are human beings, and it would seem that with the noble hills all about Washington, some better place might have been found as a camping ground for these poor creatures than the most insalubrious spot in the District. The animals at the Rock Creek Zoo are better cared for.

CORRESPONDENCE.

Report on the Revision of the Code of Ethics.

DETROIT, MICH., April, 1894.

To the Editor:—Through the JOURNAL of the ASSOCIATION this report has been laid before the profession. Already it has been repudiated in several quarters. The cry is raised "Vote it down! Vote it down!"

From the language of Dr. N. S. Davis in the JOURNAL OF THE ASSOCIATION and the *Occidental Medical Journal;* of the "Conservative Member;" of Dr. Gould in the *Medical News*, the reader would infer that the authors of the proposed revision were denizens of the infernal regions and had made a special trip to the world for the purpose of working injury to the medical profession. Satire, invective, ridicule, suspicion, etc., are variously combined in these several communications, but in no one of them is a single reason given to support the belief that the adoption of the Committee's report would fail to benefit the profession.

It is interesting to inquire the occasion of such an ebullition. The report is a simple scientific statement of those lines of conduct which the Committee believed would best promote the harmonious activity of the entire medical profession. This statement differs from the one now in authority, mainly by giving greater liberty of action to the individual physician; only this and nothing more. The report shows that the Committee believed that with the changes incident to the last forty years, especially the better general and technical education prevailing among both profession and people, it would be wise to provide for an increase of the personal liberty accorded to the individual physician. In

its study of the subject the Committee apparently could find no reasons for longer withholding such liberty. Nor do any of the criticisms thus far published show that scientific medicine, the honor of the profession or of the AMERICAN MEDICAL ASSOCIATION would suffer any damage from the adoption of the report. The points of objection to the revision are: 1, the granting of increased liberty of professional association; 2, increased liberty in profiting by mechanical inventions; 3, an increased liberty of promoting professional acquaintance.

Concerning the first, the report says that doctors should choose their professional associates from among those who are well educated in all respects; who have a legal right to practice medicine in the place where they live and finally sustain a good reputation in their own community. The report ventures to suggest that any doctor should have the liberty to select from those having the above qualifications such as he pleases for his professional associates. It does not dictate whom he shall select from this group of educated, reputable law-obeying physicians but affords him the liberty of making his own choice. In this respect the report recognizes the right of each physician. We are fully aware that the granting of this right would probably not alter in any respect the practical action of most physicians, but it is natural to suppose that all would feel better to be trusted more fully in the selection of their associates. The report places the copyrighting of medical books and the patenting of mechanical appliances used in medicine and surgery upon the same basis. As authors now receive remuneration by the copyrighting of their books, so inventors are permitted to patent their inventions, if they are so disposed. In each case natural talent and industry are permitted to claim a suitable reward by availing themselves of legal protection. It is inconceivable that any medical gentleman would harm the profession by this liberty. At any rate the harm from patenting of inventions would be of the same character as that from the copyrighting of books. It is strange that such distinguished gentlemen as Dr. D., Dr. G. and Dr. G. 2d, who have made lots of money out of the profession by securing copyrights on the excellent books they have written, should kick against permitting the doctor who can not write a book, but is able to invent a valuable instrument, from trying to make some money by his special talent. We are unable to see that the Committee has made any mistake here, and we believe the change proposed would result in the acceleration of professional development along the best lines. If not, why not? Simple negation will not do. The profession wants the evidence on which to decide that the report is bad and should be rejected. Why should it not have the increase of liberty proposed?

Concerning the increase of liberty given by the report to physicians in making known to their professional brethren their special qualifications, physicians outside of hospitals, dispensaries and medical colleges are permitted to follow the example of those inside of these institutions. It simply puts the entire profession upon the same plane in advertising itself. Dr. D., Dr. G. and Dr. G. 2d are connected with medical institutions and so are advertised over the entire medical world by the reports, circulars, announcements, etc., of these institutions, as experts in genito-urinary diseases, general medical cases, or eye and ear diseases, and yet they object because John Jones, M.D., who can not get a place in medical college or hospital or dispensary, is permitted to tell his professional friends that he regards himself competent to treat diseases of the chest or spleen, etc. It is very natural that those who have the cream of advertising should want to prevent others from getting a little of the same. It seems to us that this additional liberty in matters of professional advertising will remove a feeling of envy and jealousy, that unbidden, sometimes steals over the mind of the humble practitioner as he sees the staring advertisements of the great hospital physician, or the college professor, heralded with pictures of the same persons, printed in the great dailies of the city in which the AMERICAN MEDICAL ASSOCIATION meets; when he reads the interviews of these distinguished gentlemen published in the daily papers; or the notices of big operations done by professors; in short, he will feel that as an humble individual in the profession, he will have the right to do exactly as his more fortunate and distinguished brother does on a larger scale.

The report gives every member exactly the same liberties in advertising himself. Naturally those who have exclusive privileges will cry, "vote it down!"

Is the AMERICAN MEDICAL ASSOCIATION prepared to "vote down" this cry for an increase of personal liberty on the part of the great mass of the thinking medical profession? If so, what are the reasons by which it will support its vote? It claims to desire the affiliation and coöperation of all fully educated, reputable, law-abiding physicians, and if so will it refuse to adopt the amendment to this end proposed by the Committee? It claims to treat all physicians with equal justice. If so, can it refuse to do that justice to the mechanical inventor which it has ever accorded to the writer of medical books? Or will it longer refuse to common doctors the rights of advertisement which it has granted to the college professor, the hospital or the dispensary physician?

The report is notable in that no mention is made of sectarian medicine or of its adherents. It takes for granted that the persons who may adopt this Code as expressing their ideas of professional conduct, are doctors, first, last and all the time. In this respect it fairly exhibits the best thought and feeling of our profession during all ages, as well as in the present. Those in the profession who believe in the largest personal liberty of the individual physician, in equal opportunities for all, in professional association with the learned, reputable and law-abiding, and in one profession unmarred by even the name of sect, in one National Medical Association commensurate in extent and breadth with the North American continent, will find on careful personal study of the report, abundant reasons for laboring to secure its adoption.

On the other hand, those who admit of no change in our knowledge of professional relations during the past two generations; those who are too indolent to think about the measures for uplifting the profession; those who follow the voice of another to whom they have committed their power to think about the AMERICAN MEDICAL ASSOCIATION; those who are dominated by interests mercantile which are furthered more by the existing than the proposed state of things; all these will oppose the adoption of the report. All these will join in "voting it down."

Certain we are that if the matter could be fairly brought to the candid thought of every physician in the land, the report would be adopted with a majority of at least seventy-five thousand.

LEARTUS CONNOR, M.D.

Code Revision.

SAN JOSE, CAL, April, 1894.

To the Editor:—It will be remembered that the writer hereof had something to say last year on the question of revision of the Code of Ethics, viz.: In the JOURNAL of April 22 and May 27, 1893. I then urged what I considered strong and cogent reasons why the Code should be revised, and have seen no reason to change that opinion since.

There had been, up to those dates, an individual writing over the signature of "A Conservative Member," who had occupied many columns in the JOURNAL for many months, to convince the profession of the beauties and perfections of our present Code. I have wondered what has befallen "Conservative" that he has kept silent in the face of the still threatening change in the dear old document. Is it barely possible that in the year of grace, 1894, he has the full courage of his convictions and now signs his real name? Be this as it may, the proposed amendments to the Code are now before us and several champions are in the field against any alteration.

There is no one who has a better right to speak on the Code question than Dr. N. S. Davis, of Chicago, whose re-

marks in opposition to revision or alteration in any particular, appear in the JOURNAL for April 14.

Dr. Davis is frequently called "the Father of the AMERICAN MEDICAL ASSOCIATION," and was present at the organization of that body, and more than likely he was a member of the committee who boiled down the original Percival Code of 20,000 words to 5,240 words. The Percival Code has been spoken of by some of the individuals discussing the question of revision, with as much reverence as would be shown almost any sacred writing on earth. I have never had the pleasure of reading this grand specimen of inspired composition, except in the form of the mutilated and concentrated extracts, known as the Code of our ASSOCIATION.

But if the 15,000 words that were expunged were of like tenor with a large portion of what has been preserved to us by the original Committee as our Code, then I am thankful that the Committee had the good judgment to boil the thing down and spare us of this generation the necessity of perusing the mass of meaningless verbiage. And if that original Committee had the right to set aside three-fourths of the original document, is it not possible, after the lapse of forty-seven years, that it may seem wise to expunge a little more of Father Percival's nonsense?

I have read the proposed new Code or revision, and according to my humble judgment it is superior in almost *every* particular to the original document.

It is much more brief, although in this particular there is opportunity for improvement. The new language wherever introduced is superior and more dignified than the language of the original. It does not bear so much the stamp of being addressed to fledglings. It has left out that entire article of ten sections addressed to the abyss of empty space, under the title, "Obligations of Patients to their Physicians." It has left out, as a rational committee should have done, the clause relating to the holding of patents by members of the profession.

I am happy to say that all these improvements are in exact accord with the arguments I made last year. I do not say that they have been made on account of those arguments, but it simply shows an agreement of thought on the subject.

The Committee has wisely recognized the existence of specialties in the profession and made some happy suggestions and regulations in that particular; all of which must be disagreeable to the champions of the old Code, as they want not one word added to or taken from the document. They seem not to conceive that new conditions have arisen since 1847.

But pardon me if I shall presume to reply more specifically to two or three of Dr. Davis' arguments. He complains that the Committee "has dropped whole sections here, and lines and words there, introduced new sections, and has placed their revised Code on a radically different basis." Certainly, that is the object of revision; to make some changes.

As regards the question as to whom one may consult with, I did not enter into it last year only incidentally, neither do I care to do so now, except by way of a general remark or two.

This feature of the old Code was adopted for the purpose of killing off homeopathy and other pathies and isms. In the face of history let us ask ourselves the question to what extent has that Section of the Code limited the growth of homeopathy since 1847? If it has limited, I am thankful.

There can be no consultation between a *genuine* homeopath and a regular physician so far as therapeutics is concerned, but only in regard to diagnosis and surgery. The writer has helped to kill off homeopathy by observing the law of the old Code for twenty-nine years in regard to consultations!

The next objection by Dr. Davis is in regard to the elimination of the entire article in relation to the "Obligations of Patients to their Physicians," and he sets up the new doctrine that this part of the Code is for the purpose of informing the *physician* as to the duties of patients toward him. I observe nothing in the ten sections devoted to this subject that is not addressed directly to patients. If it was written for the profession it makes the matter still more ridiculous.

Dr. Davis says: "It is no excuse for these omissions to say that the Code was not intended for the perusal of patients or the public, for it was really intended for both; and if physicians were more diligent in placing copies of the Code in the hands of their more intelligent patrons it would greatly benefit all parties." I wonder how many copies of the Code have been distributed to the public since its adoption! Forty-seven years ought to be time enough to get a start in that line. If not, the case is hopeless!

It is objected that the revision allows physicians, devoting attention to special departments of our art, the privilege of so stating on their sign or private card.

If memory serves me rightly it was when Dr. Davis was editor of the JOURNAL, he was pressed to answer the question: "How shall a specialist call attention to his business?" and the answer was that "he may state that his practice is limited to the treatment of certain diseases."

Where is the authority in the Code for Dr. Davis' statement and interpretation in this particular? There is not one word or suggestion authorizing it. It was a new law conceived by himself. Did not that forced interpretation indicate that something had changed since 1847?

But the new law given by the editor of the JOURNAL was so worded as to prevent general practitioners from using the expression, "Special attention devoted to certain diseases, etc."

Now what are the practical facts all over the United States? Specialists for years have called attention to their business in newspapers, private cards and signs; and further, every general practitioner states, whenever he feels like so doing, that he treats a special class of diseases. If only a simple statement is made it is considered honorable by probably every county society in the United States. Therefore that part of the revision which pretends to prohibit in this particular is a dead letter already and why have it there? Let every practitioner state, if he cares to, that he treats a special class of diseases.

I wish to call attention to one other point, and that refers to the question of patents: "Equally derogatory to professional character is it for a physician to hold a patent for a surgical instrument, etc."

Dr. Davis is so wedded to the old Code and so determined that not one syllable shall be changed, that his zeal leads him to contend for this, the most inconsistent of all the inconsistencies in the Code. Why should not the ingenuity of the surgical profession be stimulated by the hope of reward in patenting new inventions, the same as in any other department or industry? The great inconsistency manifests itself in the fact that all physicians use patented instruments and appliances. It is then perfectly honorable to use a patented instrument, but not honorable to hold a patent for an instrument! Therefore if a physician wishes to profit by an invention, all he has to do is to step out of the AMERICAN MEDICAL ASSOCIATION, patent his instrument, then exhibit it at the meetings of the ASSOCIATION and all the doctors will buy. "Consistency thou art a jewel!"

No man can fairly make an argument against a member of the AMERICAN MEDICAL ASSOCIATION holding a patent for an instrument, unless he can conscientiously stand up and say he would let his patient die before he would use a patented apparatus of any kind. Otherwise than this, it behooves every one in the interests of consistency to keep silent on the patent question.

It would be interesting if some champion of the Code would define the difference, so far as honor is concerned, between holding a patent for a surgical instrument or a copyright for a medical book. Is it not a distinction without any difference? All medical books are copyrighted. Why is the writer of a medical book any more entitled to remuneration for his time and talent than the inventor? Echo answers, why?

I beg to call attention to my two former articles on the subject of revision in the JOURNALS of April 22 and May 27, 1893.

In conclusion, allow me to say that I consider the revised or new Code superior in almost every particular to the old Code, and I hope with very little modification, if any, it will be adopted at the San Francisco meeting of the ASSOCIATION.

Most respectfully,

A. C. SIMONTON, M.D.

The Code Revision.—An Open Letter.

BOSTON, April 26, 1894.

To H. D. Holton, M. D., Chairman of the Majority Committee of the Revision of the Code of Medical Ethics:

Dear Sir:—Perhaps I have been remiss in my duty, as also in privilege, in permitting so long a period to elapse before replying to your thoughtful letter. However, I have felt that I would prefer to examine your work as completed before writing, knowing that it is not too late for your Committee to accept modifications which meet their approval.

It is so much easier to play the rôle of critic, than to formulate, that I would in advance thank you for your earnest efforts in the behalf of the profession.

If you will note that section of my address of two years ago which prompted the appointment of your Committee, you will see that I view the mission and scope of the AMERICAN MEDICAL ASSOCIATION from quite a different standpoint than that of the majority report of your Committee. First, that it should be a representative body of the whole profession, at present consisting of quite one hundred thousand in number, doubtless to be doubled in the next century. Each and every member of our profession should be so co-related to the ASSOCIATION, that he is an integral part of it, as for example, the voter in the most obscure town has the assurance that he is an active participant in the affairs of the commonwealth, with a no less just pride that he is a citizen of the general government, and may become a sharer in its highest honors and emoluments.

In the actuality of bodily presence, as a participant in the affairs of our great annual meetings, the number must be limited, and in the limitation of the number, it should be representative. This delegated power must necessarily mean something and that something must find its expression as a sharer in the governmental affairs of the ASSOCIATION. This is felt in the power to select their own officers and, under codified rules of action to govern their own affairs. The more important object, however, sought thereby should be clearly scientific improvement. To keep these dual objects equally in mind is not always easy. I have long felt that the possibilities of membership in the ASSOCIATION were sufficiently liberal. On the one hand, it should be considered an honor and a privilege worthy of attainment, while on the other, the restriction should not be so great as to exclude any earnest, ambitious professional man from becoming a member. In making active membership representative, this delegated authority from necessity acts for a more or less large constituency who are debarred the privileges of attendance and *who* shall be thus represented, your governmental rules must determine. Here lies your first fundamental difficulty, which I recognize as much as any member of your Committee.

Had we uniformity of State Examining Boards which would determine the status of a properly educated doctor, this work would be comparatively simple. A proper amount of scientific attainment would be our criterion. But hard as we all have labored to elevate the standard of medical education, I confess reluctantly to the feeling that, as yet we have not differentiated sufficiently to define readily the standard of our educated physician, and fear that, for the present at least, we shall have to fall back upon the unsatisfactory cognomen of the "regularly educated." Otherwise the political bias of the Examining Boards of the different States will give no end of practical difficulties, as instanced in your attempted answer to the query: "With whom may we properly consult?" States like Massachusetts which have no statutory limitations as to who may practice medicine, would fail entirely of qualification.

I have given my hearty approval to the efforts inaugurated under the leadership of Dr. Connor, of Detroit, for the improvement of the Section work. In these subdivisions, it is easy to find place for the proper presentation of original research, and the thoughtful consideration of every contribution for the advance of the science and art of our profession, and these subdivisions must be the great corner-stones upon which to erect the temple of medical science. However, as viewed independently, they lack cohesion, and our great National meetings, to reach a higher plane of success, must have something in common for all. To this end, fortunately our science blends in the discussions of public questions, upon which great masters are ever ready to consider it a high honor to address the entire assembly. For this reason it seems to me that beside the oration of the President, the annual addresses are of importance.

Will it not be well that we content ourselves in the present limitations ascribed to our Business Committee for the better scientific development of the Sectional work, and grant to the active members present that privilege, so dear to the American citizen, of exercising his delegated power in the choice of officers? This indeed may be stigmatized as political, nevertheless it enters into the very existence and makeup of the American boy before he differentiates into a doctor. Experience proves that no matter how select the committee, this quality does not depart from the members of the organization. Your Business Committee could hardly expect to be devoid of this attribute and with a certain show of justice might be criticised as "a close corporation, political ring, etc."

May we not, at least for the present, be content with your definition for the requirements of the graduate of medicine that he be carefully and thoroughly trained before he can be considered a general practitioner, and "that specialists must be this and something more?" Has not our ASSOCIATION long since recognized the special subdivisions of practice as "proper and legitimate" fields of labor, and that specialists shall be governed by the same rules of etiquette as has been laid down by general practitioners? Is not this quite sufficient?

There are many minor subjects upon which I can well understand there will be, and I think ought to be, differences of opinion. Under this head in our present Code comes a long chapter on the duties of patients to physicians. I am often asked in what does the obligation consist? Certainly the relation in many ways is a mutual one, and how can the physician give instruction, unless he is himself taught, or governed by certain rules of action!

As to the question of patenting of instruments, many justly claim hardship and loss by being denied this privilege, while others assert that the honor attached to the presentation of some new device should be ample compensation. If this be true, it is certainly aggravating, as has happened several times to me, that some other man with more effrontery than honesty, claims, and is accredited with the honor. In the patenting of medicines, the field where modern chemistry is doing so much for our profession, this question is still open to discussion. However, I can not help thinking that the subject of patents is such a prominent source of abuse and a covert means of swindling, that the individual better suffer personal loss than risk the injury that may accrue to the general public.

To me it has always been a matter of surprise that so much acrimony of feeling should be aroused in the discussion of codes and by-laws, but this pertains alike to all societies. Upon fundamental principles all should be agreed, in the matter of detail much latitude of action must be permitted. This is necessary when honest and able men disagree and will occur when designing men of doubtful honor would take advantage. When President of the ASSOCIATION I made an earnest effort to reconcile the differences between

the great wings of the New York State medical profession. It seemed to me that the resolution which was unanimously adopted by the Association in 1885 as a conciliatory measure to meet the objections raised by the New York State Medical Society was ample:

"*Resolved*, That Clause 1, Article IV in the national Code of Ethics is not to be interpreted as excluding from professional fellowship on the ground of differences of doctrine or belief, those who in other respects are entitled to be members of the regular medical profession. Neither is there any article or clause in the said Code of Ethics that interferes with the exercise of the most perfect liberty of individual opinions or practice."

Reluctantly I was forced to believe that the time was not yet ripe for the harmonious adjustment of difficulties which pertained far less to the assumed faults of the Code, than to bitter dissensions on the part of individual members.

It was with this thought, without consultation with any, that I selected your honorable committee and imposed upon them the serious task of the consideration of the revision of the Code of Ethics. The gentlemen composing the committee were all known to me personally as men distinguished, not only for their learning and ability, but judging from their previous labors in the advancement of medical science, I deemed the Association peculiarly fortunate in being able to secure their services. It was a surprise to many that the first year of your efforts should be confined to a revision of the Constitution and By-laws, when you were appointed to consider only the revision of the Code of Ethics, doubtless, however, with the thought of securing an harmonic whole. To very many your revision seems extreme and I would suggest a marked modification somewhat as here outlined, preserving all there is of value in our really very excellent old Code, modifying only along the lines of advancing science, since if compelled to choose between the old and the new, as you have formulated it, I must support the former, an opinion which I can not doubt the large majority of our members will give approval. Henry O. Marcy.

On Revision of the Code.

New York, April 24, 1894.

To the Editor:—The venerable father of the Association in the issue of April 4, 1894, in his disapproval of the revision of the Code of Ethics asks the question: "In what direction this progress?—that of science and honor, or that of mammon and dishonor?" Now, as he has asked, it is discourteous not to reply. Also, this is the time for members to speak out their sentiments, as a matter of history and material for action. Dr. Davis says the Committee has *emasculated* the section on patents and proprietary medicines, making it prohibit only patents "for secret nostrums" (*i.e.*, ours, from *nos*—we); "a medicine the ingredients of which are kept secret to restrict profits to proprietor or inventor."—Webster; in other words, for "mammon and dishonor."

I have no doubt that the majority of the members have used antipyrin, phenacetin and sulfonal, out of which the German owners have reaped millions of dollars; yet they are practically secret nostrums patented, and I doubt if they can be made from the formulæ.

The ethics of these chemicals say that Association members can swallow their Code for Germans and not for Americans; this is free trade with a vengeance. There is a good deal of progress towards "mammon and dishonor" in the above use of such chemicals.

Further, the old Code shows the profession in a bad, if not dishonorable condition for themselves as book-makers. The father of the Association has copyrighted his books; *i.e.*, his medical ideas in paper and ink; it is the same as a patent or proprietary nostrum (ours). Now, suppose he had produced ideas in hard rubber, metal, wood or even paper without ink; to patent such would be considered mammon and dishonorable, but protection for paper and ink is honor.

In eternal common sense and fact, medical ideas, whether printed or not, are entitled to protection or no protection alike.

I know a medical man who got up medical ideas in hard and soft rubber, linen, iron and silk; these ideas he freely gave away to the profession; in England they were said to be the best for 6,000 years; English medical students could not graduate unless they knew about them. One day, when he thought he had thus done well he was much taken down by an American Medical Association member, one of the most eminent in the world in the line of such ideas, by the query: "Did you make any money by those ideas?" "No," was the reply. "You ought to have made $100,000. Why did you not get them patented? How foolish!!!!" Not much honor, then, in giving the world those ideas, according to one of the very supporters of that Code that prohibited patents! Tell a member he shall not patent his ideas, and then blow him up because he did not and followed the Code! Is this honorable, consistent with truth, morality, the Ten Commandments, the Golden Rule? How does the Code of Ethics work as to nostrum (ours—proprietary) advertisements in the Journal? Take I——— G———, advertised by the Journal, notwithstanding that the Connecticut State Agricultural Experiment Station after examination reported that it was common flour heated, bought at from 2½ cents to 5 cents and sold at $1 per pound. Is it science to call common flour an extract made by chemistry when it is a powder chemically made? And the "greatest food for invalids?" Is this science and honor? And yet the old Code believers allow this, and the Association makes money publishing untruths.

If a member should advertise a proprietary medicine in the Journal or elsewhere, he would be subject to discipline. An outsider has greater privileges. I approve of the Committee's report as to this section also because it is a dead letter. Members are getting patents in spite of the Code, as they get copyrights. There is often more science in instruments than in books. The instrument represents new ideas; medical books are too often made by threshing out old straw and somebody's ideas because they sell best.

Another consideration: The late Dr. Louis Elsberg, a member, invented after years of study an admirable forceps for topical applications to the larynx, throat, posterior nares and nares. It took much study and time to get the right angle, 120 degrees, for the bend. It went on the market unprotected. The makers, who generally think they know more than the inventor (try it, if you do not think so), changed the angle variously—so that the forceps were a failure; I well remember how badly Dr. Elsberg felt when he knew that his instrument did not do the good it was capable of and thus relieve suffering, simply because he did not protect it from changes. I have known of like cases with other medical men; one gentleman of great eminence in his specialty in surgery has the pleasure of knowing the Government has ordered thousands of dollars worth of his instruments on which he has no protection, and hence no profit. Would it not have been better for this man, as well as others, to have made some money out of his brain children and thus conserved energy and perhaps brought forth more ideas of value? So long as our present system of economics is based on every man inheriting or earning money for his support, so long should his property be protected. We seem to forget that the competition will break down unjust monopolies and that only valuable things will stand. The greatness of our country has been made possible by inventions; the science of medicine would be nowhere but for patented inventions in locomotion, manufactures

and arts. They have made it possible to hold our annual meetings, and even in San Francisco. I deliberately say that the old Code, as to the ethics of medical ideas outside of books, is a poor arrangement; when any new ideas (save as above) come, we are to close ourselves up like the box turtle and let them blow over us—we are not to encourage inventions that will benefit humanity (Elsberg's forceps)—we are to wait until public opinion comes and kicks open our shell; and yet we can use antipyrin *et id omne genus*, swallowing our Code and all; we can blow up inventors for not patenting medical ideas when we have told them not to; we can as a medical association, advertise nostrums by the dozen to the world in the very number of the JOURNAL in which good Father Davis asks the question I am trying to answer. Is not this "mammon and dishonor?" For one, I am grateful to the Committee for what they have done so fearlessly and deftly; I admire our venerable father's energy, point and force, and what I have written here is simply on my own responsibility, declarative of my ideas in answer to the question frankly, plainly and honestly. I wish others would speak out their sentiments, pro or con, and then this vexatious matter could be settled and the ASSOCIATION attend to work of which there is dying need and members are dying in need of, to-wit: The "new gospel of Materia Alimentaria."—(Joseph Jones, M.D., LL.D., New Orleans.)

I look forward to the time when any person qualified to practice medicine, and who calls himself simply a physician and surgeon with no sectarian title, can walk into the AMERICAN MEDICAL ASSOCIATION to full-hearted membership and "not to doubtful disputations," and the Code will consist of the law of the eternal fitness of things which needs not man's arbitrary measurements, but does things rightly because complemented by the law of compensation, the executive of Justice.

E. CUTTER, M.D.

Medical Institutions of San Francisco.

SAN FRANCISCO, April 26, 1894.

To the Editor:—The AMERICAN MEDICAL ASSOCIATION will meet in San Francisco June 5 to 8. During the meeting the members will be cordially invited to visit the following institutions:

City and County Hospital, Potrero Avenue and 22d Street, contains 450 beds. Superintendent, F. H. Titus; visiting surgeons, R. A. McLean, C. N. Ellinwood and G. F. Shiels; visiting physicians, W. W. Kerr and J. O. Hirschfelder; oculists and aurists, W. E. Hopkins and Geo. Merritt; visiting gynecologists, H. Kreutzmann and C. A. von Hoffmann.

St. Mary's Hospital, First and Bryant Streets, is conducted by the Sisters of Mercy. Visiting surgeon, A. T. Leonard; gynecologist, Luke Robinson; physicians, W. S. Thorne and M. J. Fottrell; oculists, G. H. Powers and W. E. Hopkins.

German Hospital, 14th and Noe Streets, contains 200 beds. Visiting surgeon, J. F. Morse; ophthalmologist, A. Barkan; gynecologist, H. Kreutzmann; physician, Rudolph Baum.

French Hospital, Bryant Street near Sixth. Visiting surgeon, Dr. Bazan; physicians, J. D. de Chantreau and G. Gross; oculist, K. Pischl.

St. Luke's Hospital, Valencia Street near 27th, contains 75 beds. Visiting surgeon, C. G. Kenyon; physicians, Washington Dodge, F. W. D'Evelyn and C. J. Burnham; oculists, G. H. Powers and A. H. Voorhies; gynecologist, W. H. Mays.

Children's Hospital, 3700 California Street, contains 100 beds including the Maternity. Visiting physicians, Lucy M. F. Wanzer, Emma S. Merritt, Edna R. Field, Mrs. C. B. Brown, Charles von Hoffmann, A. P. Woodward; oculist and aurist, W. E. Hopkins; orthopedic surgeon, Harry M. Sherman.

California Woman's Hospital, 3118 Sacramento Street, contains 50 beds. Visiting surgeons, C. B. Brigham, O. O. Burgess, W. Winterberg, C. Max Richter, Dudley Tait, L. L. Dorr; surgeon in charge, F. W. Vowinckel.

United States Marine-Hospital is situated in the Presidio Reservation on the banks of Mountain Lake, and is accessible by the Sacramento Street cars.

Another hospital is on the eve of completion, viz.: Lane Hospital, which will contain over one hundred beds; this has been erected by the writer at a cost of $150,000 and has been presented by him to Cooper Medical College, thus giving this institution unsurpassed facilities for the work of medical education.

This pile of buildings, which is in conspicuous view to the traveler who enters the Golden Gate, together with the lands accompanying the gift, equals in value a half million of dollars, and has been presented as an offering to the Healing Art in its merciful service to suffering humanity.

The members of the ASSOCIATION will also have an opportunity of visiting the medical college erected and presented to the University of California by the late Dr. H. H. Toland. Some of the members will remember their visit to this institution during their sojourn here, twenty years ago, when they were given a reception there by the distinguished founder. The heart of Dr. Toland would have beat less exultantly on that occasion could he have foreseen that in less than twenty years there would be a movement on foot to sell and abandon the edifice which he had planned as an enduring monument to the name of Toland. And should history repeat itself, and the unpitying hand of ingratitude pull down the monument which otherwise will perpetuate the names of Lane and Cooper, then would the scene in heaven as painted by a modern Greek poet be realized, viz.: Benefaction and Gratitude as strangers did not recognize each other in Heaven, since they had never met on earth.

L. C. LANE, M.D.

ASSOCIATION NEWS.

The Association Train will leave Chicago Monday, May 28, via Santa Fe R. R., Rio Grande Western, and Southern Pacific, for San Francisco via Denver, Colorado Springs, Leadville, Manitou, Glenwood Springs, Salt Lake, Ogden, Truckee and Sacramento. Returning, after the meeting, the train will pass through Sacramento and Northern California to Portland, thence east by way of the Northern Pacific R. R. to St. Paul. C. M. & St. P. R. St. Paul to Chicago. A stop over at Yellowstone National Park for those who desire it has been arranged, and it has been understood that at several places on the journey there will be short stops. President Hibberd's party in a special car join the train at Chicago, and the St. Louis party are expected to join at Kansas City. From all points east and south, concentrating on this train should be effected at Chicago and St. Louis. For all information relating to this train, fares, etc., address J. M. Connell, 212 Clark st., Chicago, or any agent of Santa Fe line in other cities. Rates promised are the lowest excursion rates at time of departure.

This is the only route on which arrangements have been perfected by the Trustees.

Circular from Committee of Arrangements.—The AMERICAN MEDICAL ASSOCIATION will meet in San Francisco, June 5, 1894.

The trancontinental railroads have made favorable rates, viz: $65.50 for round trip from all Missouri River points, which is one and one-twelfth fare. The Southern Pacific Company's rates from Portland, Ogden and El Paso are one fare.

All tickets sold at these points carry five coupons of admittance to the Mid-Winter Fair.

The roads beyond Missouri River points are still charging about one and a half fares.

Can not our brethren east of the Rocky Mountains yet induce the Central Traffic Associations and Trunk Lines to equalize these rates? Several agents in response to our circulars asking for a single fare, replied favorably, but stated that it required united action of the several Associations. An extensive itinerary for those who come from the Northern and Middle States is published in the JOURNAL OF THE ASSOCIATION. In the April number of the *Occidental Medical Times* Dr. Parkinson has published an extensive itinerary of excursions and entertainments in this State for members and their families during and after the meeting. Those who come from the Southern States will probably come over the Santa Fé and Sunset routes. It will be well for them to come early and "do" the southern part of the State on the way up, and then depart via the Ogden or Shasta route. This will afford the greatest possible opportunity to note the varied resources of the Pacific Coast, and the variety of scenery and climates within our borders. The Colorado Desert through which the road passes, is 312 feet below the sea-level, with a dry hot atmosphere.

Going out over the Denver & Rio Grande, one reaches an altitude of 10,500 feet; while on the Shasta route the road passes Castle Crag Tavern, winding around the base of Mount Shasta, whose summit is 14,444 feet high and clad in eternal snows.

Colton and Riverside, the first important points reached on the Sunset route, are already far-famed for their delicious fruits and extensive orange groves which line the streets and highways for many miles.

Drs. M. F. Price and K. D. Shugart of the local committee on reception will take delight in showing them to visitors.

From here to San Diego and Coronado it is only four hours' ride. They are located upon the bay in the extreme southwestern part of the State only four miles from the Mexican border. This is now a fashionable all-the-year-round resort with one of the largest and best equipped hotels in the world, its main dining room having a capacity for a thousand guests.

Facilities for bathing and boating in the sheltered waters of the bay are unexcelled. Drs. C. M. Fenn, W. A. Edwards and C. C. Valle, of the local committee will extend every courtesy to visiting members.

Los Angeles, the chief city in the south, too well-known to need any description here, is only five hours distant on the way north. Here Drs. H. Bert Ellis, H. S. Orme, Walter Lindley, Jos. Kurtz, J. P. Widney and W. L. Wells, of the committee on reception will be delighted to show visitors the city and its suburbs, Pasadena, Santa Monica and other points of interest.

Santa Barbara, another charming resort by the sea, famous for its adjacent olive groves in which it rivals Palestine, is only three hours' ride from Los Angeles. Here Drs. S. B. P. Knox, J. M. McNulty and R. J. Hall, of the local committee will do the honors of the occasion.

Leaving Santa Barbara by rail, the next point of interest will be Bakersfield where an extensive system of irrigation has transformed a desert into a veritable garden of Eden.

Then comes Fresno, the largest and most successful vineyard district in the State, where Drs. Chester Rowell and A. J. Pedlar, of the local committee will pay every attention to visitors.

It is only seven hours' ride from here to San Francisco, where the members of the reception committee will meet the visitors and escort them to their respective hotels. Those who come in over the northern routes, via Mount Shasta, Castle Crags Tavern, Soda Springs, Chico and the State capital at Sacramento, may desire to depart by the Santa Fé or Sunset routes. R. H. PLUMMER, Chairman.

San Francisco, April 25, 1894.

Program for Section on Laryngology and Otology.—"Electro-Vibratory Reduction of Turbinated Tissue," Dr. J. Mount Bleyer, New York City.

"Tubage as Accessory Treatment in Cases of Septal Deformity," Dr. Price Brown, Toronto, Canada.

"Diseases of the Accessory Cavities," Dr. Frederick C. Cobb, Boston, Mass.

"Epithelioma of the Larynx with a Case," Dr. Cheatham, Louisville, Ky.

"The Causative relation of Nasal Obstruction to Lung Disease, with New Mechanical Devices for Treatment," Dr. O. Denison, Denver, Col.

"The Dangers of the Use of Cocain in Treatment of Diseases of the Upper-Air Passages," Dr. D. B. Delavan, New York City.

"The Removal of Exostosis and Deflections of the Nasal Septum," Dr. A. De Vilbiss, Toledo, Ohio.

"Pseudo-hysterical Aphonia," also "A Case of Retention Cyst of the Frontal Sinus," Dr. F. B. Eaton, Portland, Ore.

"The Treatment of Hypertrophy of the Tonsils in Young Children," Dr. George Z. Goodell, Salem, Mass.

"Hypertrophy of Luschka's Tonsil—Etiology and Clinical History Based on an Analysis of Two Hundred Private Cases," Dr. E. Fletcher Ingals, Chicago, Ill.

"Cigarettes," Dr. J. C. Mulhall, St. Louis, Mo.

"The Relation between Nasal, Laryngeal and Thoracic Disease," Dr. S. E. Solly, Colorado Springs, Col.

"Deflection of the Nasal Septum and its Surgical Treatment," Dr. E. A. Spilsbury, Toronto, Canada.

"Report of Cases. *a*—Intra-nasal Fibroid Tumors. *b*—Total Adherent Soft Palate. *c*—Septal Abscesses," Dr. J. E. Schadle, St. Paul, Minn.

"Laryngeal Tubercle Cured by Tuberculin," Dr. A. J. Erwin, Mansfield, Ohio.

"Carcinoma Laryngis; with Report of Case of Total Extirpation," Dr. Norval H. Pierce, Chicago, Ill.

"Hygienic Cures of Laryngeal Diseases," Dr. Marion Thrasher, San Francisco, Cal.

"Relation of Diseases of Upper Air Passages to Diseases of Eye and other Organs," Dr. J. G. Carpenter, Stanford, Ky.

"The Treatment of Hay Fever," Dr. A. C. Wolfe, Columbus, Ohio.

"How and Where to Drain the Antrum in Empyema," Dr. Eugene S. Talbot, Chicago, Ill.

"Diphtheria, Its Etiology, Clinical Pathology and Treatment," Dr. Marcus M. Johnson, Hartford, Conn.

"Abuse of the Galvano-Cautery in Rhinology," Dr. W. H. Daly, Pittsburg, Pa.

"Laryngeal Lupus," Dr. J. D. Arnold, San Francisco, Cal.

"The Value of Antroscopy (Endoscopy of the Antrum of Highmore)," Dr. Henry L. Wagner, San Francisco, Cal.

"Report of a Case of Laryngeal Neoplasm Simulating the Everted Nostril," Dr. S. K. Merrick, Baltimore, Md.

"Syphilis of the Upper Air Passages," Dr. Ramon Guiteras, New York City.

"The Easiest Adenoid Operation with New Instruments," Dr. Arthur G. Hobbs, Atlanta, Ga.

"Pseudo-Membranous Laryngitis," Dr. Wm. H. Parke, New York.

"Retro-Pharyngeal Lymphad Enetis," Dr. W. E. Casselberry, Chicago, Ill.

"Intra-Laryngeal Growths," Dr. J. E. Sinclair, Nashville, Tenn.

"Naso-Pharyngeal Tumors," Dr. R. P. Lincoln, New York City.

"The Middle Turbinated Bone," Dr. Arthur Levy, Denver, Col.

"Fibro-lipoma of Pharynx—Report of Case," Dr. John O. Roe, Rochester, N. Y.

"Surgical Treatment of Chronic Otorrhea and of Chronic Catarrhal Otitis Media," Dr. C. H. Burnett, Philadelphia, Pa.

"Internal Massage and Vapors in the Treatment of Chronic Aural Catarrh," Dr. H. V. Würdemann, Milwaukee, Wis.

"Some Experimental Research in Electro-Mechanical Contrivances for Relief of Middle-Ear Deafness," Dr. Geo. Wilkinson, Omaha, Neb.

"The Eustachian Openings in the Pharynx," Dr. E. Cutter, New York.

"Demonstration of New Instruments," Dr. S. S. Bishop, Chicago, Ill.

"Experiments on the Eustachian Tube by means of the Tongue thrust into the Naso-Pharynx, Dr. H. Stillman," Seattle, Wash.

The following have promised to send papers but have not given titles:

Dr. C. H. Guibor, Topeka, Kan.; Dr. E. Shurley, Detroit, Mich.

E. FLETCHER INGALS, M.D., President, Chicago,
JOHN F. FULTON, M.D., Secretary, St. Paul.

SOCIETY NEWS.

Central Illinois District Medical Society.—The following resolutions were adopted at the meeting of the District Medical Society of Central Illinois, held at Pana, April 22. 1894, relative to the prevention of blindness:

WHEREAS, Laws have been enacted by the Legislatures of

several States relative to the prevention of blindness due to ophthalmia neonatorum; and

WHEREAS, Efforts are being made by the Illinois State Board of Charities to influence the passage of a similar law by the Illinois State Legislature of 1894–5; be it

Resolved, That the District Medical Society of Central Illinois convened at Pana, April 22, 1894, hereby indorses and commends the efforts being made by the Illinois State Board of Charities to secure appropriate legislation relative to the prevention of blindness due to ophthalmia of the newborn.

DR. RAUCH.—In memory of the late Dr. J. H. Rauch, be it

Resolved, That the District Medical Society of Central Illinois hereby expresses its appreciation of his inestimable services which have raised the standard of medical education, the influence of which is felt in every State in our Union; of his unceasing zeal in the suppression of quackery in our own State, and of his persistent energy and superior knowledge, the influence of which has secured for him deserved distinction among the eminent sanitarians of the nineteenth century.

Resolved, That this Society expresses a deep regret that the death of him who is to be regarded a benefactor to the medical profession has robbed us of a friend and co-laborer.

Resolved, That the Secretary be instructed to inscribe these resolutions in the minutes, and send a copy of the same to the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

W. J. EDDY, M.D., President.
J. N. NELMS, M.D., Secretary.

The American Pediatric Society will hold its sixth annual meeting at Washington, D. C., May 29, 30 and 31, and June 1, 1894. The sessions will be held at the Arlington. The following is the preliminary program:

Address by the First Vice-President, "A Eulogy on Drs. John M. Keating and Charles Warrington Earle," by F. Forchheimer, M.D., Cincinnati, Ohio.

"Eulogy on Dr. T. F. Sherman," by T. M. Rotch, M.D., Boston, Mass.

"The Influence of Blood-Supply on the Irritability of the Spinal Motor Centers," by B. K. Rachford, M.D., Newport, Ky.

"The Early Diagnosis of Potts' Disease of the Spine in Children," by Dillon Brown, M.D., New York City.

"A Case," by William B. Northrup, M.D., New York City.

"Tonsillotomy, followed by Diphtheria and 'Croup,'" by Augustus Caillé, M.D., New York City.

"Discussion on the Etiology and Prevention of Rickets; *a*, influence of race (especially in Italians), Irving M. Snow, M.D., Buffalo, N. Y.; *b*, influence of race (in Negroes)," by George N. Acker, M.D., Washington, D. C.

"A Case of Congenital Rickets," by C. W. Townsend, M.D., Boston, Mass.

"Infantile Scurvy, especially its Differential Diagnosis," by J. Henry Fruitnight, M.D., New York City.

"An Aid to the Sterilization of Milk in Artificial Infant Feeding," by A. Seibert, M.D., New York City.

Report of the Committee on the Nomenclature of Diseases of the Gastro-Enteric Tract, T. M. Rotch, M.D., Chairman, Boston, Mass.

Report of the Committee on the Nomenclature of Diseases of the Mouth.

Business Meeting (for members only).

"Acute Pyelitis in Infancy," by L. Emmett Holt, M.D., New York City.

"Infantile Myxœdema," by William P. Northrup, M.D., New York City.

"The Hemorrhagic Disease of the Newborn," by C. W. Townsend, M.D., Boston, Mass.

SAMUEL S. ADAMS, M.D., Secretary.

American Dermatological Association.—Program of the eighteenth annual meeting to be held at the Arlington Hotel, Washington, D. C., May 29, 30, 31 and June 1, 1894.

Officers for 1894: President, Dr. R. B. Morison, of Baltimore; Vice-President, Dr. G. T. Jackson, of New York; Secretary and Treasurer, Dr. C. W. Allen, of New York.

The meetings will be held in the new reception room of the hotel.

Tuesday, May 29, Business Meeting (with closed doors) at 9:30 A.M.; Report of Council; Nomination of officers for the ensuing year; Appointment of Auditing Committee; Proposals for Active and Honorary membership; Miscellaneous business.

Address by the President, Dr. R. B. Morison; Dr. G. T. Jackson, "Thyroid Feeding in Diseases of the Skin;" Dr. G. H. Fox, "The Rare Forms of Alopecia;" Drs. J. A. Cantrell and E. J. Stout, "A Case of Favus of the Head and Body."

Wednesday, Business Meeting (with closed doors) 9:30 A.M.; Report of Treasurer and Auditing Committee; Election of officers; Election of Active and Honorary members; Selection of time and place of next meeting; Miscellaneous business.

Report of Committee on Statistics; Dr. J. A. Fordyce, "The Pathological Anatomy of Pearly Epithelioma of the Face;" Dr. H. W. Stellwagon, "The Question of Contagiousness of Molluscum Contagiosum;" Dr. C. W. Cutler, "The Therapeutic Value of Urea in the treatment of Skin Diseases;" Dr. S. Sherwell, "Ichthyosis Congenita (so-called Harlequin Fetus). History of a case still living."

A general session of the Congress will be held Wednesday afternoon at corner 12th and F Streets to discuss "The Distribution and Control of Leprosy in North America."

First Paper, "Distribution," Dr. J. N. Hyde. Discussion, J. E. Graham.

Second Paper, "Diagnostic Features and Treatment," Dr. P. A. Morrow. Discussion, Dr. A. Van Harlingen.

Third Paper, "Contagiousness, Prophylaxis and Control," Dr. J. C. White. Discussion, Drs. G. H. Fox, J. D. Bryant and Gen'l W. C. Wyman, U. S. M. H.

Thursday, 9:30 A.M., Dr. J. C. White, "Angioma Serpiginosum and some other Dermatoses;" Dr. M. B. Hartzell, "The Protozoa-like bodies of Herpes Zoster; a contribution to the study of Psorospermosis;" Dr. W. T. Corlett, "Cold as an Etiological Factor in Diseases of the Skin, with Report of Cases;" Dr. C. W. Allen, "Acquired Idiosyncrasy for Quinin, showing peculiar Cutaneous Manifestations."

Friday, 9:30 A.M. Open discussion upon "Dermatitis Exfoliativa;" *a*, Its Clinical Forms; *b*, Its Etiology; *c*, Its Treatment.

Dr. E. B. Bronson, title to be announced; Dr. J. Zeisler, "The Relation of Impetigo Herpetiformis to Pemphigus Vegetans;" Dr. J. A. Fordyce, "Notes on Drug Eruptions."

PUBLIC HEALTH.

Smallpox.—Only six new infected points have been reported since the date of the last smallpox summary, April 21, to-wit: at Worcester, Mass., origin traced to Boston; at Manchester, Conn., supposed to have originated in a paper mill from infected rags; at Fort Wayne and at Kewauna, Ind., origin of the Fort Wayne cases attributed to Cleveland, Ohio, of the Kewauna case, unknown; at Jackson, Mich., origin traced to Chicago; at Roodhouse, Ill., origin supposed to be from a tramp. Appeals have been made to Governor Matthews and to the State health authorities of Indiana, urging that the Chicago division of the "commonweal army" be prohibited from entering Indiana and marching across the State. An order of the Indiana State Board forbids the introduction and sale of ready-made clothing from Chicago, unless accompanied by a certificate from the proper authority that the clothing has been disinfected in accordance with the rules of the American Public Health Association, the Board claiming that every recent outbreak of smallpox in Indiana "has had its origin in contact with Chicago tramps or goods made in that city."

Up to the close of April there had been 1,210 cases of smallpox reported in Chicago since January 1, and the disease showed no signs of abatement. There were 544 cases reported during the month of April—an increase of 78 per cent. over the previous month, and the rapid growth of the epidemic is shown in the following figures: January, 128 cases; February, 233 cases; March, 305 cases; April, 544 cases—total, 1,210. During the corresponding period of the first year of the epidemic of 1881–83, there was a total of 412 cases, and the great increase was then, as now, in the month of April—133 cases in April as against 99 in March. The parallel is not reassuring, and unless efficient suppressive and preventive measures are vigorously enforced during the next four months there is reason to apprehend another serious increase and spread next autumn. With the wise expenditure of the recent appropriation of $100,000, now at the disposal of Health Commissioner Reynolds, much may be done, and there is promise in the wholesale vaccination work still being carried on. Nearly 10,000 vaccine points are being used daily by the department. The general and

continuous enforcement of vaccination is the most efficient and the most economical protection against a smallpox epidemic.

Asiatic Cholera. — Advices from the cholera centers are characteristically meager. The epidemic at Lisbon continues to spread and the disease is reported to have extended to the left bank of the Tagus, cases having appeared in the province of Beira near the Spanish frontier. A cable dispatch from Madrid announces 225 new cases developed at Lisbon, April 25, and on the 29th ult. there were 284 cases under treatment. A medical commission has been organized by royal decree of the Portuguese Government to advise the civil authority in regard to measures to be taken to check the farther spread of the disease.

BOOK NOTICES.

Tables and Notes on Human Osteology for the Use of Students of Medicine. By Sebastian J. Wimmer, M.A.M.M.D. With a preface by William F. Waugh, A.M., M.D. Philadelphia: Medical Publishing Company. 1894. Price $1.50.

This little book is one of the best brief compilations on the subject of osteology, and is in every way commendable, as an aid to the student in the study of osteology.

A Manual of Nursing in Pelvic Surgery. By Lewis S. McMurtay, A.M., M.D. Louisville. 1894. Cl., pp. 92.

This book is a practical guide for nurses engaged in the surgical treatment of the diseases peculiar to women. The extensive experience of the author in this class of cases, has enabled him to place at the disposal of the profession, a very useful book. The method of preparation of the instruments and the patient; the details of the various duties of the nurse, during and after operations, are given with minuteness, and care. The work is destined to be one of the most popular of its class. The style is pleasant and clear and the little volume is attractively printed.

Hydatid Disease, Vol. II. By the late John Davies Thomas, M.D. (Lond.) F.R.C.S. (Eng.) A Collection of Papers on Hydatid Disease. Edited and arranged by Alfred Austin Lendon, M.D. (London), Sydney and London. 1894. Bds., pp. 166.

This volume has been prepared by Dr. Lendon from MS. notes and papers left by Dr. Thomas at his death. It opens with an appreciative biographic sketch of the author, and then discusses hydatid diseases as affecting the abdominal organs in Part I. This Section includes the liver, the spleen, the kidney, the peritoneum, the male pelvis, the female pelvis, and the testicle. Part II gives the hydatid disease of the thoracic viscera, *i. e.*, the lungs and pleura, the heart, the great blood vessels. Part III is devoted to the hydatids of the nervous system, principally a discussion of hydatid disease of the brain and its membranes and the spinal cord. This is stated to be essentially a reprint of Dr. Thomas' paper on this subject in the Transactions of the Inter-Colonial Medical Congress of Australasia. Part IV, hydatid disease affecting the bones, muscles and superficial structures, viz.: The bones and joints, the muscles and fasciæ and the breast. Part V concludes the work with a discussion of the operative treatment of hydatid disease. *a*, operations which destroy without removing the parasite; *b*, radical operations; *c*, operations involving the removal of the fibrous sac as well as of the hydatid cyst. There is no index. The book is very far from being exhaustive but is very useful and instructive as far as it extends.

The Etiology of Osseous Deformities of the Head, Face, Jaws and Teeth, by Eugene S. O. Talbot, M.D., D.D.S. Third Edition, with 461 illustrations. Chicago: The W. T. Keener Co. Cl., pp. 487.

In this edition of the book, the author states that he has extended the scope of his original inquiries into the "departments of oral and nasal medicine, and surgery of the eye, ear and face, so intimately related to dental medicine through the causation originally assigned for irregularities of the teeth and jaws. The alleged causative factors in the case of the nose and mouth were themselves often found to be of constitutional origin. The scope of the researches presented in this edition, therefore, while seemingly extended, are practically confined to the limits of the original inquiry."

The present volume adds to the current rogues' gallery a portrait of the assassin, Prendergast, with the cranial measurements.

Those who believe that the perpetration of some outrage upon society is *prima facie* evidence of insanity on the part of the criminal, will find much to sustain their views in this book. The neurologist and the sociologist will be entertained and instructed by much of the material in this volume, which is carefully written, well illustrated and handsomely printed. The work shows great research and patient industry, and the fact that it has passed to the third edition is evidence of its favorable reception by the profession.

MISCELLANY.

Change of Address.—Dr. Edward C. Mann from Brooklyn to Madison Avenue, between 67th and 68th Streets, to which point he has also removed his sanitarium.

A New Jersey Centenarian.—On April 20, Mrs. Hannah Chard, of Glassboro, N. J., attained her one hundred and fifth birthday. The fact that she was born of Pennsylvania Dutch stock, at Brandywine, in the year 1789, is said to be well authenticated. She is said to have gone over the battlefield at Brandywine when six years of age, picking up bullets and other mementoes of the contest. Her health and perceptive faculties are exceptionally good, and she is still able to go to church on Sundays, when the weather is suitable. She has over one hundred and eighty surviving grandchildren and great-grandchildren.

World's Columbian Commission; Award to Medical Department, U. S. A.—The Executive Committee of Awards of the World's Columbian Commission, through its Chairman John Boyd Thacher, has notified the Medical Department, U. S. Army of an award on account of its exhibit of hospital, laboratory and medical supplies as follows: For excellent equipment of a military hospital including furniture, medicines, instruments and dressings. For a clinical laboratory of approved design, well supplied with all the apparatus necessary to facilitate the study of clinical microscopy. For an interesting and important collection of sections, photo-micrographs and bullet effects, all showing a high grade of efficiency in this branch of the Army service.

"Christian Science."—The Supreme Court of Nebraska, in the case of State of Nebraska vs. Buswell, has at last dealt a too long deferred blow at the so-called "Christian Scientists." One of these irreverent charlatans was prosecuted in a lower court for practicing medicine contrary to the statutes of Nebraska, but was acquitted by the jury. On an appeal to the Supreme Court it was held that the act to establish a State Board of Health, to regulate the practice of medicine in Nebraska, etc., is as much directed against any unauthorized person who shall operate on, profess to heal, or prescribe for or otherwise treat any physical or mental ailment of another, as against one who practices medicine, surgery and obstetrics as those terms are usually and generally understood.

In its decision the Court said: "The object of the statute establishing a State Board of Health, etc., is to prevent imposition upon the afflicted by ignorant and unqualified pretenders to healing power, and any person not within the exceptions prescribed in said act, and not having complied with its requirements as to a certificate, who shall under any pretense operate on, profess to heal, or prescribe for or otherwise treat any physical or mental ailment of another, thereby renders himself liable to its penalties."

Philadelphia Notes.

Philadelphia County Medical Society.—The election for second Vice-President (which had been postponed from the January to the April meeting) of the Philadelphia County Medical Society was held April 18, when two candidates' names were presented; the regular nominee was Dr.

Clara Marshall, and Dr. John C. Da Costa was named by the opposition. The general interest in the contest was shown by a large attendance of members. The Society was ungallant enough to reject the representative of the Woman's Medical College, and Dr. John C. Da Costa was declared elected. At the same meeting Dr. John R. Kerr, of Canton, China, was elected to honorary membership in the Society.

ORTHOPEDIC SECTION, COLLEGE OF PHYSICIANS.—At the meeting of the Orthopedic Section of the College of Physicians on April 27, a boy aged 12 years was exhibited, who five years ago had been operated upon for double club-foot by Dr. Thomas G. Morton, who removed the astragalus from each foot. The patient could walk or run naturally, the feet were in good position, and he could stand on heels or toes, there was good ankle motion. Dr. Morton presented this case because some one had expressed a desire to examine the patient five years after the operation. The result was pronounced excellent. It is claimed by the operator that cases of club-foot, with reference to the tarsus, may be divided into simple and complicated. Those of the first class can be restored to normal position by manipulation and division of tendons. Those of the second class are complicated by a dislocation and malformation of the astragalus, which prevents ankle flexion by blocking the joint. In the latter class, excision of the astragalus gives satisfactory results.

THE CHINESE LEPER, WING, who had been an inmate of the Philadelphia Hospital for several years, died recently; his savings in bank notes, amounting to $130, which constituted his entire estate, were sent to Washington and there cremated, as it was not deemed proper to allow these notes to go into general circulation.

PHILADELPHIA is again to have a Botanic Garden. After more than a year's delay, councils have passed the ordinance opening to public use, with the University of Pennsylvania as Trustee, the tract of thirty-five acres on the west side of the Schuylkill, located between West Fairmount Park and the grounds which were recently acquired by the city by the purchase of Bartram's Garden. The University will proceed to erect a museum building on this site to accommodate the rapidly growing collection of objects illustrating archæology, ethnology, natural history and the arts, among which is the very valuable Babylonian and Egyptian remains, and the Maxville Somerville collection of engraved gems, etc.

Medical College Notes.

APPOINTMENTS.—Dr. Solon Marks has been elected Professor of Miltary Surgery; Dr. Walter Kempster, Professor of Mental Diseases and Dr. B. T. Phillips of Menominee, Mich., Professor of Surgical Anatomy and Operative Surgery on the Cadaver, in the Wisconsin College of Physicians and Surgeons.

COLUMBIAN UNIVERSITY.—The Medical Department of the Columbian University, Washington, D. C., held its annual commencement April 24. There were twenty-seven graduates.

THE ILLINOIS STATE BOARD OF HEALTH.—At its recent regular meeting, April 24-28, the Illinois State Board of Health added the following named colleges to its list of those recognized as "in good standing": St. Louis College of Physicians and Surgeons, Barnes Medical College, Beaumont Hospital Medical College, Marion-Sims Medical College, all of St. Louis, Mo.; Hering Medical (homeopathic) College, National Homeopathic Medical College, both of Chicago. The American Medical (eclectic) College of St. Louis was stricken from the list and refused further recognition.

The following tribute to the memory of Dr. Rauch was adopted by the Board:

"The Illinois State Board of Health, realizing that the causes of State medicine and medical education have sustained a great loss in the death of Dr. John H. Rauch, former President and Secretary of the Illinois State Board of Health, wishes to express to the profession at large, and to the family of the deceased, its high appreciation of the services rendered by Dr. Rauch, not only to the State of Illinois, but to our entire country.

"He was the first man in our midst to place the subject of public health upon a scientific basis, treating the vital questions of drainage and water supply with the intelligence and energy necessary to bring about results and projecting plans in sanitary science that will long remain models worthy the study of the student of public health.

"Dr. Rauch should be held in reverence by the medical profession for his zeal in the direction of advance of medical education. He was among the earliest and one of the most constant advocates of a more liberal education, and his schedule of "Minimum Requirements" is as widely known in this country as is medical education itself.

"Beside the recognition of Dr. Rauch's great knowledge of the subject he had made his own, this Board wishes to record its enthusiasm for and appreciation of his devotion to his work; likewise of his many virtues as a friend and physician."

THE PUBLIC SERVICE.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from April 21, 1894, to April 27, 1894.

Capt. WILLIAM L. KNEEDLER, Asst. Surgeon, will, in addition to his present duties as post surgeon at Ft. Mason, Cal., perform that of attending surgeon at San Francisco, Cal., until further orders.

Capt. JAMES D. GLENNAN, Asst. Surgeon, is granted leave of absence for one month, to take effect on or about April 24, 1894.

Major VALERY HAVARD, Surgeon, is relieved from duty at Ft. D. A. Russell, Wyo., and ordered to David's Island, N. Y., for duty, relieving Major JOSEPH R. GIBSON, Surgeon. Major GIBSON, on being relieved by Major HAVARD, is ordered to Ft. Snelling, Minn., for duty at that station, relieving Major CHARLES K. WINNE, Surgeon. Major CHARLES K. WINNE, on being relieved by Major GIBSON, is ordered to duty at Ft. McHenry, Md., relieving Capt. CHARLES B. EWING, Asst. Surgeon. Capt. EWING, on being relieved by Major WINNE, will report for duty at Jefferson Bks. Mo.

Capt. NATHAN S. JARVIS, Asst. Surgeon, will be relieved from duty at David's Island, N. Y., upon the arrival of Capt. SAMUEL Q. ROBINSON, Asst. Surgeon, and will report in person to the commanding officer, Willetts Point, N. Y., for duty, relieving Capt. WILLIAM P. KENDALL, Asst. Surgeon. Capt. KENDALL, upon being so relieved, will report in person for duty at Ft. Columbus, N. Y.

LETTERS RECEIVED.

(A) Ashmead, Albert S., New York City; Antikamuia Chemical Co., St. Louis, Mo.; Atkinson, W. B., Philadelphia, Pa.; Armstrong, O. S., Detroit, Mich.; Autikammla Chemical Co., St. Louis, Mo.

(B) Beck, Carl, Chicago, Ill.; Bettman, H. W., Cincinnati, Ohio; Beadles, C. H., Lewiston, Ill.; Baker, A. R., Cleveland, Ohio; Banzhaf, H. L., Manitowoc, Wis.; Bates & Morse Adv. Agency, (2) New York, N.Y.; Babcock, Robt. H., Chicago, Ill.

(C) Cunningham, S. A., Cedarville, Ohio; Chrysler, Oscar, National Home, Wis.; Columbia Chemical Co., Washington, D. C.; Castle, Wilmot & Co., Rochester, N. Y.; Collyer, Samuel, Tacoma, Wash.; Cobb, M. B., San Diego, Cal.; Callaway, J. M., Shreveport, La.; Connor, Leartus, Detroit, Mich.; Chesman, Nelson & Co., St. Louis, Mo.; Cincinnati Sanitarium, Cincinnati, Ohio.

(D) Drake, G. W., Hempstead, Texas; Donovan, J. A., Lewiston, Me.; Dunglison, R. J., Philadelphia, Pa.

(E) Elder, S. & Co., Baltimore, Md.

(F) Foster, C. W., (2) Woodfords, Maine.; Focht, W. H., Tiffin, Ohio.

(G) Gouley, J. W. S., New York City.; Gronnd, W. E., West Superior, Wis.

(H) Haven, O. D., Youngstown, Ohio; Hummel, A. L., Philadelphia, Pa., (2); Howland, B. M., Panama, Iowa; Haywood & Haywood, Raleigh, N. C.; Hutchins, W. A., Orangeville, Ill.; Horner, Levi, Kildare, Oklahoma Ter.; Holton, H. D., Brattleboro, Vt.; Howe, H. H., Weston, Vt.

(I) Ingraham, C. W., Binghamton, N. Y.

(J) Johnson, H. L. E., Washington, D. C.; Jett, Elliott T., Fredericksburg, Va.; Jones, L. H., Odebolt, Iowa.

(K) Keen, W. W., (2) Philadelphia, Pa.; Kelly, W. R., Watonga, Okla. Ter.; Kellogg, J. H., Battle Creek, Mich.; Keener, W. T., Chicago, Ill.

(L) Lentz, Charles & Sons, Philadelphia, Pa.; Leighton, N. W., Brooklyn, N. Y.; Lichty, D., Rockford, Ill.; Lewell, John P., St. Louis, Mo.; Londonderry, Lithia, Spring Water Co., Nashua, N. H.; Leighton, N. W., Brooklyn, N. Y.

(M) Mooney, E. L., Syracuse, N. Y.; Markham, H. C., Independence, Iowa; McKinney, T. J., Gifford, Ill.; McMurtry, L. S., Louisville, Ky. Morrison, W. H., Holmesburg, Pa.; Mattison, J. B., Brooklyn, N. Y.; Malsbary, Geo. E., Cincinnati, Ohio; Marshall Printing Co., Marshalltown, Iowa; Marks, A. A., New York, N. Y.; Mathewson, J. O., Augusta, Ga.; MacGowan & Cooke, Chattanooga, Tenn.; Mettler, L. Harrison, Chicago, Ill.

(N) Neyman, E. H., Milwaukee, Wis.; Nelson, D. E., Chattanooga, Tenn.

(P) Pantzer, H. O., Indianapolis, Ind.; Pegram, E. C., Chicago, Ill.; Plummer, R. H., San Francisco, Cal.; Peacock Chemical Co., St. Louis, Mo.; Porter, G. H., Strawberry Point, Iowa.

(R) Ryan, C. B., Cincinnati, Ohio; Roberts, John B., Philadelphia, Pa.; Reed, R. Harvey, Columbus, Ohio; Ring, John, Chicago, Ill.; Remingtou Bros., Pittsburg, Pa.; Regar, Geo. H., Adv. Co., Philadelphia, Pa.; Rust, C. A., Saginaw, Mich.

(S) Sellman, W. A. B., Baltimore, Md.; Senn, N., Chicago, Ill.; Scott, X. C., Cleveland, Ohio; Souchon, Edward, New Orleans, La.; Sherman, H. A., Peachton, Ohio; Smart, Chas., Washington, D. C.; Schweigler, A. J., Milwaukee, Wis.; Street, David, Baltimore, Md.; Shoemaker John V., Philadelphia, Pa.

(T) The Maltine Mfg. Co., New York City, 2; Thomas, Oscar T., Cleveland, Ohio; The Mercer Chemical Co., Omaha, Neb.; The New York Policlinic, New York City; Talbot, E. S., Chicago, Ill.; Thomas, A. L., Chicago, Ill.

(V) Vetter, J. C. & Co., New York City; Van Riper, C. S., Paterson, N. J.

(W) Walker, R. S., Beacon, Mich.; Wall, G. A., Topeka, Kan.; Widman, J. F., McGregor, Iowa; Warner, W. R. & Co., Philadelphia, Pa.; Wilson, A. C., Youngstown, Ohio; Wegge, F. W., Winnebago, Wis.; Wood, Anna, Terre Haute, Ind.; Woodbury, Frank, Philadelphia, Pa.; Wood. E. A., Pittsburg, Pa.; Washburn, W. H., Milwaukee, Wis.

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ORIGINAL ARTICLES.

THE FIRST SUCCESSFUL CASE OF CÆSAREAN SECTION IN PLACENTA PRÆVIA, AND REMARKS ON THE METHOD OF OPERATION.

BY PROF. AUGUSTUS CHARLES BERNAYS, M.D.
MARION-SIMS COLLEGE OF MEDICINE, ST. LOUIS, MO.

History of the Case and Literature.—On Nov. 19, 1893, at 2 P.M. I was called to see Mrs. A. M., by her physicians, Drs. R. J. O'Reilly and W. W. Graves. The message calling me stated that I was wanted in order to perform the Cæsarean section and that the case was one of placenta prævia centralis. The patient is a healthy woman, 42 years of age, mother of four living children, the youngest a boy 10 years old. Dr. O'Reilly had been engaged to attend her in confinement which he had calculated would take place about the middle of December. He had been called by the husband at 1:30 A.M. on account of an alarming hemorrhage and arriving a few minutes later found the patient excited and frightened by the unexpected hemorrhage, sitting in a chair and a large bundle of cloths under her saturated with blood. The os was closed but the finger could be introduced and the placenta felt, as well as the blood streaming from the uterus. The vagina was tamponed and the patient put to bed, pelvis elevated and perfect rest enforced. Dr. W. W. Graves was sent for to assist and he arrived at 2:30 A.M. Patient's condition being good and the bleeding having ceased, the physicians determined to watch the course of events. As there had been no labor pains, it was thought that possibly the pregnancy might go on to its normal end, if the patient was kept quiet, and indeed there was no labor and no further hemorrhage occurred until 1:30 P.M., just twelve hours afterwards, when I was called. Dr. Thos. O'Reilly and Dr. Geo. F. Hulbert were also called and I brought my assistants, Dr. Ben Shanklin and Dr. Roux. After a consultation in which very conflicting views were expressed and carefully weighed, we concluded to perform the Cæsarean section, knowing full well that the operation had never been successfully performed under similar circumstances. All the physicians present concurred in the opinion that it was the best thing to be done for the mother and child under the existing circumstances.[1]

Under this head I may say that the credit for suggesting the operation in this case belongs to Drs. Graves and O'Reilly. Both of these gentlemen are experienced practitioners and obstetricians, both knew exactly what placenta prævia is, and fully understood the difficulties confronting them and the dangers to the two lives which were intrusted to them.

In a paper published in the *American Gynecological Journal* in September, 1892, by Dr. W. Hutson Ford, I find the only complete and logical discussion of this subject. In a learned and scientific manner the author arrives at definite conclusions upon purely theoretical grounds. This paper will always form the basis for the future discussions of the subject and the case here recorded will go far towards supporting the author's very positive conclusions.

The reasoning which led us to perform the Cæsarean section in this case was based on the brilliant results of this operation in the hands of expert operators in recent years. I myself had performed the Cæsarean section successfully at the Protestant Hospital in St. Louis upon a hunchback with narrow pelvis, saving both mother and child. I reported the case at the time to Dr. Robt. P. Harris and was informed by him that it was the first successful case in the State of Missouri. The statistics of the mortality of placenta prævia, when treated by the Braxton Hicks method in the hands of experts are not as favorable as those of the Cæsarean section under the same conditions. I am personally of the opinion that in this country, at least, expert obstetricians who are thoroughly well grounded in bacteriology and practical asepsis are not as frequent as similarly qualified surgeons.

The Operation.—The patient resided in a newly-built house, the external surroundings were favorable and one of the rooms was quickly prepared for the operation, while the patient herself was thoroughly cleansed after the usual methods now practiced in all cases where the abdominal cavity and the vagina are both involved.

After the patient was chloroformed, she was placed upon the operating table and again scrubbed with a 1–500 bichlorid solution, and the vagina again douched and swabbed through a speculum by the assistants. The os uteri was found closed at this examination. I am a thorough believer in rapidity in abdominal work and in a typical operation like the Cæsarean section I think that everything should be prepared beforehand with a view to performing the work in the quickest possible time, if for no other reason than to shorten the time of the narcosis. In this case which was an ideal one, so far as the condition of the patient was concerned, I stated before making the incision that I would try to break the time record and requested Dr. Thomas O'Reilly to carefully time the different steps of the operation.

The first incision extending from the umbilicus to the pubes, opened the abdominal cavity and cut the

[1] I wrote to Dr. Robt. P. Harris, of Philadelphia, and to Dr. Howard Kelly, of Johns Hopkins, as well as to the largest maternity hospitals in Europe and have found no record of Cæssrean section performed in a case of placenta prævia. Since then, I have found that the operation has been done twice before, but under the most unfavorable circumstances, once in the city of St. Louis by Drs. Hypes and Hulbert, and once in the mountains of Montana by Dr. J. M. Sligh, of Granite City. (*American Journal of Obstetrics*, February, 1892). The result in both cases was fatal because the operation was done upon patients who were much exhausted and weakened by loss of blood.

peritoneal covering of the uterus to the extent of one-half of an inch, but not being long enough to roll the uterus out of the cavity was extended about two inches above the umbilicus. All bleeding was checked and the incision washed with warm Crystal water.[2] The uterus was now rolled forward out of the cavity and an assistant standing between the patient's legs grasped the organ with both hands and compressed it against the horizontal ramus of the pubes.

The uterine cavity was next opened by an incision and while the water was escaping, the incision was lengthened upward and downward by a blunt-ended large pair of scissors. The living child was lifted out and handed to Dr. Hulbert for further care. Umbilical cord clamped and cut off. At this moment Dr. O'Reilly stated that a few seconds less than three minutes had been consumed in the operation.

The membranes were now stripped off and the placenta readily peeled off while the uterus was contracting down nicely. There was some oozing from the seat of the placenta and the uterine cavity was douched with the sterilized water in order to remove the clots. Some intestines had rolled out and after being washed were replaced.

The uterus was stitched with twelve deep silk sutures which embraced all of the layers of its walls. I aimed to embrace only the serous and muscular layers, but many of the sutures embraced the decidua as well. There is no good reason for not including the decidua and therefore, as long as the sutures only include the very edge of this inner coat, if at all, the healing by primary union can not be interfered with. Four superficial or perhaps "half deep" silk sutures as Dr. Kelly would call them, were placed between the twelve deep ones at those intersutural spaces where there was gaping or pouting enough to warrant their use. I have never been able to see an essential or important innovation in Sänger's sero-serous suture, and if the deep sutures are properly placed no others are necessary. It must be understood that by "properly placed," we mean that they are so arranged as to leave no pouting or gaping between the lips of the wound, that perfect approximation is achieved by one row of deep sutures. There can be no doubt that a perfect approximation by one row of sutures is better and more to be desired than by two or more rows—this part of the operation required eight minutes. The omentum was next brought down over the uterine sutures, and the closure of the abdominal incision by about twenty sutures embracing all the layers finished the operation, the entire procedure having taken exactly twenty-four minutes and forty-five seconds.

The external wound was treated by dusting it with Sennine and covering it with dry gauze and the ordinary abdominal bandage over all. The uterine cavity was now sponged out, per vaginam with iodoform gauze, the os was found easily dilatable and that part of the uterus to which the placenta was attached formed a ring about two and one-half inches wide reaching from the cervix upwards. I had prepared a very large gum hose seven-eighths of an inch in diameter, almost as large as a garden hose, which was passed into the uterine cavity and allowed to pass through the vagina ending in a large bunch of gauze in front of the vulva. Through this hose, injections and irrigations of the cavity could be made, if there should be any necessity at any time during the puerperium.

The patient was now put to bed and the after treatment was conducted by Drs. Graves and O'Reilly who were assisted by trained nurses. There was at no time during the convalescence any serious complication, except perhaps a slight tympanitis which disappeared after a purge. Patient sat up on December 3, and the nurses were discharged on December 12. Mother made a perfect recovery and has been well ever since.

The child did well for a few hours, but became asphyxiated, as the physicians suppose, on account of non-closure of the foramen ovale and died after about ten hours. The child was probably not much over eight months' gestation.

In conclusion, I may be permitted to express some epicritical opinions. The most important question which confronts me is: Would you advise the performance of the Cæsarean section in all cases of placenta prævia where the Braxton Hicks method or some similar operation is the only alternative? I would answer as follows: If an expert operator can be had who has done or assisted at more than two hundred abdominal sections of all kinds in which the total mortality was less than 7½ per cent. by all means let him do the Cæsarean section. If no such surgeon is at hand, select a physician to deliver the child who has frequently turned and extracted, one who knows how to clean his hands and who knows that it is a very difficult and tedious task to properly shave and cleanse the vulva and the vagina.

[2] In the city of St. Louis we are very fortunately situated for doing surgical operations in private houses, since the introduction into commerce of the sterilized and filtered water known as Crystal water. The price is so low and the package so convenient, that I now use it exclusively for irrigation of wounds and flushing cavities. By using it directly ont of the bottles it need not come in contact with the hands of assistants or vessels of any kind, which I feel is a most important safeguard against its infection.

THE DIAGNOSIS AND TREATMENT OF "FLOATING KIDNEY."

A paper read by special invitation before the Sixth Annual Meeting of the Shelby County Medical Society, Shelbyville, Ind., April 9, 1894.

BY HARVEY REED, M.D. (UNIVERSITY OF PENN.)

PROFESSOR OF THEORY AND PRACTICE OF SURGERY AND CLINICAL SURGERY OHIO MEDICAL UNIVEESITY; SURGEON PROTESTANT HOSPITAL; CONSULTING SURGEON B. & O. AND RIO FOUR RAILWAYS, COLUMBUS, OHIO.

The frequency of "floating kidney" associated with its varied complications, together with the errors in diagnosis, certainly warrant our taking up this subject, and considering it for a few moments before this ASSOCIATION.

The experience of the writer both as a general practitioner and consultant, has led him to believe that the existence of a floating kidney is more likely to be misunderstood and taken for something else than any other one disease of the abdominal cavity.

I have seen floating kidney treated for "lumbago," also for so-called "sciatic rheumatism." In another case I saw an able practitioner tap it for "ascites," and still another case where it was mistaken for an enlarged ovary.

On the other hand, I have seen an enlarged and pendant "gall bladder" filled with gall stones, mistaken for a movable kidney, and the mistake was not discovered until revealed by an operation. With these few examples, which we have given, as having come under our own observation and occurring in the

experience of able practitioners, it is quite evident that the diagnosis of a floating kidney is not always an easy task. In fact, it has been my experience that the early diagnosis of a floating kidney is seldom made, unless the patient is so fortunate as to fall into the hands of an experienced diagnostician early in this class of infirmities.

As a rule, you are called upon by some practitioner who has treated the patient for months or even years without success until one or both have become dissatisfied and seek relief either through council or a change in physicians.

By this time you may have had torsion of the renal vessels and nerves, and consequently find the patient suffering from lumbar pains, sciatica or both. On the other hand, the patient may be perfectly free from pain except more or less frequent paroxysms, during which it may be likened to that of a case of renal colic. Not unfrequently the patient, and especially if the abdominal walls are thin, will observe a tumor in the peritoneal cavity, which excites attention, although when first discovered it may not cause any special pain.

It is not uncommon to find that hydro-or even pyonephrosis may have set in; if the latter, it is not unusual to find it associated with secondary infection in the form of tuberculosis.

The clinical facts have forced us to the conclusion that the symptoms of a floating kidney vary, in accordance with the conditions which may be associated with it, and which are largely modified by the changes and complications which, as a rule, sooner or later, accompany this malady.

It may be considered presumptuous on my part to even attempt a definite diagnosis of floating kidney when such a noted authority as Agnew in his "Surgery," and even Pepper, in the "American Text-Book of Theory and Practice of Medicine," fail to give it, saying nothing of its omission in the "American Text-Book of Surgery;" and yet our little cycle of experience has led us to the belief that it fills a position which is sufficiently important in the diagnosis and treatment of abdominal diseases as to justify us in contributing our mite to the study of this distressing malady. I now imagine I hear some of my collaborators ask: What difference does it make? If you are satisfied there is a tumor in the abdominal cavity, make an incision and find out what it is. It will be time enough then to remove it if you can, or relieve it if you can not do any better, or let it alone if you must.

While we are ready to accede this point to those who are experienced and practical operators, yet the point I wish to make is that in the majority of cases movable kidney presents itself to the average practitioner, who is not experienced in abdominal surgery or in the diagnosis of abdominal tumors, who dare not open the abdominal cavity and look at its contents in order that he may make a diagnosis but who must resort to text-books for his information; and when, as I have already said, these text-books fail to give him this instruction it is our duty, although our experience may be limited, to give him what assistance we can from our accumulated storehouse of practical knowledge and aid him, if possible, to make an early diagnosis in this class of diseases.

On making an early diagnosis, I believe, hangs the importance of successful treatment of floating kidney. A failure to make an early diagnosis, simply means that your patient will take nine chances out of ten of contracting complications which are liable to be so grave as to require nephrotomy or even nephrectomy to relieve them. It is these neglected cases of floating kidney where you find long-continued severe nueralgias, due to torsion and subacute neuritis.

It is usually in the neglected cases of floating kidney that you find hydro-nephrosis, due to stenosis of the ureter, which, however, may last for weeks and even months without serious destruction to the substance of the kidney, as has been demonstrated by the author of this paper, by repeated experimental research but which, sooner or later, unless relieved is nearly certain to be followed with either cystic degeneration or pyonephrosis, tuberculosis or all, either one of which, if allowed to continue for any length of time, not only endangers the patient's life but will require a nephrectomy or to say at least, nephrotomy to relieve.

DIAGNOSIS.

In making a diagnosis of a movable kidney we should first consider the predisposition. This is largely governed by sex; women who have borne children,and especially if they belong to the laboring class, are *particularly* prone to this disease; poorly nourished females contribute their share, while age and occupation are important factors in contributing to this disease.

In reference to sex, floating kidney occurs much more frequently in females than in males, although I have seen several cases in males and one case in a young man who was unusually strong and muscular.

Notwithstanding our text-books inform us that floating kidney usually occurs between the age of 25 and 40 years, yet I have seen it occur in a young man under 18, and have found it in women who were past 70.

Occupation unquestionably has a great deal to do with causing floating kidney. The young man I have just referred to, was a member of a baseball club and addicted to violent exercise, which finally resulted in producing a floating kidney.

Again, washer-women who expose themselves to heavy strains, are frequently found suffering from this malady, while puny females, who lie around the house studying "how to do nothing," not infrequently becomes victims of this disease, often by suddenly changing their habits, during the presence of a friend by jumping out of a buggy or over a fence, which is followed by a displacement of the kidney. The same holds true of poorly nourished females, who may be suffering from some constitutional disease or marasmus, which has reduced them to such an extent that the least exertion will force the kidney out of its place. Pressure on the kidney during pregnancy has a tendency to cause displacement, and is not unusually followed by a floating kidney.

It is quite evident in attempting to arrive at a correct diagnosis that it is of the greatest importance that we carefully study all the predispositions which may lead to the production of a floating kidney and, if possible, ferret out the cause or causes which may have been the factor or factors in producing it. Having accomplished this, which is comparatively easy as compared with the differential diagnosis, we are then ready to undertake to distinguish it from other abdominal maladies, which, I am sure, we are willing to admit is not always such an easy task.

If the functions of the kidney have been interfered with by the displacement, the use of the urethral catheter will be of great service in making a correct differential diagnosis, especially if the congestion has been so great as to produce hematuria; where this occurs the use of the urethral catheter will very greatly assist us in arriving at the correct diagnosis.

In making the differential diagnosis between an enlarged and elongated gall bladder and a floating kidney, we must remember that traction upon the tumor, in the case of the gall bladder, will reveal that it is attached to the liver instead of the lumbar region, while traction upon the kidney will demonstrate that it is attached to the lumbar region instead of the liver. As a rule, the difference in texture where the abdominal walls are not too thick will enable you to diagnosticate between them; yet, when the gall bladder has very thick walls and is very much distended with semi-liquid bile and where the kidney is somewhat flabby, it becomes very difficult to differentiate between the two by the touch; but as a rule, with the history and the predisposition to guide you, this feature of the diagnosis can be decided.

If it happens to be the left kidney, that is affected (which is quite unusual), the complications of diagnosis are at once relieved.

Where the gall bladder is involved, it is not unusual to have it associated with jaundice and all its accompanying symptoms and complications. On the other hand, we would not expect, except in anomalous cases, to find jaundice occurring in the case of a floating kidney. In many cases digital examination will enable you to distinguish the kidney in its natural position on the well side, and its notable absence on the other side; at the same time it is often an easy matter to replace the floating kidney which, on pressure, will readily slip from under your finger and either ascend under the margin of the liver, or descend even to the brim of the pelvis; or it may be, in some cases, pushed over to the median line and assume a position on the abdominal aorta so that the pulsations of the latter may be distinctly felt underneath the displaced kidney, which may be outlined very distinctly by the aid of these pulsations. Under these circumstances, pressure will frequently shut off the circulation to such an extent that the femoral artery on each extremity can not be distinguished. It would be difficult to accomplish this with a distended gall bladder. In fact, I have never succeeded in doing so in cases of this class that have come under my observation.

As a rule, a displaced kidney is much more sensitive than an enlarged and elongated gall bladder, and while the shape may not always enable us to form a correct diagnosis, yet the difference in the outline of the tumor is such that we are guided with considerable accuracy in the line of a correct differential diagnosis. The elongation of the right lobe of the liver may complicate the differential diagnosis in this class of cases.

It is only a few days since I was consulted in a case of this kind in which a lady came to me from Northern Ohio, with the history of having suffered from a floating kidney for the last seven years. In addition to that, she had a very elongated and "hour-glass" shaped right lobe of the liver. The rest of the liver was apparently normal, but on careful digital examination we were enabled to shoot the kidney up under the elongated lobe of the liver and down below it, and by pressing the liver outward and upward we could readily distinguish the kidney which was also elongated beside being flattened, evidently the result of pressure from the liver.

As a rule, a patient who has floating kidney is relieved when in the prone position, but in this case the pain was increased, owing to the fact that the prone position caused the liver to press upon the kidney and thus increased the pain, and no doubt, was largely the cause of the displacement.

The patient was admitted to the Protestant Hospital, and assisted by Dr. Baldwin I made the radical operation, when this condition was demonstrated and the movable kidney sutured fast to the muscles of the back; the patient is now making a rapid recovery. In this case, however, I am inclined to believe we can hardly expect to secure permanent relief, for the reason that the liver will continue to make pressure on the kidney which may sooner or later have to be removed.

The differential diagnosis between a movable kidney and that of a spleen is much more readily accomplished. The location of the spleen being on the left side is less frequently called into question, owing to the fact that the left kidney is less frequently displaced. But when it is displaced, it is seldom the spleen assumes a shape that in any respect corresponds to that of the kidney and very seldom drops down as low in the abdominal cavity as a floating kidney. Again, the kidney may be pushed up under the pendent portion of the spleen which will enable you to readily feel both organs at one time. If, however, the spleen extends down over the kidney, it will be readily distinguished from it by a digital examination, and the kidney will be felt underneath that portion of the spleen which extends in front of it.

The increased mobility of a floating kidney, as compared with that of the spleen, is a ready guide in making a differential diagnosis, so much so that we can scarcely imagine how it is possible under ordinary circumstances to misconstrue what we are almost warranted in calling positive symptoms pointing to a correct differential diagnosis. Cancer of the pylorus might possibly be mistaken for a movable kidney especially when the mesentery is very long, and where the cancer assumes the shape and size of a kidney and drops down below the normal position of the kidney, as I have seen it in several cases.

Only a few days ago, assisted by Dr. Means, I operated on a case of this kind which had been admitted to the Protestant Hospital of Columbus, in which the cancerous mass was so movable that it could be pushed beyond the median line on the left side, and down as far as the kidney on the right side; and on the other hand, could be pushed up under the margin of the liver or over the large curvature of the stomach. But on careful examination it was found entirely distinct from the kidney which remained stationary, no matter what position the tumor was placed in, saying nothing of the gastric disturbances which enabled us to make a clear differential diagnosis. On making a laparotomy it was clearly demonstrated that our diagnosis was correct. A gastro-enterostomy was made with the Senn bone plates and the patient, although sixty years of age, made a rapid recovery without a bad symptom. In these cases you always have the history of stomach disturbances which do not exist, as a rule, in displaced kidney. You have no interference with the urinary

secretions, no lumbar pains, no tenderness on pressure of the kidney, while you have, as a rule, tenderness on pressure over the cancerous mass. The principal points which might lead us astray in a case of this kind are the size, shape and location of the tumor together with its mobility.

Omental tumors which are quite frequent, might possibly be mistaken for a movable kidney, but as a rule are seldom painful except as they may produce mechanical pressure, and likewise they seldom interfere with the functions of the kidney unless it is by mechanical pressure on the ureters, producing hydronephrosis. This, however, seldom occurs. Where an omental tumor is movable, it is readily distinguished from the kidney by digital examination and palpation, as the latter will be found in its normal position, while the other may be moved around through the different parts of the abdominal cavity, seldom if ever invaded by the kidney.

The differential diagnosis between a small ovarian tumor with a long pedicle might possibly be mistaken for a movable kidney. Comparison between the two would, however, on the one hand, enable us to raise the kidney far above a point which would be at all probable in the case of an ovarian tumor, while the latter would be found to be anchored to the pelvic region instead of in the lumbar, as in the case of the former. A vaginal examination would aid in determining the presence of an ovarian tumor, while in the case of a floating kidney it would be quite out of the question to force it down to a point where it could be touched with the finger in the vagina.

We must also remember that a movable kidney in the early stage is extra-peritoneal, while an ovarian tumor is practically intra-peritoneal, the latter usually having a broad pedicle, which, as we have already said, is anchored in the pelvis, while the former has a long narrow meso-nephron anchored near the median line of the lumbar region.

TREATMENT.

We have little confidence in the palliative treatment of a floating kidney, as we believe it is the exception and not the rule that such treatment results in any permanent relief. Experience has taught us, as well as thousands of patients, that the lesions which result from neglect of these cases in the vain effort of securing relief from palliative treatment were worse than useless. Blisters, lineaments, bandages and compressors, we look upon, and especially the latter, as actually injurious, which only submit the patient to additional torture with little or no prospect of permanent relief, and is almost certain to be followed, sooner or later, with organic disease necessitating nephrotomy and often nephrectomy.

It is our firm belief that the only safe and successful treatment of a movable kidney is a radical operation by which the kidney is replaced and firmly anchored by a number of sutures, which should not only pass through the capsule, but should include a portion of the parenchyma as well as the fascia and muscles underneath.

For accuracy and rapidity of the operation in making the radical treatment for a movable kidney, we would suggest the use of a suture of either chromatized catgut or silkworm gut, both ends of which should be armed with a long, slim needle varying from six to seven inches in length, according to the patient, the points of which should be triangular, and when used it should be passed through the capsule and the parenchyma of the kidney and directly through the muscles of the back, making its exit through the skin. The second needle should also be passed through the kidney from one-half inch to an inch distant from the entrance of the former, and pass directly through the muscles of the back, making its exit through the skin the same as its mate.

If you desire to have the suture remain, an incision should be made through the skin and the suture tied and the skin stitched over it. If, on the other hand, you desire to remove the suture subsequently, all that is necessary is to tie your sutures on the skin and allow them to remain until you are ready to remove them. This procedure will very greatly simplify the operation which will require a much smaller opening than when you use a curved needle and attempt to fasten by suture the kidney and its capsule to the fascia and muscles of the back in the ordinary manner. With the use of the long needle the suture can be put in very quickly and as many as are necessary to hold the kidney to place, tying them on the patient's back and the abdominal incision closed, all of which can be done in a very few minutes, and we believe it to be equally as efficient and much easier performed than the old method generally in use.

If the patient submits to this line of treatment in the early stages of this malady, before serious complications arise, there is little or no doubt of her permanent recovery and practically little danger in the operation.

On the other hand, where the radical treatment is not resorted to, there is always danger of serious organic disease of the kidney, which may sooner or later prove fatal, and if not, the patient becomes a nervous, suffering miserable creature, of little benefit to herself or those around her.

RESPONSIBILITIES OF THE ABDOMINAL SURGEON.

Presidential Address delivered before the Tri-State Medical Society.

BY RICHARD DOUGLAS, M.D.

PROFESSOR OF GYNECOLOGY IN THE VANDERBILT UNIVERSITY, NASHVILLE, TENN.

I take this, the first opportunity since my elevation to the honored position as President of the Tri-State Medical Society, to thank you for the undeserved and unsolicited expression of your confidence and regard. Conflicting emotions of pride and dismay possess me in entering upon the duties of the office.

The magnificent program we have presented for your entertainment and instruction, is convincing evidence that within the compass of this organization there are men alive to every recent issue that has created a ripple on the waters of the vast professional sea, and that these contributions, many of which you have enjoyed, attest the thoroughness and excellence of their work. Impressed with our competency to present to the world transactions of the highest order, I feel impelled to take this occasion to urge the immediate necessity of systematizing our work. As a Society and individuals, we are prone to dissipate our energies. Concentrated and united effort would yield absolute results, and my word for it, a principle or conclusion emanating from this Society would become authoritative. "In all depart-

ments of science the largest results are to be obtained by division of labor and combination of effort." Therefore, it is to be hoped, and if I may presume to exercise the rights, with which you have vested me, I would suggest that such necessary legislative action be taken for the creation of a new committee to be known as the Committee on Essays and Discussions, and that the President and Secretary be *ex officio* members. The duties of this Committee shall be the selection of a limited number of subjects, divided under several headings, and that two or more members, as may be necessary, be appointed at this meeting to present papers at the next annual meeting upon the several branches of the subject. The essays thus prepared and presented will be accepted as a careful and complete study of the subject. Manifestly, work pursued after this plan would yield a volume of transactions of inestimable worth. Far be it from me to depreciate the value of voluntary papers and accurate clinical reports, for oftentimes they are gems of originality and indisputable facts, garnered in the harvest of experience. Furthermore, the impromptu discussions following these contributions are a fair test of the ready wit and depth of wisdom of our members.

Believing the Fellows will tolerate another recommendation which is humbly submitted, I would remind you that in holding the annual meetings in Chattanooga, this body has departed somewhat from the precept born of experience, that governs all medical organizations, National and State, *i.e.*, if you desire a medical association to flourish, then you must rejuvenate it yearly by the acquisition of new members. These you can more readily acquire by going into their midst, and attracting them by the character and excellence of your work. I would recommend that our place of meeting be changed annually. Chattanooga, gentlemen of the Tri-State Society, is our mother. We, like wandering children return to cast ourselves at her feet and receive her blessing and do her reverence. Proud we should be of our natal soil. We stand upon hallowed ground. Every feature of its varied and beautiful landscape is sacred with historic significance. Nature, with sublime architectural conception, has builded here about an amphitheater, and from the terraced seats and galleries high, spectators have witnessed for more than a century, the most appalling tragedies of our nation's history. Here dwelt the fierce and implacable Chickamaugas, a tribe of the Cherokees, notorious above all for their treachery, daring and hatred of the pale face. "The eagle in his eerie, the panther in his lair," could not be safer than the wily savage was, secreted in the mountain gorges, inaccessible except through a labyrinth of narrow passes, cul-de-sacs and steep ascents. Yet, the combined courage and sagacity of Sevier, Montgomery, Robertson and Jackson annihilated him from Nickajack to Running-Water, and the brave old Cumberland settler began a life of peace and prosperity not to be interrupted until the tragic days of September, 1863, when in quick succession were fought the battles of Chickamauga and Mission Ridge—the Marengo and the Waterloo of the Confederacy. Upon the faults of Bragg and the fortunes of Grant the fate of a nation hung, yet let the dead past bury its dead, and here under the shadows of Lookout let memory be forgot.

It is yet too early in the life history of this organization to hope to interest you with a review of the work accomplished at previous meetings. Believing a brief discussion of some specific subject will prove more acceptable than a rambling essay in generalities, it is most natural that I should give expression to those feelings which, in the hours of reflection, oppress me. The responsibilities of the abdominal surgeon is the theme of my brief discourse. In the awkward expression of my thoughts I may appear dogmatic and, perhaps, unintentionally wound the feelings of some of my hearers. Permit, me, then, to preface what I have to say with a disavowal of any such purpose. If I can rouse the slumbering conscience of a single would-be laparotomist, I may blight in embryo a glorious and *gory career*, but I will also save one, perhaps many human lives, and the object of this paper will be accomplished.

For fear my position may be misunderstood, and that I may be ranked with those, who, under the title of a plea for conservatism, are consuming valuable space in our journals with lengthy communications, mere expositions of their own ignorance and a contemptuous attempt to reflect upon some rival, I wish at the outset to declare myself opposed in principle and practice to those so-called conservative methods which permit bags of pus to remain for weeks or months in the pelvis, while the tinkering gynecologist douches, paints, poultices and stuffs the woman. Nor can I comprehend the process of reasoning that induces some of our ablest men to tease an ectopic gestation sac into the suppuration with electricity, when a properly executed section offers absolute recovery at the minimum risk to life. How pathetic it is to see one of these conservatists, from fear and selfishness only, patiently waiting for a renal or hepatic suppuration to mature. Can any one question for a moment, that the abdominal section with its perfected technique, is the crowning glory of modern surgery? The great responsibility of abdominal surgery rests with and upon the operator. Is he, as you know and hear of him, up to the full measure of the requirements? Has he a conscientious understanding of the vastness, of the seriousness of the undertaking? Does he appreciate the fact that abdominal work is above, apart and beyond all other surgery, that in its execution he is confronted with problems peculiar to this field of labor? Upon his thorough knowledge of all things within, his boldness, his comprehension and application of every principle of surgery, even to its most minute details, depends the issue of the case—the life of an individual. Furthermore has he the training in this special line of surgery, for in the language of Dr. Potter, "unless he has the abdominal experience he has no right to enter its domains except under urgent necessity." It is incomprehensible, yet a fact, that men without previous training or special work of any kind of surgery, men who would tremble to amputate a thigh, or quail if confronted with an aneurism, hail with delight the finding of a condition that gives them a flimsy excuse for opening the peritoneum. Skilled workmen have found this membrane remarkably tolerant when handled intelligently. This fact has been emphasized of late. The eager and inexperienced have interpreted it to imply that the peritoneum is insensible to any degree of heat or cold, resists violence like a prize-fighter, can digest, absorb and remove anything from a few square inches of a suppurating cyst to a pair of forceps or an occasional sponge, will entertain with cordial hospitality all manner of filth,

and in the end, by noble self-sacrifice, permit the patient to recover. "Certainly the peritoneum has overlooked more insult and withstood more foolishness than most parts of the body." Surely this wonderful structure with its great powers of absorption, is not altogether protective in its functions. Does the careless, the inexperienced, the filthy operator take into account the possibilities of danger to the patient through this membrane alone?

The italicized and oft-quoted paragraph from Mr. Tait which reads as follows: "In every case of disease in the abdomen or pelvis in which the health is destroyed or life threatened, an exploration of the cavity should be made," is an established principle for government, but does that say that you, or I, any or every one shall operate? It is not so expressed. Yet this clear cut rhetorical sentence is perverted and used as an admission ticket to the cavity of the abdomen. The amazement of many aspiring laparotomists when they first see the hitherto unknown beauties of the vasa-intestini tenuis or the Fallopian fimbriæ, or the crystal cyst of Mortgagni, may be likened to the bewilderment of a country bumpkin at a village fair. Must you not confess you have seen the cavity invaded by men whose anatomic knowledge could not assign the viscera to their proper regions? Whose full knowledge of pathology might be expressed in "poultice a bile 'till its ripe, then split it." Have these would-be surgeons the knowledge of hemostasis at their command? Can they comprehend Péan or Grigg-Smith's preference for forceps pressure? Do they understand why catgut is both unreliable and dangerous? Do they know how and when to employ elastic ligature? These are common questions; a thousand more would confront them in detail work.

After years of study in general surgery, bacteriology and asepsis, it will take an average hospital interne six months to learn how to be moderately clean, and even with this education only about one in fifty become practically aseptic. Divert his mind for ever so short a time from the routine preparation necessary for aseptic work, and some fatal blunder will be committed, sepsis will creep in, and infection will follow. (I appeal to those of you who are constantly engaged in surgery, if by some chance you have not occasion to operate for several days, do you not find it necessary to keep a careful watch upon yourself to avoid violation of some rule for the exclusion of infection?) This is not the place to raise the question of the value of antiseptics, but it is meet now, and at all times to proclaim our faith in aseptic or clean surgery, and as I have above attempted to show, its practice involves not only a theoretical knowledge, but a practical training. Pray answer me, then, by what right or privilege have men without either of them to enter the domain of abdominal surgery? Upon the other hand, it may be well argued and successfully maintained, that conscientious and ambitious men are not to be restrained because they have not enjoyed the advantages of education and training. A man with bent of purpose may educate himself. Until that knowledge is acquired, it matters not how, he should keep his hands out of the abdomen. I regret to say that there is another class of men attracted to this field of surgery—men wholly incompetent and unscrupulous, that we now and then hear of throughout the country, doing a needless section simply for the glory of the thing. Happily there are few such men, yet if reports be true, they exist. Further mention of them is degrading to our subject. Enthusiasm, an honest desire for heroic and radical measures, the temptation of sudden glory, of quick fame may lead a young ambitious man to operate without due preparation and perhaps needlessly. This doubtless is done too often and some luckless patients suffer the consequences. Science is not altogether without some compensatory advantages. One neophyte receives an impressive lesson—pathology perhaps an interesting specimen, and our science a more devoted savant. Hawkins Ambler, in an address before the British Gynecological Society on "Abdominal Surgery," said many things that merit reflection. Every one engaged in this work should carefully study his conclusions, one of the most striking of which is thus expressed: "I believe many disasters are the result of too careless speech by men whose experienced hands can do safely what another could not attempt with safety to his patient."

In line with this thought, it is not at all unusual to hear some of our ablest teachers and most successful operators depreciate the value of differential diagnosis in abdominal disease. With eagerness akin to cruelty, a quick conclusion is reached that the life, perhaps only the comfort, of the patient is in jeopardy and therefore a section must be made. You all are familiar with the stereotyped expression of one of our most distinguished Southern gynecologists who, indifferent as to diagnosis, remarks to his assistant as he is about to open the abdomen: "We will see what we will find ———." One more word, and you could charge me with dealing in personalities. It is my honest conviction that this careless disregard of the importance of a discriminating diagnosis is responsible for rash, needless and most unfortunate surgery. The responsibility of these errors rests not alone upon the operator committing them; the fault is reflected to those of authority who have encouraged this looseness and indifference in diagnosis. A diagnosis is the capstone of the edifice whose foundation is pathology, with a superstructure of well braced symptomatology. I grant you, a diagnosis can not always be attained; no one is more impressed with this fact than I am while writing these lines, for it occurred to me only a day or two ago to open the abdomen, believing I had to deal with a large uterine fibroid, when the true condition was a sarcoma of the kidney, which when removed weighed thirteen pounds. The surgeon who applies with painstaking patience, all recognized points of differentiation, escapes much embarrassment during and after operation, achieves better results and places himself and science on a much higher plane than one of these "trust-to-luck fellows," indifferent to pathology, only concerned with the apparent indications for surgical interference. I, therefore, maintain that a long training in the laborious study of pathology and symptomatology and practical familiarity with the methods of physical examination are prerequisite qualifications for one contemplating abdominal work. Without these, to what extent he may bring opprobrium upon our art and render himself legally responsible, is as yet *sub judice*. The necessity for operation and your fitness for undertaking it, appeals to your judgment and conscience. The propriety having been determined, your real responsibilities are now assumed. It is not the pur-

pose of this paper to enter into a detailed description of the mode of preparation, time of operation, order of room, presence of visitors, choice of anesthetics, assistants, etc.; everything should be done by the direction, every one engaged should be upon the selection of the operator. Your associates and consultants may express their willingness to indorse your action and divide responsibility, for which magnanimous expression of confidence I have more than once felt profoundly grateful, yet this is only sentiment; the patient and friends hold the operator alone accountable. The law places the burden of responsibility upon the surgeon, the science of surgery intrusts to him alone the protection of her honor, and, lastly, if he be a man made of the right kind of stuff, his own conscience accepts, without effort to shrink or shift, the weight of the occasion. When discord and indecision threatened the integrity of our government, General Jackson, he whom we love to speak of as "Old Hickory," with characteristic courage upon that memorable occasion said: "I will take the responsibility." Every abdominal surgeon should have the courage of Jackson to assume the responsibility and act in accordance with the dictates of an enlightened conscience. The frequent practice of abdominal section has eliminated more false theories, shattered more chimerical pathology, exploded more so-called established principles, resulted in more substantial scientific progress and saved more lives than any agent, method or device employed in the noble domain of medicine. All honor, everlasting and immortal honor to those who have developed this high art; from McDowell the originator, to Price its greatest exponent! A few reckless and incompetent men actuated, we fear by anything but the best of motives, have misunderstood and misapplied this great agent. Too many men fancy themselves naturally endowed with the qualifications for abdominal work, therefore the operation of celiotomy has fallen somewhat into disrepute, but this is only in obedience to the natural law of reaction. It is an established procedure—all that carping conservatists can say will not detract from the good it has done, nor lessen its future importance. All that I would say is to incite in the minds of those contemplating this work, a thorough appreciation of the requirements, difficulties and dangers that attend opening the abdominal cavity. One possessed of a thorough fitness and knowledge of these things will not abuse the procedure, but glorify our science!

PIGMENTATIONS OF THE SKIN.

Clinical Lecture delivered at the Medico-Chirurgical Hospital of Philadelphia.

BY JOHN V. SHOEMAKER, A.M., M.D.

PROFESSOR OF SKIN AND VENEREAL DISEASES IN THE MEDICO-CHIRURGICAL COLLEGE AND HOSPITAL OF PHILADELPHIA.

A smooth, pure skin, mantled with the glow of health, is an important element of comeliness. The beauty of this tissue is, however, peculiarly liable to be marred by the operation of causes arising from within or without the organism. Many constitutional ailments impair the complexion; many excite actual structural alterations of the integument. Habitual indigestion, malaria, chlorosis and other maladies exert a deleterious influence upon the nutrition of the skin. Addison's disease produces a more or less complete bronzing of the surface. A brown line extending from the umbilicus to the pubes is one of the signs of pregnancy though it is also occasionally seen accompanying chronic uterine disease. Irregular brown patches scattered here and there upon various regions of the body may also occur during pregnancy.

I desire to call your attention to a class of pigmentations often observed, which sometimes co-exist with excellent general health, but which in other cases are associated with definite physical failures and which are always a disfigurement. I have, in the first place, three patients to show you as examples of that very common affliction known in popular language as freckles, and classified in our dermatological treatises as lentigo.

Lentigo, freckle.—The first subject is a young man of 22 years, rather tall and of a vigorous build. His hair, you will notice is of a slightly reddish cast, his eyes gray and his complexion is naturally fair. He informs me, as I should judge from his appearance, that his general health is excellent, his appetite and digestion good. I look at his tongue and find it clean. I feel his arms and I find that his muscles are well developed. Until he came to the city, a few months ago, he had been used to an active out-door life in a country village. His face is plentifully sprinkled with freckles. The spots are all small, not much larger than the head of good-sized pin. They are of a yellowish brown color and, although numerous, do not coalesce. The freckles exist also upon the back of his neck, upon the dorsal surfaces of his hands and upon his forearms. He tells me that the remainder of his body is free from the little discolorations.

The second case occurs in the person of a youth, 17 years of age. He is of average height and strength but is not of so robust a type as the preceding individual. His tongue is somewhat coated, his appetite is not very good and he has a tendency to constipation. He is employed by a tailor as an errand boy and a helper about the shop. This lad has a dark complexion. His hair and eyes are of a brown hue, verging upon reddish, the color which is generally described as bronze. He would not be an ill-looking boy if his skin was free from freckles. His face is almost entirely covered with brown spots, of various sizes and shapes. The smaller ones are round and the larger are generally oval, but in some places the confluence of neighboring lesions has produced a figure of irregular contour. The hands of this lad, also, are freckled.

Our third patient is a young girl, aged 19 years. She is distinctly blonde, with a fair skin, light brown hair and blue eyes. Her skin is, unfortunately, to a certain extent disfigured by the presence of freckles. The number of the spots is not as large as in the other two cases, but they are sufficiently abundant to detract from an otherwise comely appearance. She is in good general health.

Freckles consist of an increased deposit of the normal pigment of the skin. This coloring matter, you are aware, is contained in the cells of the deepest layer of the epidermis, the rete mucosum or Malpighii. Persons of fair skin, and especially those having red hair, are the most frequent subjects of freckles. Brunettes, however, are by no means exempt, as is shown by the second case. In those of dark complexion a copious development of freckles often gives an unsightly and dirty appearance to the skin. They are not uncommon in mulattoes, partic-

ularly in those unwholesome looking specimens with but a slight shade of color, light hair and light gray eyes.

I need consume no time in describing the gross appearance of freckles. They are so common as to be familiar to every one. Their general variation as regards size is from a pin's head to a small pea. Those which adjoin each other will often coalesce to form a larger spot. They are most frequent upon the face, but often enough occur upon the back of the hands and may even affect those portions of the body which are habitually covered. Freckles are seen in persons of nearly every period of life, but do not often develop prior to the third year of age. As a rule, they make their first appearance during warm weather and are more conspicuous in summer. In some cases the spots pale during winter or even disappear, returning with the approach of the succeeding summer. Interrogating the patients now before us, I learn that none has observed any decline in the spots during the colder portion of the year. Freckles are apt to disappear entirely and permanently as the subjects reach or pass beyond middle life.

Freckles are not dependent upon any constitutional disorder, though their development may be favored by a slight disturbance of the peripheral nerves. They may occur in association with other diseases of the skin. The direct exciting cause is heat, especially the heat of the sun, in conjunction with the high winds of the spring and autumn. A certain predisposition on the part of the skin would seem to exist.

Treatment.—It is the subject of treatment which is the most important in regard to freckles. They are so common, they seem to cursory inspection such an integral portion of the skin that many individuals simply accept them as an undesirable blemish, without seeking to have them removed. In private practice, however, you will often be consulted, especially by young ladies, as to the possibility of removing freckles. It is evident that, in order to get rid of the spots, we must either stimulate the absorbent system to carry off the excess of pigment or must remove the affected patches of epidermis *en masse*. The chief objection to the latter procedure is upon the formation of a new epidermis the freckles will be reproduced by the same causes which occasioned them in the first place. The drugs which are most serviceably employed are such as possess a stimulant or slightly cauterant action when applied to the skin. They may be used in the form of ointment or solution. Alcohol is one of the remedies which may cause retrocession of freckles and it is therefore expedient to use as a menstruum for any other article upon which our choice or preference may fall. The application of strong carbolic acid to each spot will cause the cuticle to be detached in the course of a few days. The surface will then be red but clear, and the redness will then fade away leaving an unblemished skin. Corrosive sublimate, used in guarded strength, has been very widely employed in treatment of freckles. Salicylic acid is also effective in causing the epidermis to scale. Ammoniated mercury, or white precipitate, the chlorid of ammonium, sulpho-carbolate of zinc, are other substances which we may call into use. The root of Solomon's seal or polygonatum giganteum and other species of polygonati indigenous plants may likewise be employed, in the form of fluid extract or decoction, for the same purpose. The tincture of benzoin, the tincture of myrrh and the fluid extract of hamamelis are substances which may prove efficacious. One of the most beneficial medicaments to apply in this condition is the copper oleate, made into an ointment with lanolin, lard or cold cream, each ounce of the preparation containing from five to sixty grains, according to the circumstances of the case. The ointment of corrosive sublimate is made of the strength of from two to five grains to the ounce of excipient. Solutions of the same salt may contain from four to eight grains to the ounce.

The agents of which I have made mention may be combined in the following formulæ:

℞.	Hydrarg. chlorid corros . .	gr. iv–xvj	24–96
	Aquæ hamamelidis dest . .	f℥js 16	
	Glycerin	f℥js 16	
	Spir. vini rectificat	f℥iii 96	
℞.	Hydrarg. chlorid corros . .	gr. iv–xvj	24–96
	Tinct. benzoin	f℥ij 8	
	Spir. odorat q. s. ad.	f℥iv 128	
℞.	Acidi borici	℥ij 8	
	Cocain hydrochlorat	gr. x	60
	Sp. vini rectificat	f℥iv 128	

Chloasma.—The two cases which I shall now show you present a more prominent and extensive discoloration; one which, moreover, though not at all uncommon is of much less frequent occurrence than freckles. I allude to chloasma.

The first of the two patients is a young girl, 20 years of age, who, two months ago, suffered from an attack of measles. Soon after recovery her face, which had previously been fair and fresh colored, became mottled by brownish spots of an oval shape, and varying in size. They are scattered and do not coalesce. They do not itch, smart, tingle or pain. They exhibit no desquamation. The spots annoy only by their presence. The body is entirely free. The general health is entirely unaffected. Her appetite and digestion are good.

The next patient is also a girl and is 18 years old. She has several large and rather dark brown spots upon the face but has none upon the body or limbs. There is a large brown patch of irregular outline upon each cheek. The spots occasion no discomfort and the patient considers herself healthy. She is, however, somewhat anemic. Her lips and tongue are pale and her finger nails lack their normal rosy hue.

The pigmented patches of chloasma vary considerably in size. The coloring matter, like that of freckles, is deposited in the rete mucosum. The only difference between the two affections, therefore, is that the patches of chloasma are considerably larger than the freckle spots. The surface is entirely smooth to the touch. The tint varies in different cases from light yellow to dark brown or even black. The deepest shades are sometimes designated as melasma or melanoderma.

Chloasma, as well as freckles, may be occasioned by exposure to heat or wind. Other external sources of irritation may also lead to the deposit of pigment. Thus, the friction of clothing, the pressure of belts, trusses, etc., the action of mustard plasters and fly blisters, the constant scratching excited by chronic skin diseases attended by itching, determine an increased formation of coloring matter. The spots brought about by such causes are known as idiopathic chloasma.

Unlike freckles, however, chloasma may depend upon the existence of serious internal disease. It may, as in one of the cases before us, follow an infectious malady, as measles. It may occur as a result of malarial intoxication. It sometimes co-exists with malaria, tuberculosis or cancer. Chloasma may develop in consequence of mental excitement. Certain affections of the skin also give rise to chloasma. Among these I may mention senile atrophy, morphea and scleroderma. Popular opinion has long associated chloasma with hepatic derangement, and a common name for the affection is liver spot. The most usual internal cause of the anomalous pigmentation is disorder of the uterus or ovaries. When due to this cause, the affection is known as chloasma uterinum. This form locates itself particularly upon the forehead and temples. In some instances the discoloration is very deep. It is apt to be especially dark in brunettes. Sometimes there are a number of small brown patches. In other cases the pigmentation extends almost without a break from ear to ear. Chloasma of utero-ovarian origin, forms an exception to the rule that only the face is involved. A deepening of the normal color may be seen around the nipples. In some cases the discoloration is not of long duration. In others it continues for an indefinite period. The surface is smooth, unless complicated with some other cutaneous malady. In pregnancy we sometimes meet with cases in which the discolored patches are very large and, indeed, involve almost the entire surface.

Chloasma uterinum may occur either in the single or married, either as a result of disease or of pregnancy. It does not often occur after the grand climacteric has been reached. Not infrequently it is associated with hysteria. When the underlying cause has been cured the chloasma generally disappears.

It is not possible to mistake freckles for any other affection. Any one is perfectly competent to make the diagnosis. There is one disease, however, which bears some resemblance to chloasma, and that is tinea versicolor. The patches of the latter malady usually appear upon the body, those of chloasma upon the face. In tinea there are a number of spots; in chloasma, there are but few. Tinea versicolor is accompanied by a fine scaling. The surface is perfectly smooth in chloasma and there is no desquamation. The patches of tinea enlarge rapidly and itch. Chloasma spreads slowly and gives rise to no itching. Finally, the microscope furnishes us with a test. Tinea versicolor is caused by the growth of a specific vegetable organism, the presence of which can be readily recognized.

Treatment.—The treatment of chloasma depends upon the same principles as that of freckles. The list of drugs which we may employ locally is much the same in both affections. In chloasma, however, we may be obliged to take measures for the improvement of the general health or for the relief of visceral disorders. Chloasma uterinum demands a therapy addressed to the genital system. Again, we must be cautious in the use of external remedies, remembering that certain caustics, when used too freely, invite a deposit of pigment. This is especially true of mustard, Spanish fly and croton oil. The mineral acids are also open to the same objection. Carbolic acid may be mopped lightly upon the surface of the discolored patch with advantage. Acetic acid may be likewise used in the same way. The local application of the tincture of iodin will sometimes prove beneficial. Caustic potash, potash and soda soaps may also be of avail. Veratrin ointment, the ointment of the nitrate of mercury or of ammoniated mercury, or mercurial ointment are other preparations which have their advocates. I have generally derived more satisfaction, however, from the employment of the ointment of copper oleate, the mercuric or the mercurous oleate. The corrosive sublimate was a favorite with Hebra, who used it dissolved in distilled water, alcohol or collodion, in the proportion of five grains to the ounce. A compress moistened in the solution is kept applied to the affected surface for a period of four hours. This produces a blister and the discolored epiderm is replaced by one free from pigment, though the color may subsequently reappear. Brushing the patch with peroxid of hydrogen will sometimes answer a good purpose. The tincture of benzoin and borax are also of service in chloasma. These various agents may be combined as in the manner indicated for freckles. A prescription which I have often used is thus composed:

℞.	Hydrarg. chlorid corros. . . .	gr. x.		60
	Ammon. chlorid.	ʒj.	4	
	Sp. vini rectificat	fʒj	cc 32	
	Aq. hamamelid dest	fʒiij	100	

M.

Better than all the medicinal applications named, in both freckles and chloasma, is the use of the galvanic current. I am constantly in the habit of making use of this treatment and can testify, from an extended experience, to its advantage. Galvanism stimulates absorption of the pigment and is, for that reason, far preferable to the use of drugs, after which the pigment is often reproduced in the new cuticle. The results from galvanism are more uniformly permanent.

THE IMPORTANCE OF EARLY RECOGNITION AND TREATMENT OF OBSTRUCTIVE DISEASES OF THE UPPER RESPIRATORY TRACT.

Read before the Philadelphia County Medical Society, March 14, 1894.

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The introduction of a subject so time-worn and stale might require an apology were it not that notwithstanding there is a plethora of literature there still remains a singular indifference and lack of appreciation of the merits of the matter in the mind of the general practitioner. Doubtless much of this is due to the very voluminous character of the literature, which tends rather to interest those for whom the subject has an especial attraction. We read much of the histologic structure of the various hypertrophies, and numerous are the instruments introduced for their destruction. We read less of the best means of demonstrating their existence, the etiologic factors concerned in their production, and the prophylactic measures which may be adopted to prevent their development.

Perhaps no single abnormal condition is productive of more marked alterations in physical beauty and healthy functions than diseases producing obstruction in the upper respiratory tract. The anxious

and watchful mother views with sorrow the freckling or tanning of her child's face. How much more disagreeable than these are alterations in the facial lines to such degree as to cause a face to be expressionless ; and when to this is added partial deafness, with all its unpleasant effects, we have a picture which any careful mother should strive to avoid. Were as much care bestowed on the important functions of the nasal chambers as is generally given to the skin or other tissues more directly under the eye, we would have fewer of these unpleasant pictures. Nor is this marring of physical beauty the sole deleterious result of these conditions; it can be proven that serious and perhaps grave interference with important functions follow in its wake.

In order to have a proper appreciation of the importance of the subject we will review for a moment, and in a cursory manner, the anatomic structure and physiologic purposes of the nasal chambers and their contiguous structures.

In the bony nasal chambers are three scroll-like bodies, the turbinate bones, two of which, the middle and inferior, are accessible in the living subject, which form the sides of the chamber; a septum, separating the nasal chambers, which is reinforced by a plate of cartilage in the recent state. These turbinated bones divide the nasal chambers into three meatuses—superior, middle, and inferior—into which open the various sinuses or foramina which communicate with the accessory cavities—namely, the frontal sinus, the ethmoid and sphenoid cells, the antrum of Highmore, and also the lachrymal duct. All these structures in the living subject are covered with mucous membrane well endowed with blood vessels and nerves, whilst over the turbinate bones the tissue is erectile or cavernous.

The situation of these chambers, the peculiar construction of the bones, the unusually large surface of mucous membrane for so small a cavity, and the very generous blood supply, bespeak important functions. Bosworth claims three; 1 the first and very important function in respiration; 2, an aid in phonation by acting as a resonant chamber; 3, as an olfactory organ.

The atmospheric air as it passes through the nasal chambers is brought in contact with a comparatively large surface of mucous membrane which is rendered warm by the free blood supply and moist from the secretion of the numerous mucous glands therein contained. The effect of this contact is first to abstract from the air, dust and other foreign bodies, and secondly to add to the inspired air warmth and moisture. This latter function is most important. It has been computed that over 7,000 grains of water are expired from the lungs in twenty-four hours; and Aschenbrandt has demonstrated by a series of carefully conducted experiments that the source of this moisture is in the nasal chambers.

From this brief and very imperfect glance at the anatomical position and functional purposes of the nasal chambers we may draw a few important lessons. Interference with the proper and easy inspiration of air through the nasal chambers is productive of diseased conditions, not alone of those organs themselves but of the more important respiratory structures within the chest.

It can not be doubted that inspiration of air into the air vesicles imperfectly warmed, deprived of the moisture which Nature intended it should have, must exercise a deleterious influence on the delicate mucous membrane lining these cells. I am not ready with statistics to prove the relationship between pulmonary and bronchial affection and obstructive diseases of the upper air tract, nor do I deem it necessary, for it is a matter of common experience and observation that those children whose nasal chambers are obstructed either directly by hypertrophies, polyps, etc., or indirectly by hypertrophied pharyngeal or faucial tonsils, are sunken-chested, prone to attacks of acute bronchitis and coryza, and in many respects are less healthy than other children. I am well aware that these conditions are often the result of a constitutional vice which in itself renders the subject less robust, still I am more than ever convinced that removal of the local effects of this diathetic condition results more effectually in a return to a normal condition than any plan of treatment directed solely to the condition itself. Nor is it alone the respiratory tract that suffers from these abnormal states. I have before remarked that children so afflicted are apt to be in a condition of poor health generally, and it has occurred to me that perhaps this may be not entirely due to the diathetic condition which is so frequent a concomitant, but rather that the lungs, being supplied constantly with a vitiated air, *i. e*, air insufficiently warmed and moistened, failed to supply the blood with a healthy, proper pabulum and hence the tissues suffer. By the explanation what it may, we must not lose sight of the fact that a condition of ill health frequently does exist, and we should bend our energies to ascertain the cause and seek its remedy.

It is not the object of this paper to elaborate on the various methods of treatment, but rather to inquire into the causation and to endeavor to point out, means which may be taken to ameliorate the conditions existing and to prevent the development of more serious ones. Especially is it desired to inquire into the causative influences of obstructive diseases of the upper air passages in young children.

Eliminating all those effects of imperfect or perverse fetal development such as occlusion of anterior or posterior nares, cleft palate, etc., we have conspicuously prominent in the category of obstructive lesions in the upper respiratory tract—hypertrophic conditions of the turbinate bodies, of the pharyngeal, faucial, and to a lesser degree the lingual tonsil.

A glance at the records of any of our large throat and nose clinics will convince one that these abnormal conditions are far from rare; nor does even this showing give us a thoroughly accurate conception of their frequency. Too common is it to ignore or carelessly treat the various catarrhal symptoms presented to us, and this indifference on the part of the profession has led to a corresponding indifference on the part of the laity, so that only those cases of pronounced obstruction are brought to the notice of the general practitioner. Were the nasal speculum used as freely as the stethoscope or clinical thermometer we would be astonished at the result. Again, certain hypertrophic conditions have but comparatively recently received any measure of attention from the profession. Though faucial hypertrophies have been observed and studied from remote times, it was not until a very recent date that Meyer gave to the profession a clear idea of the significance of hypertrophic conditions of that collection of adenoid tissue

at the vault of the pharynx known as the pharyngeal tonsil; nor is the importance of the subject to-day appreciated by the rank and file of the profession, notwithstanding that much has been written about it and many instruments devised for its removal. Situated as it is in a somewhat inaccessible or rather unobservable portion of the upper pharynx, it is only by the use of the rhinoscopic mirror that its presence can be clearly demonstrated; this being the case, it is patent that it must be frequently overlooked.

With these facts before us it is clear that, whereas our clinics show us that these states are common, they give us no adequate conception of their prevalence.

At the clinic of the Episcopal Hospital it is the custom to carefully examine the nasal cavity, the pharynx, and post-nasal surfaces in every case that applies for treatment, irrespective of the fact that the subjective symptoms point to lesions in this or that locality; and in children of tender age, where a rhinoscopic examination is not feasible, if there is any suggestion of disease in this locality a finger is introduced back of the soft palate and over the vault of the pharynx to demonstrate by tactile sense the presence or absence of any abnormality. It is surprising as a result of this procedure to note the number of cases in which there are lesions of the upper pharynx in which the symptoms have been overlooked by the parents.

In considering the etiology of these hypertrophies it is as well to treat of them collectively, for whereas they are often separate and distinct lesions and exist independently, they are often associated and their etiology, so far as our knowledge goes, is in many respects similar.

In the case of the glandular tissue there can be no doubt that in a few instances these hypertrophies are congenital, doubtless the effects of an inherited vice—syphilis or scrofula—carrying out the well-known tendency of these dyscrasiæ to affect lymphatic and glandular tissue. Though this view is combated by no less an authority than Meyer, who leans to the view that it is always an inflammatory process in a tissue which normally is largely developed in infancy and childhood, at the same time it is difficult to explain the presence of this state in very young infants unless we presume this inflammatory process to have taken place during its pre-natal existence. Those cases developing subsequent to birth doubtless have as a starting-point an inflammatory or catarrhal origin.

We have demonstrated the frequency of hypertrophies of the glandular tissues and turbinates in children, and have admitted a few cases may be congenital, which leaves the vast majority to have its development subsequent to birth; and, as it is our belief that its causation lies in some condition outside of the child, at least in part, it is now our endeavor to seek out those causes and, if possible, lay down certain laws looking to their eradication or, at least, amelioration. Here, as with many other diseases of insidious approach, an early recognition is productive of much good.

Among the general causative agencies which it is not entirely within our power to relieve, may be mentioned atmospheric conditions incident to residence in temperate climes, and especially near the seaboard; the method of heating houses in cities by dry air frequently derived from an unsanitary source; carelessness in the dressing of infants and trusting them too much to the care of servants who unnecessarily expose them. All these and others exercise an influence in the production of the disease, but only in a general way. The prophylactic remedies are obvious and suggest themselves.

The various catarrhal conditions which the above enumerated disturbing influences of our environment occasion, are of much importance from an etiologic standpoint. There can be no doubt that it is here we have the starting-point of the hypertrophic process. A simple coryza is neglected; the child is not even protected from the causes which produced it—the result, one coryza succeeding another the entire season. The effect of a long-continued inflammatory process is precisely the same in the nasal and pharyngeal tissues as in the other tissues of the body—namely, increase in the connective-tissue growth, increase in the cellular growth. And it is just here by a knowledge of the effects that the family physician's advice and council can be of so much value and save so much misery and suffering to the child—so much mental anxiety and mortification to the parents. I believe that parents should be taught that a coryza is by no means so simple or harmless an affair as is commonly believed. It is better to err on the right side—better by far to give some attention (possibly needless) to a few attacks of coryza than to sit quietly by doing nothing, and permitting the production of obstructive masses in the upper air-passages that may alter the child's expression and possibly injure the health.

Parents should further be taught that repeated coryzas indicate a diseased condition of the nasal or pharyngeal mucous membrane demanding prompt and thorough treatment. The physician should himself insist on making a careful examination aided by the nasal speculum and rhinoscopic mirror, and should lay down a plan of treatment which his ingenuity will suggest, and persevere with it until the conditions yield; and I believe in this way, and in this way alone can we hope to have any measure of success.

Conspicuous in the category of special causative agencies may be mentioned the eruptive diseases of childhood, and especially those in which the fauces and nasal chambers are involved in the diseased process. Foremost among these may be mentioned diphtheria. The well-known tendency of diphtheritic processes to attack glandular tissue is well exemplified in the post-nasal spaces. We are familiar with the appearance of the diphtheritic membrane on the tonsils, but usually the examination of the other mucous surfaces is not made, and we remain in ignorance as to the extent of this process into the nasal chambers and vault of pharynx. Doubtless if careful examination was carried out in every case we would find the proportion in which these structures are involved to be very large. I have no doubt that many of the cases of so-called re-infection are in reality those in which there has been an involvement of the pharyngeal tonsil in the diphtheritic process. When an examination of the tonsils reveals an absence of the familiar membrance and a subsidence of the inflammatory condition, we are lulled into a sense of security and perhaps relax in our vigilance, unmindful of the fact that the disease is perhaps making insidious inroads at a spot beyond our unaided view. However, we are not concerned with this at

present; sufficient is it for us to know the extreme susceptibility of the mucous surfaces in this disease.

After the subsidence of the diphtheritic process it is very common to have a catarrhal condition continuing for a considerable period; this is especially noticeable in cases in which the nasal mucous membrane has been implicated; though it frequently occurs where there has been no perceptible involvement of the nasal chambers, and I believe it is just in these cases that there has been a diseased process going on at the vault of the pharynx. The explanation of this mucus discharge and other evidences of a catarrhal condition is doubtless due to alterations in the nutrition of the part, in consequence of the high grade of inflammatory action, and also to septic absorption. Were an examination made at this time we would likely find a hypertrophic condition either in the nasal turbinates or the pharyngeal and faucial tonsil. Though doubtless the majority of these cases do well without any special treatment directed to the part, yet in a certain number the catarrhal condition persists, and especially is this likely to occur in those children who seem prone to catarrhal states, and the foundation is laid for the formation of masses of hypertrophied tissue.

The beneficent offices of the family physician can be here admirably employed. It is not wise to pass over lightly the persistence of a catarrhal state after the subsidence of the inflammatory symptoms. Treatment employed at this time and persisted in until an amelioration takes place, can be productive only of good.

Scarlatina, as is well-known, expends at least a part of its energy on the mucous membrane of the fauces; though, unlike diphtheria, it rarely involves the nasal chambers. Here, as in the foregoing, the inflammatory action is so high, often to the production of false membrane, as to exercise a baneful influence upon the nutrition of the tissue and aid in the production of hypertrophies. We are all familiar with the fact that hypertrophies of the faucial tonsils are a frequent sequela of this disease. The same process that gives rise to hypertrophies in this tissue is at the same time exerting its influence on the tissues of the vault.

It is needless to dwell on this; the too familiar sight of catarrhal conditions as sequelæ of scarlatina precludes any argument to the contrary as to its position as a causative agent in the conditions under consideration. Nor is it hardly necessary to refer to the necessity for prompt treatment—one word, however, on this point. It seems to me an imperative duty on the part of the medical attendant to insist on an examination and, if necessary, subsequent treatment in every case where a catarrhal condition evidenced by a mucous or muco-purulent discharge from the nose, a thick voice, and mouth-breathing persists, after all evidences of the exanthemata have passed away.

Measles, though commonly regarded as a light and insignificant disease, is exceedingly apt to leave some trace of its existence. The explanation of this is evident. Not commonly menacing life, it is, however, very active in its attack, and this activity is exerted on the mucous surfaces in the entire respiratory tract. Mothers should be informed of the fact that with care the course of the disease will be benign, but without it there is extreme probability of a catarrhal affection with all its unpleasant consequences being left as a sequela. And here, as with others, active treatment should be insisted upon if the catarrhal symptoms persist after the subsidence of other evidences of the exanthemata.

The other exanthemata and febrile diseases, such as rötheln, variola, varicella, typhoid fever, etc., exert a certain amount of influence as causative agents, but only in a general way, as any alteration in health will do. The diseases mentioned, viz., diphtheria, scarlatina and measles, exert a special influence because the diseased condition seems to expend itself on the mucous surfaces, producing alterations and perversion of function.

The clinical picture presented by sufferers from obstructive diseases of the upper respiratory tract is absolutely characteristic, and especially is this true as regards the alteration of facial lines and changes in expression. Naturally this obstruction to the entrance of the air by the normal route, viz., through the nose, necessitates its seeking some other mode of ingress to reach the lungs; the only other way is through the mouth, and hence we have the condition of mouth-breathing with all the discomfort and unpleasant effects which such a condition entails. Long-continued mouth-breathing brings into play muscles about this orifice not usually called upon for excessive work, and at the same time nominally puts at rest muscles about the nose whose functions are not called into play; the result is an alteration of facial expression to such a degree in well-marked cases as to give to the child a stupid, almost idiotic appearance. The obstruction in the case of the pharyngeal tonsil may become so excessive as to encroach on the pharyngeal orifice of the Eustachian tube, interfering with the proper supply of air to the tympanic cavity, thus inducing catarrhal or inflammatory conditions of the mucous lining of this tube and also of the tympanic chamber. The result of this is dullness of hearing or even complete deafness.

The normal course of the secretion from the numerous mucous glands in the nasal chambers is obstructed and hence flows back into the naso-pharynx; added to this we have a greatly increased secretion from the adenoid vegetations at the vault. During sleep this mucus collects in the pharynx, and as the child is obliged to breathe through the mouth, we have associated loud snoring with rattling and gurgling of air through the mucus secretion; hence the child is restless and fitful and the annoyance to other members of the household excessive.

We have then as the salient features of a case we are attempting to portray: Mouth-breathing, snoring, rattling of mucus in the fauces, and disturbed sleep; a dull, listless expression of countenance; hardness of hearing, and in many cases impairment of general health, causing the child to be anemic, sunken-chested, prone to catarrhal attacks, and of stunted growth.

Much has been written and various are the opinions as to the treatment of these distressing conditions. We are not concerned in this article whether it is the proper method to remove adenoid growths by forceps, curette, or finger; to diminish hypertrophied turbinates by means of galvano-cautery, snare or escharotics, but a few words in conclusion as to the management of cases in their incipiency may not be amiss.

Mothers should be urged not to neglect a persistent snuffle in a child, not to regard as trivial the con-

tinuance of a mucus discharge after diphtheria or the exanthemata. Physicians, on the other hand, should not pass these complaints lightly by ignoring them, or directing in an indifferent manner some simple and likely inefficient remedy.

The management of hypertrophies at this early stage is as simple as the results are happy. After a careful examination the nares and upper pharynx should be cleansed of mucus by an antiseptic and detergent spray, *e. g.*, Dobell's solution, Seiler's tablet, Listerin in diluted solution, etc., and then applications made to the affected mucous membrane of an astringent or alterant, depending on the condition of the parts. Should we find simply an increased secretion with no appreciable alteration in the turbinates, tonsils, and surrounding tissues, it is likely we will accomplish all that could be desired by directing spraying of the nares thoroughly by one or other of the solutions mentioned twice daily and continued faithfully until the membrane presents a normal appearance and the secretion ceases.

In cases still farther advanced in which we find the turbinates quite red and somewhat swollen; the pharyngeal tonsil secreting more mucus than normal, and rather large; the faucial tonsil red and somewhat hypertrophied, we will find it advantageous to use some application to diminish the inflammatory condition. These applications may be made quite painless by spraying the parts with a 5 per cent. solution of cocain or introducing a cotton tampon saturated in the same solution. In the nares a solution which has gained favor in the various clinics devoted to these diseases is that of iodin. The strength of the solution may be graded by the severity or obstinacy of the case. It is well to begin with a weak solution, increasing the strength as the necessities of the case demand. In some cases which resist this plan of treatment a touch of the fused bead of chromic acid along the turbinates will often accomplish the desired object; this latter plan should be immediately followed by the antiseptic spray to dilute and limit the destructive power of the escharotic. It is merely necessary in these early cases to touch the mucous membrane lightly to produce a superficial eschar; the resulting slough and subsequent contraction will so squeeze the blood vessels as to bring about the desired diminution in the size of the tissues.

The pharyngeal tonsil also in many cases will respond satisfactorily to applications of iodin on a pledget of cotton carried by an applicator so curved as to pass readily behind the soft palate and up to the vault. Glycerole of tannin has been found to act very happily, though perhaps a little more unpleasant in its effects. The application of chromic acid (fused) to a pharyngeal tonsil should not be advised, though undoubtedly as useful as in the nose, unless the operator is steady and familiar with making applications by the aid of the rhinoscopic mirror.

It would be hardly necessary to refer to the treatment of catarrhal and slight hypertrophic conditions of the faucial tonsils the result of the causes named, were it not that here, in spite of the ready accessibility of the part, they are subject to neglect. The same process of cleansing is as necessary as in the other hypertrophies, after which an application of a solution of 60 gr. to the drachm of nitrate of silver, glycerole of tannin, or in stubborn cases producing a superficial slough by fused chromic acid, will probably answer every purpose.

In the more advanced cases or in those which fail to respond to the above-outlined plan of treatment and a steady increase of the hypertrophied tissues occurs, there is but one plan which should be carried out at as early a date as possible, namely a destruction of the hypertrophied tissue. The various plans to accomplish this object will not be touched upon, but can be readily learned by consulting any of the modern treatises devoted to the treatment of diseases of the nose and throat.

In recapitulation the object of this paper has been to call attention to the following points:

1. The importance and desirability of early attention to diseases of the upper respiratory tract consisting of the nose and naso-pharynx.
2. The production of alteration in nutrition and possibly pulmonary and bronchial troubles by hypertrophic conditions of the upper respiratory tract.
3. The etiology of these states referring to the influence of environment and especial mention of diphtheria and the exanthemata as prominent factors in this category.
4. The prevalence of these conditions.
5. Carelessness and indifference in both physician and patient as to the various catarrhal states which are believed to be the precursors of the diseases under consideration.
6. The necessity of early treatment and the power for good exercised by the family physician in these troublesome conditions.
7. The clinical picture presented by these unfortunates, laying especial stress on the alteration in facial expression and the distressing and annoying condition of the child during sleep.

TREATMENT OF DIPHTHERIA.

Read before the Wayne County Medical Society, 1894.

BY OSCAR S. ARMSTRONG, M.D.
DETROIT, MICH.

There is no disease with which we have to contend that requires better surroundings or greater care in its treatment to insure a successful outcome, than diphtheria. It is rightly dreaded as one of the most deadly foes of childhood, and even adults do not escape its attacks. It is a treacherous disease, and one or two members of a family may have it in a mild form, while in the remaining children it may present its most malignant characteristics. Nor does its treacherous character end here, for often when our patient seems to be doing nicely, with membrane entirely gone, pulse and temperature normal and everything progressing favorably, some of its dangerous sequelæ make their appearance.

The first record we have of diphtheria in America was the epidemic in Boston in the sixteenth century, since which time it has become completely domiciled. Originally the disease appeared in epidemic form only, but at the present time it has become essentially endemic in nearly all our large centers of population. Its ravages are not confined to the homes of the poor in overcrowded and filthy tenement houses, but extend to those of the wealthy in country and city. Until the last few years little was understood of its true nature, but pathologists by careful and patient investigation have discovered its cause. Klebs was the first to demonstrate the existence of a specific bacillus of diphtheria, and his conclusions were afterwards confirmed by Löffler. Experiments have proven that

the bacillus of Klebs–Löffler, when brought in contact with the mucous membrane or inoculated therein, will produce a true diphtheritic membrane with its accompanying constitutional symptoms. We are thus prepared at the present time to treat diphtheria from a more intelligent standpoint than ever before. Yet notwithstanding this fact, from statistics which I have been able to collect, the mortality is simply frightful, and if an epidemic prevailed in any of our cities in which the death rate was correspondingly so great, it would, I venture to assert, create consternation not only among the laity but the profession as well. It seems to me that we have become so accustomed to its pestilent presence that we accept its frightful mortality as something unavoidable, and it has ceased to alarm us.

To quote from an interesting paper in the last JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, by Dr. E. L. B. Godfrey, of Camden, N. J., on the "Treatment of Diphtheria," there were 2,624 cases of diphtheria reported to the Board of Health of Philadelphia from January 1 to October 28, 1893, with 750 deaths, making a death rate of 28.5 per cent. During the same period in Camden 250 cases were reported with 56 deaths, making a death rate of 25 per cent. During the year of 1892 there were reported to the Board of Health of Detroit 1,156 cases, with a death rate of about 26.5 per cent. For the present year I have been unable to secure the statistics, but Dr. McLeod, the Health Officer, assures me that the number of cases has decreased about 40 per cent. as compared with 1892.

It would seem apparent from the diverse opinions and methods of treatment that no specific has yet been discovered. The symptoms in the early stages are so closely allied to those following the contraction of a severe cold that many times parents are misled, and do not call their physician until the disease is thoroughly intrenched. Every family physician ought to instruct father and mother how to examine their child's throat, and whenever he (or she) complains of sore throat or gives evidence of it by symptoms such as languor, headache, fever, etc., it ought to be inspected and if inflamed or white spots show, the physician summoned at once to make a diagnosis and care for the case. In the autumn of 1891 I had under my care three cases of diphtheria in a family of five children all making favorable progress. One day when making my morning call I was asked by the mother to see a fourth child, a little girl 3 years of age, whom she said was not well. On examining the child's throat I found it literally full of diphtheritic deposits of a purple hue. Fauces, tonsils, uvula and soft palate were covered and the tissues necrosed, the offensive odor being almost unbearable. The countenance was suffused, eyes dull, stupor manifest, temperature 106 degrees F. and pulse so rapid it could not be counted. It was a case of diphtheria of the most malignant type. I gave a very unfavorable prognosis and asked for a consultation. During the afternoon I saw her again with my friend, Dr. Mulheron, a gentleman of experience in this class of cases. All we could do for our little patient availed nothing and she died the same evening, about twelve hours after I first saw her. Since that time I make it an invariable rule to see every child in the house in which I am treating a case of diphtheria, at each visit.

The period of incubation in diphtheria varies from two or three days to a week. If the attack is mild the symptoms are at first hardly perceptible. There is usually slight chilliness followed by fever, thirst, headache, anorexia, furred tongue, more or less muscular soreness and a certain amount of rigidity of the muscles of the neck and throat. There are undoubtedly cases of the disease so mild that they are not recognized, and the little one associates with his playmates and conveys to them the virulent germ. In this manner many children acquire diphtheria, leaving us ignorant of its method of introduction. If the attack is malignant in character its advent will be marked by correspondingly severe symptoms. It does not follow, however, even in the worst forms that the patients will complain of sore throat. This one diagnostic point will often enable us to differentiate between it and tonsillitis, for in the latter the pain on deglutition is generally much greater.

A large and well-ventilated room should be chosen, and the carpet or rugs, upholstered furniture and curtains removed. The most favorable temperature for my patients has been 68 degrees F. The disease being at first local and afterwards constitutional requires both forms of treatment. During the past two years I have adopted a plan of treatment that has given me excellent results in *every case*. The first and most important thing for the physician to do is to get the good will and confidence of his little patient. When this is done half the battle is already won. When the little one is willing and anxious to do as you direct, you are enabled to conduct a case as satisfactorily with a child of 4 or 5 years of age as though he were an adult. On the contrary, if a spray or gargle has to be forced on the unwilling patient with nerves wrought up to the highest tension, medication, no matter how well considered, is of no benefit, and I believe is positively harmful. The patient should be put to bed and made to understand that the recumbent position is a necessity and that this rule must not be violated by any exertion of his own. When it is necessary to use the spray, gargle or swab, he should be supported in a half reclining position by the nurse. The rule applies with equal force when nourishment or medicine is given.

As a local application I have found nothing that approaches in value the peroxid of hydrogen. It may be used as a gargle or spray or held for a few moments in contact with the membranous deposit by means of a swab. I use it varying from 30 per cent to full strength, the latter only when it is applied directly to the exudate. Children use a 30 to 50 per cent. solution as a gargle or spray, without any discomfort or objection. When the tonsils are enlarged and painful, the throat is covered by a a piece of soft flannel moistened with a hot mixture of equal parts of lard and turpentine, enveloped by a thick fold of wool cotton held in place by a bandage. If the throat is not painful the turpentine and lard are omitted.

The medicines most in vogue in past years for internal administration have been the tincture of the chlorid of iron, sulphate of quinin and chlorate of potassium, all of which are more or less disagreeable to the taste and require a great deal of persuasion to get the little sufferer to take them. During the past two years I have used the bichlorid of mercury internally, in all my cases of diphtheria, as a routine plan of treatment and with unvarying good results. I combine it with alcohol, glycerin, eucalyptol and

minute doses of arsenic, in a strength varying according to the age of the patient. It may be given in doses of one-fiftieth to one-sixtieth of a grain to a child of 3 years, every two hours. For the past year I have been using it as prepared by the Detroit Chemical Company, containing one-sixtieth of a grain to the drachm. The preparation is known as diphtherol, and is combined with pleasant aromatics so that children take it without the slightest difficulty. Due credit must be given to the alcohol which this remedy contains, for in a disease so depressing to the vital centers and in which the toxemic symptoms are so pronounced, supporting and stimulating treatment ought to be pursued from its commencement. The effect of the treatment with the bichlorid is truly remarkable, and I have seen cases that I, at my first visit, deemed hopeless, improve so rapidly that in twenty-four hours the crisis was passed. It ought to be given freely until its constitutional symptoms appear, when the frequency of administration should be lessened. In very bad cases I have given 1 drachm of the diphtherol every hour for the first day, or until the constitutional effects in the way of uneasiness and pain in the abdomen were manifest. When the nasal passages are affected, I use the spray of peroxid of hydrogen solution with great comfort and relief to the patient. It ought to be used as often as every two hours.

Complications may arise requiring the use of quinin, digitalis, strychnin, etc., but they can in the majority of cases be administered in the form of a suppository. Since I have been using the plan of treatment here outlined, I have been fortunate in having laryngeal invasion in but one case. A possible intubation or tracheotomy was averted by forming a tent under which was introduced hot steam medicated with eucalyptol and the application of the hot pack to the neck.

I have thus briefly sought to direct your attention to the use of a remedy that as nearly approaches a specific for the disease as possible. Hoping and believing that you will find as much satisfaction in its use as I have done, I commend it to your favorable consideration.

A NEW APPARATUS FOR NEBULIZING NON-VOLATILE MEDICAMENTS

AND FOR ADMINISTERING THE SAME THROUGH IMPACTED AIR, AS A MEDIUM, BY THE PROCESS OF FORCED DILATATION, INSTEAD OF BY INHALATION, SPRAY, OR DOUCHE.

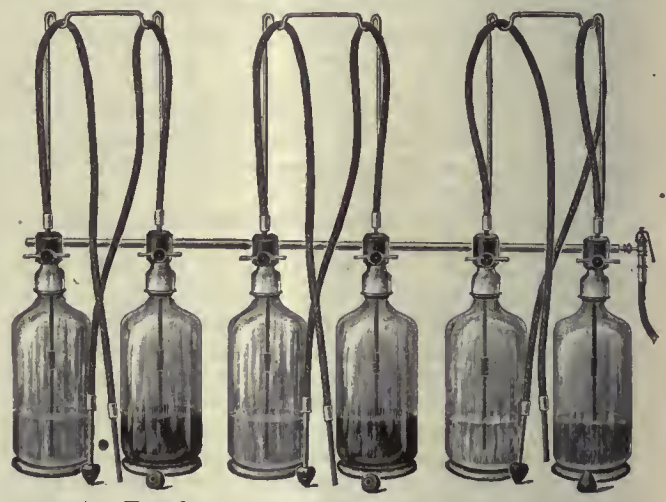
BY GEORGE F. HAWLEY, M.D.

Formerly House Surgeon at the Throat and Chest Hospital, Golden Square, London; Assistant Surgeon to the Ear Department of the London Hospital; late Assistant Surgeon to the Illinois Eye and Ear Infirmary, Chicago; Attending Physician Railway Brotherhood Hospital; Member Chicago Medical Society; Professor of the Hygiene and Anatomy of the Throat, Chicago College of Vocal and Instrumental Art.

The object of this paper is to describe an apparatus for preparing and administering nebulous medicaments by a process of forced dilatation, the basis of which is the discovery that the lips will act as a safety valve, and that, into any tube, cavity or air cell into which air can be forced by a high pressure, the nebulous medicament prepared by this apparatus can be forced with absolute safety, thereby enabling the physician to use agents that are capable of preventing or controlling diseases.

My attention was first called to this apparatus and process by an expert in the chemical and mechanical phenomena of pneumatics. I am using the apparatus as auxiliary to the regular medical and surgical treatment of the ears, nose, throat, and chest, with decided advantage to myself, and with most gratifying results to my patients.

The apparatus as shown in the illustration consists of a number of strong flint glass bottles, one for each medicament; adapted to be used in connection with any compressed air receiver. The valve located at the top of each bottle is provided with inlet and outlet ports in multiple, both ports being simultaneously opened or closed by turning the faucet. The inlet port of each bottle is connected with the same source of supply, namely, a compressed air receiver, and also with the vulcanite tube that descends into the medicated solution in the bottle. On turning the faucet the impacted air passes from the receiver through the inlet port down the vulcanite tube, through an ingeniously constructed device, and by eduction draws the medicated solution up into the tube and forces it out against the interior wall of the bottle, thus producing an impacted, nebulous medi-



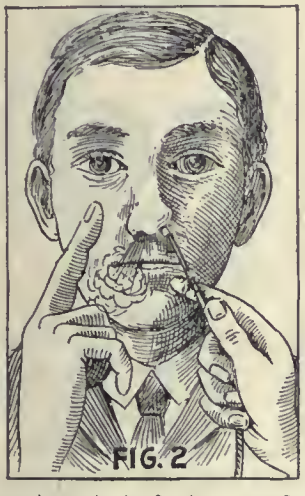
cament. To the outlet port is attached a silk covered, flexible tube, the free end of which terminates in a vulcanite mouthpiece adapted to become sealed when the lips are tightly compressed around it, also an adjustable nozzle which becomes sealed when pressed into the nostril. Through these tubes the impacted-medicinal-nebula is forced into all the air passages, cavities and cells through and from the bottle selected; by a process of forcible dilatation, —a process that is rational, and capable of producing results that can not be effected by the use of any apparatus adapted to administer by inhalation, spray or douche.

The process of administering consists of: 1, compressing the air or gas into a suitable receiver to a pressure of from 20 to 100 pounds to the square inch or to a density sufficiently great to rapidly fill and forcibly dilate the air cells, the bronchi, the nasal cavities and the Eustachian canals by the expansive force of its own elasticity; 2, forming a communication through suitable tubing to be placed in the mouth or nose in such a manner as to allow the excess of pressure to escape from the mouth. The bottles containing the medicated solutions, being located intermediate and through which the compressed air passes at a uniform pressure with that in

the receiver, or nearly so, and conveys the medicinal nebula to all the air passages, cavities and cells.

To dilate the Eustachian tubes and to medicate the middle ear. The usual method of using the apparatus is as follows: Having adjusted the nozzle to the delivery tube, press it snugly into one nostril, the other being closed by the patient's finger, the mouth being open and the tongue thrust out as shown in Fig. 1. Turn the faucet and allow the impacted nebula to flow freely. The soft palate being pressed forcibly against the posterior wall of the pharynx will cause an undulation in the current of nebula by a valvular action of the uvula velum and appendages, which will be thrown into rapid vibration. The undulations of the impacted nebula will render the mouth of the Eustachian tube more patent and act as a massage on the diseased tissues of the middle ear, equalizing the circulation and tending to break up adhesion of the ossicles by causing them also to vibrate. To produce these vibrations it will be necessary in rare cases, especially where there is marked obstruction in the Eustachian tube to have a pressure in the receiver as high as 70 to 100 pounds to the square inch. With this shunt current, the mouth being open, no matter how high the pressure, it is impossible to rupture the drumhead, or to injure the ears.


FIG. 1


FIG. 2

A pressure, however, of from twenty to forty pounds will be sufficient for a large majority of cases.

Stimulation by appropriate medicaments in connection with mechanical manipulation, by increasing nutrition restores elasticity and vitality to the atrophied and paralyzed tissue. This process of administering impacted medicinal nebula by a shunt current, offers a rational means by which such stimulation, manipulation, and massage can be accomplished without any liability to unfavorable consequences.

In my practice, however, in massaging the diseased, paralyzed, atrophied or hypertrophied tissue and in dilating the Eustachian tubes and in medicating and breaking up adhesions in the middle ear, the best results have been obtained by using a pressure of from thirty to fifty pounds. The lips of the patient being tightly compressed, the nozzle is adjusted snugly into one nostril, the other being open as shown in Fig. 2. The soft palate being pressed against the posterior wall of the pharynx, turn the faucet and allow the nebulous medicament to flow, the opposite nostril being closed and opened rapidly by alternately pressing and relieving pressure on the opposite nares by the finger of the patient. This should be continued for from one to five minutes, or long enough to cause from 20 to 100 impulses. Each impulse should dilate the Eustachian tubes and convey the medicament to the middle ear. It will also manipulate and massage the ossicles and the adjacent and surrounding diseased tissues thoroughly.

The rapid opening and closing of the nostril gives distinct impulses to the current of impacted nebula as it is forced through the Eustachian tubes, and causes it to act upon the diseased middle ear in the manner as before described. The medication of the middle ear by this method is perfect, as into any tube or cavity into which air can be forced, the medicament from this apparatus will enter in the form of impacted nebula. Not being restricted to the volatiles we can use any soluble medicament and in any strength desired. We therefore have the means of demonstrating the value of medicating the middle ear, in properly selected cases.

Impaired hearing due to congestion, inflammation, or hypertrophy of the mucous membrane, paresis, or occlusion of the Eustachian canals is a prevalent affliction. Improvement generally follows regular treatment, but the number of relapses are out of proportion to the number of recoveries. Why? There surely must be something radically wrong with either the means used or with the methods of using them, or else the results would be more permanent and satisfactory. After repeated failures to obtain satisfactory results many specialists have ceased attempting to medicate the middle ear, except with volatile vapors. The failures are due not so much to the medicament employed as to the manner in which they are administered. Liquid sprays or vaselin oils can not be forced into the middle ear by any ordinary atomizer, used either with compressed air or by hand. The spray is too coarse to enter far into the Eustachian tubes, and the injection of liquids by means of the catheter is more apt to aggravate than lessen the trouble. Vapors from volatile medicaments can be advantageously used in a few well selected cases. But nebula, impacted from non-volatile medicaments and administered by forced dilatation with gentle but rapid vibration, offers the only safe and efficient method for medicating and massaging the middle ear.

In this connection it may also be noted that in the most carefully selected cases for dilatation with the Pulitzer air bag or for dilatation and massage by the usual methods of using a compressed air apparatus, an almost immediate amelioration is often immediately or remotely followed by an aggravation of symptoms. This is evidently caused by the violence of the impulse which suddenly dilates the Eustachian tubes and inflates the middle ear. A shock is produced by the violence of the assault that prostrates the weakened and impoverished tissues. Instead of simply breaking up the adhesions and promoting the physiologic vibrations of the ossicles, the pressure on the contents of the labyrinth is abnormally increased, thereby causing pain, vertigo, and sometimes hemorrhage, and even, occasionally rupture of the drumhead. As an agent for massage, the assaults are too severe. In many cases, instead of equalizing the circulation it causes increased nervous irritation, congestion or inflammation.

The specialist in aural surgery may by the skilful use of an apparatus and process for forced dila-

tation and mild but rapid vibrations, more frequently avoid the annoyance of such accidents, as even its routine use with proper medicaments can never result in an injury to the ears, nor aggravate the symptoms.

To dilate and medicate the nasal and post-nasal cavities: Press the nozzle into one nostril, the other being open, the lips being closed as in Fig. 3. Turn the faucet, no matter how much the passages may be plugged, closed or obstructed by secretion, polypi or hypertrophied membrane, the impacted nebula will be forced through and the nasal and post-nasal cavities will be thoroughly medicated.

To medicate the mucous membrane of the pharynx, tonsils, follicles and post-nasal cavities: Insert the tube well into the mouth, the lips being compressed around it, the nostrils being left open as in Fig. 4; turn the faucet, exhale through the nose, and the impacted nebula will thoroughly medicate all the surfaces. I deem it almost useless to say that this can not be so satisfactorily accomplished by the usual methods.

The throat, the smaller bronchi, and the air cells of the lungs can be dilated and thoroughly medicated, either through the nose or mouth. If it be desirable to administer through the nose, press the nozzle into


FIG. 3.


FIG. 4.

one nostril, close the opposite nostril and compress the lips as in Fig. 5, or if it be desirable to administer through the mouth, having removed the nozzle, place the tube in the mouth, the patient compressing the lips tightly around the vulcanite; the nose being closed by the thumb and fingers as in Fig 6. In either case having first expelled the air from the lungs by a forced expiration, turn the faucet, and allow the impacted nebula to flow, the patient co-operating by a passive inspiratory effort as in the act of taking a long, full, or deep breath, allowing the chest to expand until the internal pressure becomes great enough to force the lips apart and the impacted air to escape explosively.

The explosive escape of the compressed air is an evidence of a thorough dilatation. It also assists to detach, dislodge and expel from the air cells, the bronchi, the throat and nose, such deposits as result from excessive secretion or other morbid processes, together with a per cent. of the residual air.

It should be borne in mind that this is not inhalation but dilatation. The difference between inhalation and dilatation is, that inhalation like breathing, is the act of the respiratory organs requiring, however, a more active inspiratory effort, while dilatation is carried out by the operation of the apparatus, together with a mild or passive inspiratory coöperation, and the mechanical force of impacted air. Consequently, a reliable automatic safety valve is necessary to insure the patient against any liability to injury from an excess of pressure. For this purpose no other device than the lips of the patient is required. The lips will act in any condition of health or disease as a safety valve, as it is impossible to retain a pressure sufficiently high by compressing the lips to cause an injury to the most delicate or the most robust person. It is equally impossible to rupture vessels, to lacerate or to injure the most delicate lung tissue because the pressure is equal on all surfaces. As an evidence of absolute safety, clinical experience has shown that forced dilatations will check passive hemorrhage; the pressure forcing the blood back, the medicament astringing and healing the surfaces. Also that forced dilatation is well borne by the very feeble, to whom it is an exhilarating tonic, affording all the benefits derived from the most labored respiratory efforts and lung gymnastics without fatiguing exertion.

Believing it necessary to emphasize the importance of thoroughly dilating the lung, I therefore repeat


FIG. 5.


FIG. 6.

that the patient must coöperate by tightly compressing the lips, expanding the chest and allowing the impacted nebula to flow into the lungs until the internal pressure forces the lips apart, allowing the impacted air to escape explosively.

The discovery that the compressed lips will act as a reliable automatic safety valve, rendering it absolutely safe to dilate to their utmost capacity the smaller bronchi and air cells of the lungs by the expansive force of highly condensed elastic fluid; and that non-volatile medicaments in appreciable quantities can thus be conveyed and deposited by impacted nebula into any tube, cell or cavity, into which air can be forced, does as an experimental basis open a new field and marks a new era in the treatment of the respiratory organs. This may engage the attention of clinical investigators and observers in the medical profession at an early date, and lead to the cure or control of tubercular consumption. This is the more probable in view of the well-known fact that highly condensed air by rapid expansion lowers the temperature and desiccates the surrounding tissue, absorbing therefrom heat and moisture; conditions necessary for the vigorous activity and rapid propagation of the bacilli and other mi-

croörganisms, without which they become inert and sterile through attenuation.

By comparing this with other apparatuses and methods, its value will become more apparent. Dr. Waldenberg's apparatus, with improvements and modifications by Prof. Solis-Cohen, and others, is used to moderately condense or rarefy the air preparatory to inhaling it. The expansion of the chest is brought about by labored respiratory effort and lung gymnastics. Forced dilatation is not an element or part of the method. The only claim is an imitation by mechanical means, of the atmospheric condition met with in a change of residence from valley to mountain, or from mountain top to valley. In the published descriptions of the apparatus and the method of using, no reference is made to forced dilatation nor to the explosive expulsion from the bronchi or air cells of the accumulation and deposits from morbid processes, and of the residual air; nor of the absorption of excessive heat or moisture, nor of medication beyond that accomplished with any good inhaler.

The pneumatic cabinet offers the only other means for dilating the smaller bronchi and the air cells of the lungs. This is accomplished by the use of the cabinet but not by the Waldenberg or any similar apparatus. Although dilatation by the cabinet may be complete, the medication is not complete, from the fact that exhalation is but partial, due to the inability of the patient to thoroughly exhale against the pressure. Nor do we obtain by its use the benefits derived from the absorption of heat and moisture, and the explosive expulsion of morbid deposits and a percentage of the residual air. Consequently, the bacilli are not so thoroughly attenuated and the capacity of the lungs is not so greatly increased by the use of the cabinet as by forced dilatation with impacted air; nor is the physiologic function in the processes of osmose so effectively promoted.

The advantages of forced dilatation with impacted air in the treatment of the respiratory organs is patent, for the reasons that the physician after selecting the medicament, either according to the law of natural selection, or for its remedial or physiologic action, can dispatch it in the form of impacted nebula along lines, the obstructions of which would offer an impassable barrier to inhalation. At the same time the benefits resulting from the absorption of heat and moisture, the attenuation of the bacilli, the checking of passive hemorrhage, the expulsion of morbid product and a moiety of the residual air, together with an increase in the breathing capacity, the restoration of the physiologic function in osmose and a more perfect oxidation in the processes of nutrition and assimilation, can be obtained through the mechanical elasticity of the impacted nebula.

The process of preparing and administering nebulous medicaments from this apparatus into the air passages, cells and cavities by forced dilatation is rational. The mucous membrane throughout being upon the stretch with all its convolutions unfolded, as a result of the expansive force of the impacted air, is in the most favorable condition for the reception and absorption of the infinitesimal particles of medicament that are conveyed and deposited by the impacted nebula. Thus maximum effects result from a minimum of medicament.

Among the many advantages may be mentioned the fact, that an increased amount of air is breathed after forced dilatation, and that, too, without conscious effort, which must result in increased oxidation, and therefore must aid in the chemical and physiologic processes of assimilation and nutrition. The improvements in the general health of those treated is an evidence of this, the improvements being so marked as to be apparent to even a casual observer. Hence the claim put forth to the effect that it is equally well adapted to the treatment of other diseases as well as the ears, nose, throat and chest, seems to have a foundation in fact. The capabilities of the apparatus and process of administering are therefore, to say the least, worthy of candid consideration by specialists who limit their practice to other distinct branches as well as by the general practitioner.

My apparatus was manufactured by the Owens Brass and Copper Works of this city, but apparatus can be procured through any dealer in surgical instruments and physicians' supplies.

It was my intention to report the results from the use of this apparatus, but the length of this paper has already far exceeded the usual limit. Therefore the reports of cases must be deferred.

Columbus Memorial Building.

SOCIETY PROCEEDINGS.

The Medical Society of the State of Tennessee.

Held at Memphis, Tenn., April 10 and 11, 1894.

FIRST DAY—MORNING SESSION.

After the Address of Welcome, the reports of the Secretary, Treasurer and Publication Committee were received, and the Committee on Corporation was continued.

Dr. G. C. Savage, of Nashville, asked the indorsement by the Society of a bill to be presented before the State Legislature, looking to the prevention of blindness by the early recognition and treatment of ophthalmia neonatorum. This was unanimously granted after a thorough discussion.

In reference to the proposed change in the Code of Ethics, it was

Resolved, That it is the sense of this Society that the Code of Ethics is good enough for us.

FIRST DAY—AFTERNOON SESSION.

Upon motion the privileges of the floor were granted Drs. Weisynger and McNeal, of Mississippi.

DR. D. E. NELSON, of Chattanooga, read a paper on "Longevity." (See JOURNAL, April 28, 1894.)

DISCUSSION.

DR. D. D. SAUNDERS, Memphis, thought a man should live one hundred and five years, which is five times twenty-one years, the length of his maturity. The people in the Arctic regions wash their children in urine, and there are old people among them, notwithstanding their hardships and bad hygiene. It is also true that some hard drinkers live to an old age. An acquaintance, "Uncle Billy," aged 90 years, a massive picture of health, strength and power, was an old toper. When asked how many were living who commenced drinking with him twenty years ago, he replied: "Not one." There is the lesson, temperance; temperance in all things is the secret of health, strength, success, and the secret of longevity.

DR. WATERFIELD, Memphis, suggested that physicians should, as far as possible, make object lessons of themselves, as had the previous speaker. There is no controversy in regard to the importance of temperance, but would it not be well to go a little farther and ask why it is that a temperate life in diet, drink, exercise, in psychological action, in everything, is conducive to longevity, and why intemperance in these things is deteriorating? If we would let nothing enter the economy that is not constructive, and will not create force, and if we, as physicians, would teach

the people that whatever else passes the lips is destructive, life would be very greatly prolonged.

Dr. I. W. Perkins, of Henderson read a paper on

FECAL IMPACTION WITH TYPHLITIS.

The paper was the report of a case he had been called to treat for what was supposed to be colic. The patient had been given the usual routine of purgatives, which had been retained but a short time. Upon examination the tenderest spot was found over the ilio-cecal valve. The patient had vomited for twelve or thirteen hours; temperature and pulse high. In ten hours he was again seen, and he had vomited everything taken on his stomach in the meantime. Various things were tried to quiet his stomach and relieve the pain, but all to no purpose. Finally, after a hypodermic injection of morphia, he was given a rectal injection, and after one hour the trouble was all over. The principal point is the position of the last injection and the manner of giving it, using the morphin hypodermatically five minutes before the rectal injection.

(Discussion postponed.)

Dr. W. S. Scott, Dickson, read a paper on

CHRONIC ENDO-CORPOREAL METRITIS.

The author is of the opinion that chronic endo-corporeal metritis is found as a distinct disease, and explains why we have so many cases of rebellious leucorrhea, dysmenorrhea and sterility. The uterus is seldom found in its normal position between the bladder and the rectum. Normally it is antiflexed. The cause or causes of endo-corporeal metritis are numerous. In the multipara it is most frequently caused by subinvolution. Strumous diathesis, imperfect general nutrition, overtaxation of the system, tuberculosis, frequent parturition, prolonged nervous depression, displacement of the uterus, are some of the predisposing causes. Some of the exciting causes are cervical endometritis, chronic or acute general metritis, pelvic peritonitis, especially from chronic abuse of sexual intercourse, abortion, retained menstrual flow, exposure during and checking the menstrual flow, etc. The symptoms naturally are of two kinds, local and constitutional. The constitutional symptoms are made manifest by the nervous system and the digestive organs. While the latter may be wanting, the former never is. The local symptoms are to be relied upon mostly in making a diagnosis. We almost invariably find pain on pressure over the body of the uterus, enlargement of the organ and leucorrhea. While the disease is not incurable, and we find very few cases of death from it, yet it is a troublesome malady and hard to overcome. If we can succeed in removing all the causes, we can expect a favorable prognosis, but in cases of gonorrheal origin or of purulent catarrh, in which the general health is bad, the prognosis is unfavorable. It is best to use intrauterine treatment freely but cautiously. The therapeutics employed range from the blandest anodynes to the actual cautery. We should be governed by the indication of each case. Sodium chlorid should be preferred in most cases as a vaginal douche as it is purifying in character, convenient and safe. We can not expect improvement until we have depleted the pelvic circulation, and nothing serves so well as a gallon of water at 80 or 125 degrees F. Pessaries are but little help. To deplete the engorged uterus, the local application of glycerin is valuable.

Case 1.—Miss C. M. developed endo-corporeal metritis when 14 years of age. When first seen she had not walked alone for three years. She was a nervous wreck, no appetite, poor in flesh, no desire for company, and had suffered pain almost incessantly for two years. By digital examination the external labias were found to be ulcerated and tender, and the vaginal canal was so much ulcerated that it was not practicable to examine the uterus for three weeks. When examined the uterus was lacerated, dilated and undulated, and from it passed a very offensive muco-purulent discharge. It was curretted with a dull instrument, washed out with a hot carbolized solution, Churchill's iodin freely applied to the entire uterine cavity, and pinus canadenses applied to the external os, and left for twelve hours, and then for three days the sodium chlorid douche was used three times a day. As a tonic she was given the tincture of the chlorid of iron, tincture of nux vomica, fluid extract of ergot, and the fluid extract of black haw. For the first ten days ammonia was administered at bedtime. After two months she could with little inconvenience walk unsupported across the room, and at the expiration of the fourth month she claimed to be well. After two years she had suffered no relapse. Six months later she married, and twelve months later was confined, and died of puerperal septicemia.

Case 2.—Mrs. M. C. D., multipara, age 34, had suffered from endo-corporeal metritis for three years, during which time she was unable to attend to her domestic affairs. Examination showed cephalalgia of the crown, constant pain in the loins and pelvis, vaginal tenesmus, bowels constipated, menstrual flux irregular, painful and profuse, appetite poor, and but little assimilation of food, general relaxed muscular system and inability to sleep. The os was dilated and undulated, and from it poured a profuse leucorrhea, tenacious and tinged with blood. The uterus was enlarged, retroflexed and tender. With the sound the trouble was found to involve almost the whole endometrium. After an intrauterine injection of carbolic acid solution she was curretted and Churchill's iodin applied to the entire uterine cavity. Glycerin and pinus canadenses on lint were applied to the external os, and allowed to remain twelve hours, when it was removed and a sodium chlorid douche used three times a day for three days. Then iodin and carbolic acid were applied thoroughly to the endometrium, and glycerin and pinus canadenses were used as before, the same being repeated every three days. The constitutional treatment included strychnia, ferrum, lactucarium, ergot, phosphorus and black haw. As she had become somewhat of an opium eater, the fluid extract of cocoa was given to overcome it. After three weeks the intrauterine treatment was discontinued, but the local applications to the os, and the douches were continued three weeks, then the douches and a constitutional treatment for two months, when all catarrhal discharge had ceased, the appetite had returned, and there was a general constitutional improvement. The prognosis in the case as to a complete cure was negative, but as to permanent relief positive, and after eighteen months she conceived and passed through confinement without unusual trouble.

DISCUSSION.

Dr. Richard Douglas.—The endometrium, being destitute of any claims to mucous membrane, is peculiarly susceptible to parenchymatous inflammation, and there is likely more or less metritis in all these cases. That this disease occurs separate and apart from cervical inflammation we must admit, but it usually occurs associated with cervical inflammation. There is sepsis in all these cases, caused by some accident during parturition, some lesion or some remains of placenta or blood clot, incomplete absorption, and last but not least the tinkering gynecologist. We can not treat it without constitutional methods, but we ought to get along with fewer drugs than the essayist mentioned, although they are all useful. Rest is essential, and a life of continence is absolutely necessary. The use of hot water does not more than clean the vagina. The topical application of coagulants to the body of the uterus favors sepsis and extends the disease. The disease resides in the glands, and until the mouths of these are opened, until the endometrium is removed, we can not accomplish much. We must look upon it as a foul stinking sac, and clean it as best we can. We should dilate the uterus, curette with a *sharp* instrument, irrigate well and pack with gauze, remove the packing in from one to five days, repack, and treat the surface of the uterus as if it were an ulcer. The cavity of the uterus should be treated upon surgical principles. It is a question if the first case ever recovered from the endometritis. The other was a beautiful recovery.

Dr. J. S. Cain, Nashville.—Septic and specific troubles probably cause the majority of cases, but many of them grow out of general causes. In those cases in which we find degenerated fungosities, the sharp curette should be used. The aseptic and antiseptic part of the treatment was carefully carried out. The dull curette should be considered less dangerous than the sharp one, because it does not go so deep.

Dr. T. J. Happel, Trenton, read a paper on

APPENDICITIS.

Until lately it has been agreed by the surgical world that the knife was the only resort, when there were reasonable grounds upon which to make a diagnosis of appendicitis. Now the surgical world is at sea, and the general practitioner begins to realize that this disease has not entirely departed from his domain.

The Doctor then reported eight cases of typhlitis and appendicitis. In one case death followed within thirty-six hours after the onset of the attack, being apparently due to shock from perforation of the appendix and the development of general peritonitis. In three of the cases pus developed, and was discovered in two of them with the hypodermic needle; but was discharged per rectum in all three of the cases, with rapid recovery in each. In one case only was abdominal section made, and in this case at least one gallon

of pus was discharged. Three of the cases were males, five females; six were white, and two colored. The report served to show that not all cases belong to the domain of surgery, and in none of the six cases that recovered could better results have been gotten with the knife than were obtained by the expectant plan of treatment. However, the knife should be used in proper cases, and where the presence of pus can be proven beyond question, it is not safe to delay operation, although as shown in my own cases, spontaneous cure may even then take place. If pus is present, and the patient refuses to allow the knife to be used, the pus should be removed and the cavity washed out by means of a large sized aspirator needle. It is surprising how much relief often follows the use of the aspirator, even when only a small amount of pus, or even exudate is removed, and how often resolution follows this treatment.

A patient with appendicitis is in a dangerous condition, but before the formation of pus, before ulceration or perforation has taken place, or the appendix has become gangrenous, or has sloughed; the danger lies in the future. During this period we are warranted in resorting to medicinal measures alone, and these measures should be active vigorous ones. I would advise the use of morphin hypodermatically, in such quantities as may be necessary for the relief of pain; a mustard plaster should be applied over the seat of the pain, and this should be followed by hot turpentine stupes, and these by the hot water bottle. Although ice is recommended as a local application, I prefer the hot ones. Sulphate of magnesia should be given, half ounce doses, repeated every three hours until free and full evacuations are obtained and the bowel is completely emptied. In cases of catarrhal appendicitis these measures will usually succeed and resolution will speedily take place. The sulphate of magnesia acts not only as a purgative but also as a local depletant. By its action the blood vessels of the cecum and adjacent parts are unloaded, and resolution much aided. Should these measures fail to give prompt relief, the aid of the surgeon's knife is to be invoked. Should the attack be due to an enterolith or any other body dropping into the appendix, the probabilities are very strongly in favor of the knife.

DISCUSSION.

Dr. Cain believed the great majority of cases originate from fecal obstructions in the colon. These impactions occur more frequently in the ascending colon, where the matter has to overcome the force of gravitation to a certain extent. After dropping into the cecum, the matter remains there for awhile as a fluid, when it is forced out, and it then takes the direction of least resistance, and sometimes part of it is forced into the small opening of the appendix.

Dr. Douglas—It is impossible to draw the line when all cases of appendicitis come entirely under the domain of surgery. We have different varieties of appendicitis, as catarrhal or recurring appendicitis, suppurative appendicitis, adhesive in character, slow in progress and oftentimes terminating favorably, and we have acute perforative appendicitis, that causes death before you can do aught to save your patient. In the first variety the pain is diffused over the abdomen, and the patient is frequently relieved by purgatives. The symptoms are only concealed by morphin hypodermatically. In the second variety, delay is dangerous. The mythical grape seed does not enter into the cause so much as people generally believe, and in a number of operations only once have I found a seed, although I have frequently found impaction. Feces will always be found in the appendix upon postmortem examination of these cases. I have seen a number of cases with no tumor, and they are the dangerous cases. We should not rely on the temperature. I have removed ounces of pus with a temperature of 99 degrees. If ice applications for twenty-four hours do not cause the temperature to yield or show symptoms of improvement we should operate. The operation is simple if undertaken early, and delay is dangerous.

Dr. Eve, Nashville, thought the essayist very fortunate, and agreed with Dr. Douglas. While believing in conservative surgery, conservatism must not be pushed too far, for there is a point where the physicians should stop and the surgeons begin. These cases are frequently allowed to go too far, and an operation is not a success because of shock.

Dr. Saunders—Conservatism here means overwaiting. I do not think any man is justified in waiting more than forty-eight hours. I have never had a case upon which I operated too soon. There is comparatively no risk in the operation, and if you wait you take the life of the patient n your own hands. When you operate, remove the appendix, if it is not already removed.

Dr. Robert Pillow, Columbia.—I believe there is a happy medium. I have operated on six cases at home without a failure. One of them had probably fifteen recurring attacks previous to operation. It is true in some cases it does go away without operation, and does not return. This seems to have been the case in my own person. Nearly eight years ago I had an attack which has not recurred. I treated it with saline purgatives.

Dr. S. S. Crockett, Nashville, was pleased with the remarks of the last speaker. The medical fraternity is made up of two classes; one is chasing the victim with the knife, and the other is letting them die of neglect. Dr. Pillow and Dr. Douglas have both had it and have both gotten well without operation, and there are a number of similar cases, but some of them do die. In the perforative and suppurative varieties an operation is imperative. But, because a patient has an appendicitis, we should not subject him to an operation without a trial. It is remarkable how easily these patients recover from an early operation. We should operate when we are driven to it.

Dr. B. L. Brancii, Rossville, had seen four cases recover after conservative treatment. From one of them a gallon and a half of pus had been aspirated.

Dr. William Krauss, Memphis, had operated successfully on two cases of supposed appendicitis, and in both cases the appendix was perfectly healthy. In one, the cecum was ulcerated through, and both had general peritonitis. He raised the question, whether those who do a great deal of operating for appendicitis, always find appendicitis.

Dr. T. J. Crofford, Memphis, believed the appendix a murderous sort of thing that should be cut out whenever it gets to cutting up any of its gyrations. If the patient is not comfortable after administration of salts, I advise an operation, and I have never seen a case die when operated upon early. You do not know whether they are perforative or not until you wait. He reported several cases cured by operation.

Dr. T. R. Moss, Dyersburg, thought an operation usually demanded. With regard to the simplicity of the operation, if he had appendicitis he would go to the best surgeon he could get.

Dr. Erskine had never operated, but had successfully treated a good many cases, and related a number of them. Several got well after the formation and breaking of an abscess. He did not believe in never operating, but is in favor of a very wise conservative line of treatment.

Dr. A. J. Swaney, Gallatin, said the great mistake in this operation is the delay. Besides, it is said that the man who gets well without an operation has just time to make his will. It would be interesting to know how many cases have been lost by conservatism and how many by too early operation.

Dr. Gassell reported a fatal case, which had been treated on the expectant plan.

Dr. Happel, in closing, remarked that some have said there will be recurrence of those cases not operated upon, and that they do not get well. One patient I reported has never experienced any relapse in fifteen years. If one-half of these cases will get well without operation, we should give them an opportunity to do so. We should keep them under medicinal treatment a reasonable length of time, and I would fix this at sixty hours.

First Day—Evening Session.

Dr. N. T. Dulaney, the President, delivered an address on "Then and Now, or Forty Years in the Field." The paper was a review of the advances and changes in the science of medicine during the forty years he had been in practice.

Dr. Richard Douglas, of Nashville, gave as his subject

EXTRA-UTERINE PREGNANCY.

A report of three cases, in each of which operation was followed by recovery. These were supplemented with six others, five of which were operated upon, with one death. The unfortunate case was an extra-peritoneal rupture of some three weeks standing, and the operation was undertaken under most adverse circumstances. The patient died the third day from exhaustion. The sixth case in the series was a postmortem. The patient was taken suddenly while shopping, and died before an operation could be performed. In seven out of nine cases reported, the left tube was the seat of the vicarious growth. In eight cases there was a history of antecedent pelvic inflammation, and in four cases there was reason to believe that gonorrhea was the cause. Pain was a conspicuous symptom. The cases that abound in literature show that primary intraperitoneal ruptures are comparatively infrequent, compared with intraligamentous rupture.

However, three of these cases were intraperitoneal rupture, and six of the downward variety. In cases of intraperitoneal rupture, we should without delay open the abdomen and grasp the proximal side of the tube. This arrests hemorrhage. Then transfuse the patient with a saline solution, bring up the blood pressure and complete the operation by removal of the tube. In cases of extra-peritoneal rupture, prudence recommends waiting twenty-four to thirty-six hours and preparing the patient in the usual way for section. The changes that take place in the tube under the influence of ectopic gestation leave it as a dangerous and useless appendage. and its removal is required.

THE MANAGEMENT OF ECTOPIC OESTATION DURING THE LATTER HALF OF PREGNANCY.

Was given by DR. R. B. MAURY, Memphis. In connection with a report, he presented two specimens. The first specimen had been pronounced an extrauterine pregnancy by Dr. Allen J. Smith, and had been published. The second specimen was presented because of the circumstances connected with it. The rupture took place at the sixth week, and the operation was performed the eighth week, two weeks after the rupture. The gestation sac had been completely detached from the side of the uterus, and was lifted out of the abdominal cavity with the coagulum. An interesting question is what the peritoneum could have done with the detached gestation sac if an operation had not been performed. The coagulæ with the gestation sac were completely cut off from the general peritoneal cavity by intestinal adhesions. From the statistics it is evident these cases can not be wisely left to nature, and we should operate for ectopic gestation as soon as the condition is recognized.

DISCUSSION.

DR. T. J. CROFFORD, Memphis, presented a gestation sac, still in the tube, successfully removed from a case of ruptured pregnancy. The operation lasted twenty minutes. The omentum reached down over one of the largest torn places in the tube, beautifully illustrating the efforts of nature to control the hemorrhage. The history of the case was interesting in that the patient was a young woman, married little over a year; there was a temperature of 100 5 at the time of the operation, and in the abdomen there were about two gallons of blood and fluid. He considered the papers very commendable, but did not think the patient ought to be kept on the operating table too long. Dr. Maury's statistics run back ten or fifteen years, whereas the best results have been obtained in the last few years.

DR. W. W. TAYLOR, Memphis, claimed to be the first person in Tennessee to diagnose ectopic gestation previous to rupture. The case occurred in 1887.

DR. J. S. CAIN remarked that these cases first come under the care of the general practitioner, who should be able to diagnose them, and he asked how the previous speaker made a diagnosis before rupture.

DR. TAYLOR—There was no sign characteristic of tubal pregnancy, but the patient was sterile for ten years. She had missed her periods in December and January, showed the morning sickness; paroxysmal pains; there was a slight bloody discharge from the uterus, a tumor to one side of the uterus, and some early breast changes.

DR. CAIN claimed there is no crucial test for ectopic gestation at this period. However, he believed the casting off of the decidual membranes is sure evidence of ectopic pregnancy.

DR. DOUGLAS had never diagnosed a case of ectopic gestation before rupture.

DR. MAURY had been called to see the case, and said that Dr. Taylor was correct. He had been slow in recognizing the nature of the case and apologized for it.

(To be continued.)

Association of the Military Surgeons of the United States.

Fourth Annual Meeting—Report of Proceedings.

The Association of Military Surgeons of the United States held its fourth annual meeting May 1–4, 1894, in Washington, D. C. The meeting was opened by President Cleveland at 10 A.M., in the National Theater. The interior was brilliantly illuminated, the Committee of Arrangements having made a free use of the National colors for this purpose. Almost 250 members were present, all in uniform—in accordance with the requirements of the program. The house was well filled with interested spectators, many no doubt having been induced to enter by the unusual military display. It may safely be asserted that never before in this country has the opening meeting of a medical association presented so brilliant an appearance. Washington's famous Marine Band added to the military character of the scene.

Surgeon-General George Henderson, of the District of Columbia National Guard, Chairman of the Committee of Arrangements, called the meeting to order, and after prayer by the Rev. T. S. Hamlin, of the Church of the Covenant, President Cleveland opened the proceedings with a few appropriate remarks. He said that as Governor of the State of New York he had taken an interest in its National Guard, and since then he had kept up and extended this interest, as it is upon the Guard that the country must depend in a time of need. He referred to the necessity for coöperation between the National Guards of the different States, and between them and the Army of the United States.

District Commissioner Ross, in an address of welcome, referred to the benefits derived from organization and the advantage to be had by annual meetings for the comparing of professional observations among those having similar responsibilities, similar hopes of honorable preferment, and the same ambition to serve well and loyally the Government established by the fathers of the Republic. He then touched on the natural relation of Washington to the meetings of National associations; and the Coxey Good Roads Association coming into his mind, inasmuch as its members were then marching into the city along Fourteenth Street, he remarked that while citizens may peaceably and reasonably assemble at the National Capital, no man who comprehends our system of government needs to be convinced that any attempt to compel action on the part of any of the three great coördinate branches of the Government by menace or threat, or show of physical force, would be not only unlawful, substituting the rule of the mob for that of the people, but would be an insult to the people of the United States in so menacing or threatening its agents. Dr. S. C. Busey, President of the Medical Society of the District of Columbia, and General Ordway, commanding the National Guard of the District, followed with words of welcome.

The President of the Association, DR. SENN, of Chicago, Colonel and Surgeon-General Illinois National Guard, devoted his address to the consideration of

ABDOMINAL SURGERY ON THE BATTLE FIELD.

He referred to the probable influence of the new small caliber and long range rifles on the character of wounds, which would be more numerous and dangerous than with the old projectiles; but to do justice to this address a full report would have to be penned.

As the members crossed Pennsylvania Avenue to reach the office of the Registrar, they had an opportunity of viewing the long-heralded march of the Coxey army on the Capitol. Quite a number, attracted by curiosity, reviewed the "army," and no doubt created in Mr. Coxey's mind the idea that the military of the United States was out in strong force.

The working sessions of the Association were held in the lecture hall of the National Museum, Smithsonian Institute grounds. The afternoon of the first day was devoted to a "Symposium" on the Transportation of Sick and Wounded, which was opened by Major Charles Smart, U. S. Army, with an admirable review of the history and extent of the subject, which was published in the JOURNAL of May 5. Major Havard, U. S. Army, then described the requirements of a good litter: 1, it must be one and the same for all purposes, that is, the stretcher on which the wounded man is carried from the field must be such that it will fit into the ambulance wagon; 2, it must admit of quick and easy opening and closing. The traverses of our regulation stretcher are not yet perfect; 3, the handles must be fixed and immovable, that is, they must be simply the ends of the poles and in no way jointed or detachable; 4, it should have legs—short so as not to be in the way when the stretcher is closed or strapped, and fixed, as folding legs are a constant source of trouble to the bearers and danger to the patient besides complicating the manual and interfering with the loading of the ambulance wagon; 5, it should be light, strong and simple in construction. Its weight, should, if possible, be reduced to sixteen pounds. Aluminum may hereafter give good results. Major Havard condemned all attempts at procuring lightness at the expense of other essential qualities; 6, the sling should be a part of the bearer's equipment, not of the stretcher. Our regulation

stretcher is satisfactory in most respects except weight; it weighs, with its slings, twenty-four pounds. It is seven and one-half feet long, six feet of canvas for the patient, and one and one-half feet of pole (nine inches at each end) for the handles. Its fixed feet raise it four inches from the ground.

Captain Myles Standish then exhibited the light and easily carried stretcher in use during the past nine years by the Massachusetts troops, and illustrated the ability of the men of the Hospital Corps by photographs of arms and legs bound up in all kinds of extemporized splints. Captain Ives, U. S. Army, Fort Sheridan, Illinois, and Captain Glennan, of Fort Sill, Oklahoma, also submitted papers on the litter and ambulance wagon. That of the latter officer, read in his absence by Colonel Alden, was mainly devoted to pointing out the faults of the present Army ambulance wagon as developed by its use in campaigning in the West.

Major J. Van R. Hoff, U. S. Army, described the travois as used in the Northwest for the transportation of sick and wounded and presented an improved specimen, claiming for it a sphere of usefulness in the future, if long-range bullets are found to necessitate the carriage of wounded men for long distances from the fighting line to the first aid stations or the field hospitals. It is so made that the regulation stretcher fits neatly and securely between its trailing poles. Colonel Louis W. Read, Surgeon-General, Pennsylvania, devoted attention in his paper to transportation by rail and the best methods of fitting up cars for hospital purposes; and Medical Director A. L. Gihon, U. S. Navy, described the methods of handling the sick and wounded on shipboard, pointing out their faults and showing an ambulance cot of his own invention by which they could be remedied. A paper on a field hospital kitchen wagon for sterilizing dressings at dressing stations and on the march, by Captain H. O. Perley, U. S. Army, was read by title in the absence of the author; after which there was some discussion on the best form of stretcher and a committee, consisting of Drs. Hoff, Gihon and Standish was appointed to consider the subject.

A reception and collation in the evening, at the Ebbitt House, the headquarters of the Association, closed the proceedings of the day in a most enjoyable way.

Promptly at 9 A.M., May 2, the meeting was called to order by Dr. Senn. Some committee reports, including that of the Secretary, were presented; after which, to facilitate the selection of officers for the next year, a Nominating Committee was appointed consisting of one member from each State and service represented. The first paper on the program, that of Colonel B. J. D. Irwin, U. S. Army, "Notes on the Introduction of Tent Field Hospitals in War," was read by Colonel Alden. Lieut.-Colonel L. B. Almy, Medical Director Connecticut National Guard, then took up the history of the Red Cross Society, in the course of which he urged that some action be taken to protect the emblem of the Society from desecration by use as a trade-mark for patent medicines, soap, cigars, etc. The Association took immediate action, and Drs. Gihon, Almy and Smart were appointed a Committee to carry out its views. This Committee lost no time in its work, for next day it reported a memorial to Congress, which was adopted by the Association, praying that the Red Cross be not permitted to be used for advertising purposes.

"The Medical Officer at Summer Encampments," by Lieut.-Colonel Chas. R. Greenleaf, U. S. Army, was read by Colonel Alden. According to the author of this paper, there are at these encampments no systematic drilling of the attendants in the handling of stretchers or helpless men, or in the loading of ambulance wagons, no instruction in routine or battle field administrative methods, a too general ignoring of the administrative duties of an Army medical officer and an absence of the discipline on which the successful performance of this duty is founded. The faults, he considers, the result of a failure to appreciate the necessity and importance of such duties; and he describes what he saw at the maneuvers of the Medical Department of the French Army in October last in the field at Puntin, a village near Paris, where nothing was lacking save bullets and blood to complete the realism of the battle field. It may be said that such perfection of high-class field drill is impossible with the small number of troops mustered by us in our summer camps, but the same earnestness and interest put into the work with small detachments would be productive of satisfactory results.

Assistant Surgeon C. W. Galloupe, Battery A. M. V. M., Boston, Mass., in a paper entitled: "The Diet of the National Guard in Summer Encampments," discussed the causes which bring men on sick report,—as many as 10 per cent.—on the first or second morning of the camp. Unusual fatigue of drills or guard duty in men of sedentary occupations; loss of sleep from novelty of surroundings and occupation, unusual noises, the glare of the morning sun on tents and the inopportune visits of uninvited comrades were instanced; but the chief cause was averred to be the change from simple and regular meals to a mixed and injudicious bill of fare, soft drinks and sometimes those of a harder character. In Massachusetts each company caters for itself, paying for meals out of the company fund at the rate of $1.50 daily per man; but the food is never inspected. As showing the advantage of regimental messes by which good cooks are procured and a uniform bill of fare for all the companies, Lieutenant Galloupe gave a description of the method as carried out by his advice in the 8th Mass., in July, 1892, with the bills of fare for fifteen meals (Monday to Saturday) at the rate of 50 cents each. Instead of the usual 30 or 40 at sick call every morning from this command of 600 men, only a few reported sick and after the first two days none at all.

Surgeon J. C. Wise, U. S. Navy, in a paper on "The Naval Medical Officer on Expeditionary Boat Duty," referred to the apathy in providing surgical aid to those injured in these duties, instancing the Battle of the Barges in 1782, in the Chesapeake, where by the explosion of an ammunition chest on the Virginia barge *Protector*, twenty-nine men were killed and as many wounded, many of the deaths having resulted from preventable hemorrhage. During the Civil War, boat expeditions, although of frequent occurrence, were not specially dangerous to life. Boat patrols are common in foreign waters. In cutting out expeditions the gig carrying five men and a medical officer is the hospital boat. This boat is long and narrow and in so far inconvenient, but she is the best because the swiftest. The assignment of a stanch and swift steam cutter is hoped for as one of the advances of the medical service afloat. The paper then touched on the equipment of the boat and its position under certain conditions of service and duty, and concluded with the management of emergencies likely to occur in such service. Sylvester's method was considered the best in cases of drowning.

Captain Jas. E. Pilcher, U. S. Army, read a paper on "The Place of Physical Training in the Military Service." In this he commented on the attention given by the medical department to the prevention of disease by the removal of threatening conditions, and the almost total neglect of prophylaxis by increasing the powers of the soldier to resist disease; and again, weapons are developed and perfected but not men. The perfect man is an ideal. No one man is an embodiment of perfect health. A physical examination of the most vigorous individual would reveal some lesion of actual disease or some predisposing weakness. The object of training is to take cognizance of these physical deficiencies and correct them by movements adapted to that end. Hard labor is not equivalent to physical training. Laborers develop strength in localized groups of muscles; but at the expense of others. Candidates for entrance at West Point, all passed as physically sound by experienced medical officers, are nearly all awkward, unsymmetrical and unevenly developed, and, as they march to the mess hall form a particularly instructive contrast with the third class-men who have enjoyed the benefits of a year's drill in physical training. Dr. Pilcher divided training into: 1, preparatory, by which unequal development is corrected and a proper equilibrium of the system secured; 2, conservative, by which this equilibrium is afterwards maintained. The first specially demands medical supervision. Accurate examination of the recruit exposes his deviation from the normal type and the rectifying exercises may thence be easily deduced. Muscular development depends on the frequency of muscular action. A man with undeveloped calves would be given foot and ankle exercises, and one with a slender forearm the wrist and finger movements. Military drill fails to maintain bodily efficiency; it tends to accentuate asymmetry. Hence the necessity for physical training. Athletic sports should be encouraged because they develop an interest in training.

Captain G. C. Clark, Assistant-Surgeon, member of the National Guard, discussed the relation of the National Guard surgeon to the medical profession and to the community. In the recent great advance in military sanitation and surgery, the medical officers of the Army have taken a leading part; and a high degree of efficiency has been attained by the National Guard surgeons in many of the States in the development of their hospital corps and ambulance organizations. The medical officers of the Guard are by no

means men attracted to the service by bright uniforms and the pomp and panoply of dress parades. The roster of the Association shows the names of many gentlemen eminent not only in the profession but in the special domain of military surgery. Captain Clark suggested that each State should send one medical officer to the Army Medical School, the expense to be borne by the State represented. A surgeon so educated would be of inestimable value to the community in which he lives. His special acquirements would make him of value as an executive health officer, and he would be one of the best qualified railway surgeons.

A paper by Medical Director C. J. Cleborne, U. S. Navy, entitled "Brief Notes on Ships, Hospital, Barrack and Camp Furniture, and on Electric Heating and Cooking" covered a large expanse of ground. Its author considered the modern army ambulance well suited for its purpose but the civic and naval wagons he regarded as too heavy. The ideal ward bedstead should be entirely of metal, light and strong, easily and quickly set up and taken apart, and devoid of ornament, free from cracks, crevices or anything that would give lodgment to dust or vermin. The requirements are, in the main, met by the pipe iron bedstead, weighing with its wire mattress from 120 to 140 pounds, which can be taken apart in from three to seven minutes by the aid of a bed wrench or screw driver; but a new bedstead of similar character weighing only seventy-five pounds has been introduced which can be set up in a few seconds and used as a field stretcher, the legs becoming utilized as handles. Various materials for mattresses are suggested by this officer; among them, for summer use, on a woven wire mattress, one or more layers of thick Japan sponge paper quilted between layers of felt and bound along the edges. Every ship, hospital and barrack should be provided with a crematory for the immediate destruction of animal and vegetable matter, ward sweepings, soiled bandages, etc., and also with a hot air or steam chamber large enough to disinfect iron bedsteads, wire mattresses, bedding and clothing. Aluminum dishes are recommended. In well constructed electric cooking utensils and ovens the heat is dry and concentrated, and unless properly regulated, joints may not be evenly cooked in their interior—a difficulty which may be overcome by gauze or asbestos screens or aluminum wire grills. Loss of weight in roasting, which in the ordinary process amounts to from 20 to 40 per cent., is only 18 to 20, and may be reduced to 10 by an asbestos screen.

Among the papers read by title, on account of the absence of their authors, were: "Notes on the Late Civil War," by Colonel R. F. Michel, Surgeon-General Alabama State Troops; "Camp Hospitals," by Major Lawrence C. Carr, Surgeon Ohio National Guard; and "The Progress of Medico-Military Science in the National Guard of New Jersey," by Surgeon-General John D. McGill.

The afternoon session was opened by Lieut.-Colonel W. H. Forwood, Deputy Surgeon-General U. S. Army and Professor of Military Surgery in the Army Medical School. His subject was: "Weapons of War," and he illustrated these by samples of modern small arms, projectiles and smokeless gunpowder. Among the projectiles were shells as beautifully finished as if they had been intended for parlor ornaments. He had also exposed on the wall of the lecture hall a chart showing the name and caliber, weight and other details of the principal small arms in use by the various nations. His lecture following up the history of small arms to the present small-bore, long-range rifle was interesting and instructive, and as such highly appreciated by the members and the many strangers attracted from the Museum to the Lecture Hall by the proceedings of the Association. Dr. Robert Reyburn, late Surgeon and Brevet Lieut.-Colonel U. S. Vols., followed with a paper in which he showed how the principles of aseptic surgery could be carried out by means of ordinary household utensils. Major W. Reed, U. S. Army, Director of the Bacteriological Laboratory of the Army Medical School, then spoke of the virtues of certain germicides, and particularly of those of trikresol. At the close of this paper the President having observed Miss Clara Barton in the audience, turned the chair over to the Vice-President, Surgeon-General Read, of Pennsylvania, and descended from the platform to greet the President of the American branch of the International Red Cross Society. Miss Barton was presented to the Association and led by Dr. Senn to a seat on the platform, the members rising as the lady was escorted along the aisle.

After a short paper on the action of rattlesnake venom on the serum of the blood, by Captain C. B. Ewing, U. S. Army, the meeting adjourned to enable its members to be present at the reception given by the President and Mrs. Cleveland, at the White House. In the evening the Corcoran Art Gallery was brilliantly illuminated, but very few of the members took advantage of the opportunity to enjoy the pictures and statuary. The interest of the evening centered in the executive session at the Ebbitt House, where after a long close session the Nominating Committee reported the results of its labors to the Association, and the Secretary cast the ballot electing officers as follows:

President, Brigadier-General Geo. M. Sternberg, Surgeon-General U. S. Army. First Vice-President, Colonel Louis W. Read, Pennsylvania National Guard. Second Vice-President, Medical Director Albert L. Gihon, U. S. Navy. Secretary, Lieut.-Colonel Eustathius Chancellor, Medical Director Missouri National Guard. Treasurer, Major Lawrence C. Carr, Surgeon Ohio National Guard. Chairman Committee of Arrangements for the ensuing year, Major Albert H. Briggs, Surgeon New York National Guard, Buffalo, N. Y.

A committee was appointed to inform Surgeon-General Sternberg of his selection by the Association as its President. Drs. Grant, Foster and Hoff were appointed a committee to decide upon a special badge to be worn by members of the Association, and several other business matters pertaining to the domestic economy were attended to. The President was authorized to appoint a committee to consider the relations of the Red Cross Society to the Association of Military Surgeons and the Medical Department of the Army. A resolution was adopted having in view to secure for the Surgeons of the National Guard and the Naval Reserve all the privileges of the Army and Navy Medical Schools now accorded to the medical officers of the army and navy.

The Association was called to order next morning, May 3, at 9:30 when some discussion took place on the advisability of establishing a journal. Captain Pilcher, U. S. Army, and Secretary Chancellor were strongly in favor of this project believing that it would help the Association out by its success financially. Major Carr, the treasurer, was opposed to the undertaking; as the Association was over $400 in debt, he thought it would be wise for it to be sure of floating before it began to swim. Lieutenant R. A. Foster also urged caution and spoke of the risks attending an attempt of this kind. This judicious advice prevailed and the subject was laid over until next meeting.

General H. L. Burrell, Massachusetts Volunteer Militia, then discussed the subject of the special education of military medical officers. He spoke in high terms of the advantages derived by the service from the schools of the soldier and officer, and believed that schools of instruction for the officers of the medical department of the National Guard would not only prove of great value to the Guard but to the regular Army, the medical profession and to the country at large. Lieut-Colonel E. J. Forster, Medical Director, Massachusetts, exhibited copies of the various records and blank forms in use by the Medical Department of the Massachusetts Volunteer Militia and pointed out their advantages. A number of the delegates commended these forms, but others advised the adoption of those of the regular army as the best way of securing uniformity. Major Hoff, U. S. Army, then gave a brief *resumé* of his paper on "The Military Sanitary Organizations of some of the Great Armies of the World," after which Major Havard demonstrated the equipment of the United States sanitary soldier on the person of a member of the Hospital Corps who was present for that purpose. Colonel Alden, U. S. Army followed with some notes on the course of instruction at Army Medical Schools at home and abroad, with special reference to the training of the medical officer. "The Remote Effects of Gunshot Wounds of the Extremities" was the title of the paper read by Lieut-Colonel C. M. Woodward, ex-Surgeon-General Michigan State Troops, and "First Aid on the Battlefield," that of Surgeon H. G. Beyer, U. S. Navy.

The last-named paper contained an excellent presentation of the duties and responsibilites of medical officers on the field of battle, the positions to be taken for rendering first aid and those to be selected for the establishment of field hospitals. Naval surgeons, apparently, do not forget that crews may be landed and that they may have to deal with wounded men under the same conditions as their Army brethren. Major William H. Egle, Surgeon Pennsylvania National Guard, occupied some time in following up the history of the troops of his State to the present time. The first encampment of the Guard, at the Centennial, was considered a failure; but it has seen much active service since then, and is now in most efficient condition. During the course of the day several papers were read by title in the absence of their authors and for want of time.

At 3:30 P.M. the Association met in the Hospital grounds at Washington Barracks, where Captain J. M. Cabell, U. S. Army, superintended a litter and ambulance drill, with illustrations of first aid by a detachment of the Hospital Corps company on duty with the garrison. At 4:30 the meeting embarked on the steamer *Macalester*, for Marshall Hall, a summer landing a little below Mount Vernon, where the Committee of Arrangements had a planked shad dinner in preparation. The party returned to Washington about 10:30 P.M. Next day many of the delegates crossed the Potomac to inspect Fort Myer, Virginia, and be present at a drill of the cavalry companies stationed at this post. Only a few followed out the original program, by making the special excursion to the field of Bull Run.

An excellent exhibit of surgical instruments, dressings and first aid cases, etc., was held in the Armory of the Washington Light Infantry Corps in connection with the meeting.

The fifth annual meeting will be held in Buffalo, N. Y., in May, 1895.

Texas State Medical Society.

The Society Indorses the Public Health Bill of the American Medical Association.

AUSTIN, TEX.—The State Medical Association met, for the third day, April 26, at 9 o'clock.

The Section on Medical Jurisprudence being called by President Sears, Chairman B. F. Brittain, of Arlington, read his report, which, on motion, was referred to the Publishing Committee without debate.

An invitation was received and accepted to visit St. Mary's Academy.

Dr. D. R. Wallace, of Waco, read a paper on the "Increase of Mental Unsoundness," at the conclusion of which a recess was taken for the purpose of selecting members of the Nominating Committee, with the following result:

W. R. Blaylock, McLennan County; G. W. Abney, Robertson; L. Ashton, Dallas; J. M. Frazier, Bosque; G. W. McCaleb, Gonzalez; J. H. Barham, Nacogdoches; J. M. Strayhorn, Williamson; W. P. Powell, Montgomery; J. D. Osborn, Johnson; J. P. Oliver, Burleson; W. M. Cunningham, Bastrop; J. S. Price, Jefferson; S. N. Sholars, Orange; J. H. Reuss, DeWitt; William Caston, Navarro; A. B. Gardner, Austin; W. T. Evans, Leon; E. D. Capps, Tarrant; J. S. Morris, Madison; W. B. Newland, Coryell; J. H. Blackburn, Palo Pinto; S. Bowers, Washington; J. T. Carter, Fayette; F. R. Martin, Hays; C. M. Alexander, Coleman; David Cerna, Galveston; R. C. Nettle, Falls; E. L. Menefee, Hood; R. E. Moody, Nolan; A. S. McDaniel, Bexar; J. E. Thomas, Limestone; George D. Bond, Hill; J. A. Davis, Travis; J. E. Gilchrist, Cooke; W. J. Bever, Houston; J. W. Carhart, Lampasas; E. W. Lenk, Anderson; J. M. Inge, Denton; R. Rutherford, Harris; R. S. Lewis, Wichita; T. J. Bell, Smith; F. A. Fuller, Cherokee; J. L. Autrey, Freestone; B. F. Church, Terrell; Z. T. Bundy, Ellis; J. D. Law, Bell.

At the conclusion of the selection of delegates, Dr. Cunningham discussed Dr. Wallace's paper, and reported some of his experiences with cases of insanity, and the paper was referred to the Publication Committee.

Dr. E. D. Capps, of Fort Worth, followed with a paper entitled: "Morphin Suicides — Prevention — Treatment of Opium Poisoning." Dr. Kennedy, of Galveston, discussed the paper and agreed with Dr. Capps in the main. Dr. Cerna, of Galveston, also made some remarks on the subject and Dr. Wooten, of Austin, followed and related some of his experiences with morphin cases. Dr. Warfield, of Galveston, and Dr. Osborne closed the discussion, and the paper was referred to the Publishing Company with a vote of thanks to Dr. Capps for his paper.

The remaining papers in this Section were referred to the Publishing Company by caption.

A report was received from the Judicial Committee finding the credentials of the following persons regular and recommending their admission to membership: F. A. Fuller, J. E. Brown, William Gammon and L. D. Hill.

Dr. Denton offered a resolution denouncing a secret nostrum manufacturing company. Referred to committee.

The report of the Johnson County Medical Association was read. Dr. Yates, of Plainview, made the report and presented a short paper on guaiacol.

Reports were also received from the Galveston County Association, the Williamson-Bell-Milam Society, the Collin County Association, and the Hill County Association, indicating strong organization and manifest interest therein.

The Section on State Medicine was called and Dr. Bennett, of Austin, read a paper on "The Progress of Preventive Medicine," which was referred to the Publishing Committee with instructions to publish. On motion it was decided to send a copy of Dr. Bennett's paper to the Texas delegation in Congress as the official expression of the Association on sanitary legislation.

Dr. J. W. Carhart, of Lampasas, offered the following resolution, which was adopted:

Recognizing the necessity for additional and advised legislation by the National Government for the protection of the public health against diseases other than cholera, smallpox and yellow fever, which diseases science has demonstrated to be preventable by proper attention to sanitation, the Texas State Medical Association hereby indorses the action of the AMERICAN MEDICAL ASSOCIATION in its petition to Congress to create a Department of Public Health, with an executive officer at its head with equal power and dignity with that of the executive of the other departments of the Government.

Resolved, That the neglect to make laws for the protection of the public health against preventable diseases, in accordance with the revelations of sanitary science, is attributable to the want of definite information on the part of Congress as to the requirements, and not to indifference or disregard of the rights of the public to such protection, and that in the absence of a head of the public health interest, the action of the AMERICAN MEDICAL ASSOCIATION should be taken as an expression of medical opinion on this subject.

Dr. Carhart read a paper on "How to Prevent Typhoid Fever," which was referred to the Publishing Committee without discussion.

He was followed by Dr. Clarence Marfield, of Galveston who read clinical notes on typhus fever in northern Mexico, based upon personal experience, he having but recently recovered from an attack of the fever contracted while practicing in Durango. His paper was largely descriptive, and he asserted that with the mode of living of the lower classes in Mexico it was a wonder that they lived at all, and attributed to the utter disregard of all laws of sanitation the spread of contagion in that country. He remarked that the suggestion of a bath to a Mexican patient was equal to suggesting the swallowing of a dose of poison, and that in consequence layer upon layer of dirt accumulated upon the bodies of these people, ending in disease, poisoning the very air they breathe, and neutralizing the natural salubrity of the climate. According to the Doctor, the native Mexican looks stoically upon the approach of death and resists the aid of science to prevent its attack.

The completion of the reading of the paper was prevented by the entrance of the Nominating Committee, and its reading was continued until to-morrow.

The Committee reported the following officers selected for the Association for the ensuing year: President, J. W. McLaughlin, of Austin; First Vice-President, W. L. York, of Decatur; Second Vice-President, W. R. Blaylock, of McGregor; Secretary, H. A. West, of Galveston; Treasurer, Dr. Laurendon, of Dallas.

The Committee also announced the selection of Dallas as the place for holding the next annual meeting, and the meeting adjourned until 8 P.M.

This afternoon the doctors went up the lake on the *Ben Hur*.

A short night session was held and officers installed.

The banquet at the Driskill was largely attended and speeches were made.

AUSTIN, TEX., April 27.—The State Medical Association met again this morning at 9 o'clock and disposed of the unfinished section work.

Resolutions condemning the custom of bidding for the practice of communities, jails, poor farms, and also denouncing as contrary to the ethics of the profession the giving of certificates to secret formula medicines and deprecating the advertising of such medicines in medical journals were introduced, discussed and passed.

An unsuccessful attempt was made by resolution to abolish the annual banquet.

All unread papers were referred to the Publication Committee by caption.

An invitation was received and accepted from the Mississippi Valley Medical Association to attend its next annual meeting, after which the session adjourned till the fourth Tuesday in April, 1895, when it will convene again in Dallas, Texas.

Blank Applications for membership in the ASSOCIATION, at the JOURNAL office.

BOOK NOTICES.

Report of Typhoid Fever. Baltimore: The John Hopkins Hospital Press. 1894. Volume IV. Number 1.

The broad and enduring basis on which this hospital was founded, and the careful manner in which the provisions of the trust have been carried out, are year by year bringing forth fruit of scientific value. The present report is one on typhoid fever by Prof. Osler. It is divided into eight chapters, as follows: 1, "General Analysis and Summary of the Cases;" 2, "Treatment"; 3, "A Study of the Fatal Cases"; 4, "Notes of Special Features, Symptoms and Complications"; 5, "Neurosis Following Enteric Fever known as the Typhoid Spine"; 6, "Report of Two Cases of Post-Typhoid Anemia with Remarks on the Value of Examination of the Blood in Typhoid Fever," by Dr. W. S. Thayer; 7, "The Urine and the Occurrence of Renal Complications in Typhoid Fever," by Dr. John Hewettson.

The volume concludes with a chapter on typhoid fever in Baltimore.

The work is illustrated by charts and diagrams. It is printed on good paper and has broad margins, and is altogether creditable.

An examination of the report shows that there were 229 cases of typhoid fever treated in the wards. Of these, 22 died, making an average rate of mortality 9.6 per cent. Under the cold bath system, which has been adopted for most cases, the mortality has been reduced to 7.1 per cent.; but a "large proportion of cases, 75 per cent. at least," says Prof. Osler, recover under any and all forms of treatment; even without the good nursing and regulated diet, upon which we lay so much stress. "Medicines are not, as a rule, indicated. No known drug shortens by a day the course of the fever; no method of specific treatment, or of antisepsis of the bowel has yet passed beyond the stage of primary laudation." This somewhat pessimistic view will not, we think, be adopted without protest by our distinguished friend from Youngstown, Dr. Woodbridge, nor by Trouessart or Bouchard. The latter insists on the four indications: General antisepsis, intestinal antisepsis, antipyretic medication, and regimen, and Trouessart states: "There are few diseases in which rigorous intestinal antisepsis is more plainly suggested." Certainly, there would seem to be reason for further experimentation with antisepsis, when it is seen that under the best form of treatment, as recommended by Prof. Osler, there is no such thing as cutting short the usual duration of the disease.

In regard to typhoid fever in Baltimore, Prof. Osler refers to the well-known unsanitary conditions in that city, and states that "while it has a well arranged water supply, still with unprotected sources and constant liability to contamination, it has nothing else—no sewage system, no system of isolation of the sick, no hospital for infectious diseases, no compulsory notification of such a disease as typhoid fever, no disinfecting station, no system of street watering, no inspection of dairies, no inspection of meat. The streets are cleaned, but usually so carelessly that for a large part of the year the citizens breathe a mixture of air, horse dung, and filth of all sorts"

Prof. Osler shows from the health reports of Baltimore that there has been since the year 1888 a yearly average of 229 cases of deaths from typhoid fever, but the morbidity of that disease, namely, those taken sick, can not be ascertained, owing to lack of registration. These facts, which Prof. Osler so forcibly sets forth in this volume, are not new to sanitarians generally of this country, nor indeed to the Board of Health of Maryland; but even at the expense of what some of our literary friends might term "damnable iteration," it is well to keep them before the public. Perhaps coming from an institution of the high professional standing of the Johns Hopkins Hospital, and from the pen of so distinguished a scientist as Prof. Osler, the legal gentleman holding the purse strings of the city exchequer may relax them sufficiently to cause the necessary sanitary work to be instituted.

Pain in its Neuro-Pathological, Diagnostic, Medico-Legal, and Neuro-Therapeutic Relations. By J. LEONARD CORNING, A.M., M.D. Illustrated. Philadelphia: J. B. Lippincott & Co. 1894. Cl., pp. 328. Price $1.75.

This book is divided in two parts of which Part I discusses the physiology, pathology and clinical characteristics of pain, its diagnostic value, and medico-legal relations. Part II is wholly devoted to the special therapeutics of pain. The last chapter discusses "torture or the infliction of pain as a judicial punishment or for the purpose of extorting a confession of guilt."

The book, as a whole, is scientific, well written and interesting. The author has elaborated his well-known views on the therapeutic effects of the application of compressed air, and expresses a belief that many cases of spastic hemicrania may be permanently cured by the administration of antipyrin internally and jugular compression while the patient is placed for a few moments in the compressed air chamber. Many cases are cited, and while the dangers of the induction of the caisson disease are probably not overestimated, yet the author seems to have established the fact that it has a potent value in many hitherto intractable cases. In disseminated sclerosis, in spastic spinal paralysis, and in polio myelitis, the result was negative and it is contra-indicated in cerebral hemiplegia and articular rheumatism. He asserts that the compressed air treatment is "absolutely unapproachable" in all "cerebral and cerebro-spinal difficulties of a functional character, in which pain, exhaustion, insomnia or depression are prominent features." The book should find a place in the library of every neurologist, or general practitioner giving attention to this class of cases.

First Aid in Illness and Injury. By JAMES E. PILCHER, Captain Medical Department U. S. Army. New and revised edition.

In this little work is successfully accomplished the difficult task of presenting in a clear way important medical points to the non-medical mind. This work finds its largest field of usefulness in the instruction of soldiers, sailors, policemen, firemen, railroad men, etc., the classes most frequently called upon to meet a medical emergency. To avoid the criticism that "a little knowledge is a dangerous thing," instruction of this kind should be under the direction of a competent medical man and such a book as this used as a text-book. To the ordinary layman the book, without such personal instruction, would be of little value. Knowledge of how to meet a medical emergency should be more general; dissemination of such knowledge should be, "especially among the classes referred to," encouraged in America as it is in Great Britain and on the Continent. The new edition of Dr. Pilcher's work presents a number of changes. The entire eighteenth chapter has been re-written. It will maintain the place earned by the former edition as a standard work of its class.

Transactions of the New York State Medical Association for the Year 1893. Vol. X. Edited for the Association by E. D. FERGUSON, M.D. New York City. Published by the Association.

This handsome volume, printed in the same style as the preceding volumes, contains also a general index which includes the preceding volumes as well.

The printed papers with the discussions are those of the last regular meeting, held in New York City Oct. 9 to 12, 1893, all of which have been elsewhere printed. In addition, the volume contains memoirs of deceased Fellows, and the minutes of the sessions, and of the Council. That the Association is flourishing is manifest from the long list of members who attend its meetings and subscribe to its tenets. A large proportion of its Fellows are members of the AMERICAN MEDICAL ASSOCIATION and among its stanchest supporters.

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MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues and subscription for THE JOURNAL. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above subscription the weekly JOURNAL of the Association will be forwarded regularly.

All members of the Association should send their Annual Dues to the Treasurer, RICHARD J. DUNGLISON, M.D., Lock Box 1274, Philadelphia, Pa.

SATURDAY, MAY 12, 1894.

THE RATIONAL TREATMENT OF DIPHTHERIA.

Diphtheria, more than any other disease, has taught physicians how little can be accomplished by any treatment not fully based on a clear understanding of the causes and determining conditions concerned in the production of the disturbances. All speculative reasoning has not yet given us a single remedial measure which can be relied upon to influence the outcome of that disease. Fortunately, however, recent studies have now opened the definite prospect of combating successfully diphtheritic infection by employment of the very same means by which the system protects itself during spontaneous recovery.

One of the most fundamental recent discoveries in pathology was the demonstration—less than four years ago—by BEHRING (in conjunction with KITASATO) of the antitoxic properties of the blood of immune animals. It was shown that in diphtheria (as well as in tetanus) the recovery from infection or from poisoning with the toxins of the specific bacteria, was accompanied by the formation of a certain substance capable of neutralizing the poisonous effects of the bacterial products. This "antitoxin" is found in the serum of the blood of recovered animals. It was later on shown by EHRLICH that it also passes into the milk of nursing females in considerable quantity. The antitoxic blood serum when mixed with a proportionate amount of a culture of the bacteria of that disease renders the injection of that mixture harmless to fresh animals. It is as yet undecided whether this result is due to a chemical interaction between the poison and its antidote, or, what is more probable, whether it depends on an effect upon the animal system whereby the latter is made insusceptible to a proportionate dose of the bacterial poison.

But greater interest even, centers in the fact that antitoxic serum will neutralize the poison, not only when not mixed with it in the flask, but also when the two are injected separately and at different times. If the antitoxin be introduced first, it remains in the animal system without appreciable loss for some days, and even weeks will elapse before it is entirely eliminated. If, however, the infection or the poisoning with the bacterial products precedes the injection of the immunizing serum, then too, the latter will protect the animal as long as the effects of the poison have not yet become manifest. After the symptoms have begun to appear, the injection of antitoxic serum can no longer be expected to exert a preventive influence. But it can now combat the bacterial poisoning directly, and thus prove *curative* in the most absolute sense of the word, provided the dose of serum is increased to several hundred times the amount necessary for mere prevention.

The most varied experiments by BEHRING and others, have shown beyond doubt that animals infallibly doomed by diphtheritic infection or diphtheritic intoxication can be saved with certainty, if a *sufficiently active serum be employed in sufficient quantity and at not too late a period after the infection.*

The activity of the serum of an immunized animal, that is to say the amount of the antitoxic substance formed, depends on the amount of diphtheria-culture which the animal has withstood. The most active serum is obtained by poisoning animals at first cautiously with sterile cultures, and later on with increasing quantities of the most virulent diphtheria bacilli grown in broth. By thus increasing the tolerance of an animal to the diphtheria toxins by successive inoculation during several months, serum of marvelous power can be obtained.

While BEHRING's experiments on animals had warranted a trial in man since some time, a delay occurred on account of difficulty of getting active serum in sufficient quantity for systematic clinical use.

Finally, a report appeared one year, by KOSSEL, of a trial of the serum treatment on eleven children with diphtheria in KOCH's institute. Of this number two died. Although both the low mortality, as well as the tangible improvement in the individual cases spoke in favor of the method, the trial was not extensive enough to decide the utility of the method.

At the International Congress at Rome, HEUBNER related his experience with the injection of diphtheria-antitoxin furnished by BEHRING. He had used it on seventy-nine children. It does not appear from the short report as yet published, what death rate existed amongst these cases. But in summing up the mortality of ninety-six consecutive cases which entered the hospital during the time he was supplied with serum, he records 38.5 per cent of deaths, while of these ninety-six cases but seventy-

nine—and these the selected severest type—were really treated with serum. In comparison, he gives the mortality of the previous ninety-six children not so treated, as 62.5 per cent, and of the next series, likewise not specifically treated, as 49 per cent.

While his conclusions are in favor of the efficacy of immunizing serum, the abstract of his paper does not permit the reader to weigh the evidence fully.

A report of a much more positive and satisfactory character, and one destined to introduce the universal clinical use of diphtheria antitoxin, has finally appeared from KOCH'S laboratory over the signatures of EHRLICH, KOSSEL and WASSERMANN (*Deutsche Med. Wochenschrift*, April 19, 1894). The serum was obtained from highly immunized goats. Its activity was measured by testing the quantity requisite to neutralize the fatal dose of (sterile) diphtheria culture for 1,000 grams animal weight (guinea pig). The amount of antitoxin which can save an animal from ten times the minimal dose the authors call the immunizing unit (I. U). The serum employed was of such strength that one cubic centimeter contains sixty I. U.

Injections of this serum were made on 220 diphtheritic children in various hospitals of Berlin. The dose employed was 130 to 200 I. U. (2.15—3.5 ccm.), and in a few of the more severe cases the injections were repeated every day. Of the 220 cases, 168 cases recovered, *i. e.*, 76.4 per cent.—an exceptionally favorable figure in German hospital experience. Of the cases requiring tracheotomy, sixty-seven gave a mortality of 44.9 per cent, while those not requiring operation had but 14.3 per cent. of deaths.

A better way of showing the efficacy of the treatment is obtained by classifying the cases according to the day of the disease on which the treatment was begun (the figures in brackets giving the number of tracheotomies):

Beginning of the treatment on the	Total number.	Recoveries.	Per cent. of recoveries.	Deaths.
First day	6	6	100	6
Second day	66 (9)	64 (7)	97	2 (2)
Third day	29 (8)	25 (7)	86	4 (1)
Fourth day	39 (14)	30 (10)	77	9 (4)
Fifth day	23 (10)	13 (4)	56.5	10 (6)

The total shows the remarkable influence of the treatment on the disease, as long as it is yet uncomplicated. For the streptococcus invasion, so frequently secondary in diphtheria, is not controlled by the specific treatment. Indeed, a further analysis shows that the deaths were generally due to complications, since of fifty-two deaths, twelve were due to sepsis, thirty to pneumonia, two to miliary tuberculosis and eight to subsequent affections (nephritis and cardiac failure). The authors state it as their opinion that a more liberal use of the serum would help to prevent these late accidents, even to a greater extent. They further show that their death rate is largely due to delay in sending the patients to the hospitals, since one-half of the fatal cases died before the end of the second day of treatment.

While KOCH'S laboratory has not yet offered to supply the public with the immunizing serum, the "Chemische Fabrik auf Actien (vorm E. Schering)" has sent out a circular advertising a diphtheria antitoxin solution made from the serum of immune animals, under the supervision of DR. ARONSON, who has done work on the same subject. It is claimed that its activity has been tested and found equal to twenty I. U. per cubic centimeter according to the nomenclature of the authors quoted. It is recommended to use one ccm. for the prevention of diphtheria after exposure. While the circular also speaks of curative effects to be obtained with the antitoxin, no actual therapeutic experience with it is mentioned. A note, however, has just been published by BEHRING, according to which the advertised antitoxin does not possess the full degree of activity claimed for it.

"THE GREAT WHITE PLAGUE."

DR. BRYCE'S contribution[1] to the study of the extinction of the tuberculosis is, on the whole, a rather depressing document—chiefly because it deals so largely with the agency of tuberculous cattle in the propagation of the disease in man. It is only within the past year or two—that is to say, since KOCH discovered his tuberculin test in 1891—that the extent of bovine tuberculosis has been fairly comprehended; and already we are confronted with data upon which may be based statistics whose enormous totals make the figures of an ordinary sanitary problem insignificant in comparison.

Prior to 1891 the examination of cattle for suspected tuberculosis consisted, in the main, of such examination of the glandular system as might be made by the eye, by palpation and by auscultation, while the crucial diagnostic test was that of the famous French pathologist for enteric fever—the *post-mortem*. Now, all this is changed and by the use of tuberculin—a means for proving the presence of tuberculosis, "so delicate and yet so accurate that the most unbelieving among veterinarians are to-day confessing to its marvelous diagnostic value and significance"—it has been demonstrated that from 2 to 3 per cent. of the cattle in the State of New York are afflicted with the disease.

If only the lower percentage holds good for all the cattle in the United States, then there are over 1,200,000 head, with an aggregate value of nearly $14,000,000, which should be killed forthwith, since their destruction is the only certain method of preventing the further infection, not only of other ani-

[1] Report on tuberculosis. By P. H. BRYCE, M.A., M.D., Secretary Provincial Board of Health, Toronto. Presented to the Provincial Board of Health, Feb. 15, 1894, and adopted with recommendations therein contained.

mals but of man himself from their flesh and milk.

It is possible, indeed, that even these stupendous aggregates are below the mark. Dr. Bryce, in his report,cites figures to illustrate the relative prevalence of tuberculosis in cattle in different countries, from which it is learned that 4.5 per cent. of the cattle slaughtered in Berlin were tuberculous, 9.5 per cent. of those in Upper Sileria and 12.22 per cent. of 12,000 head slaughtered in England under the Pleuropneumonia Act of 1890. Computation halts before applying these percentages to the sixty-odd million head of cattle on farms and ranges in the United States, with their aggregate value of nearly $700,000,000. The $100,000 which a recent Washington dispatch tells us the Department of Agriculture is preparing to expend "in eradicating tuberculosis among cattle," seems pitifully inadequate in comparison.

Still, as Dr. Bryce says in speaking of Prof. Koch's discovery, "some light has come which has served in some slight degree to make the cloud hanging over this all-important subject less dark and to cause, perhaps, even some rifts in it to appear." The prominence recently given to the success of measures of prophylaxis against "the great white plague," with its annual tale of 163,500 victims in this country alone, is, of itself, full of promise. The indisputable fact that its death rate has been reduced to one-fifth of its former proportions by the rigid enforcement of the simple and practicable measure of disinfection of the excretions and discharges of every tubercular patient, and of every material thing liable to be contaminated by such excretions and discharges, is a rift in the cloud through which may be discerned the time when tuberculosis, "like leprosy and the black death, shall be of interest merely to the historian of human progress."[2]

LIABILITY FOR TAKING AWAY MEDICINE.

A very singular case was decided by the Supreme Court of North Carolina March 6, 1894, (State v. Daniel). The defendant apparently a physician, was indicted for and convicted of obtaining goods by false pretenses. The indictment was as follows: "The jurors for the State upon their oaths present that J. H. Daniel, late of the County of Wake, wickedly devising and intending to cheat and defraud, on the 27th day of August, 1893, with force and arms, at, and in the county aforesaid, unlawfully, knowingly, designedly, and feloniously did, unto one Mark Barker, falsely pretend that certain medicine, to-wit, one ounce thereof, in the possession of the said Mark Barker, was too strong to be applied to a sore on the face of the said Mark Barker, whereas in truth and in fact the said medicine was not too strong to be applied to the sore aforesaid; by means of which said false pretense, he, the said J. H. Daniel, feloniously, knowingly, and designedly did then and there unlawfully obtain from the said Mark Barker the following goods and things of value, the property of said Mark Barker, to-wit, one ounce of medicine, with intent then and there to defraud, against the form of the statute," etc. After a verdict of guilty, the defendant moved in arrest of judgment, because the bill did not charge an indictable offense, but merely the expression of an opinion as to the strength of the medicine. The lower court overruled the motion, and pronounced judgment, from which judgment an appeal was taken to the Supreme Court, which has granted the motion denied by the lower court. It says that the representation being that the medicine was too strong for further use, and the inference being that it was the intention to temper or weaken it, it might well have been held that the judgment ought to have been arrested. But there was the stronger ground that in no case, which could be found had it ever been held that a false expression of opinion, alone, is indictable. The only question left, then, was whether the representation alleged to have been falsely made was a mere opinion or a statement of a fact. It would seem that it could only be construed to be the expression of a judgment of the effect of the medicine upon the sore for the healing of which it had been applied. Too strong for what? For the sore it was intended to heal? This was a matter of professional judgment, and necessarily an opinion. It was impossible to be stated as an abstract fact. And it would be too harsh a rule, the court further says, to hold the physician or the lawyer to criminal account for a statement upon a professional question when it turned out that his judgment was at fault, and by reason thereof his patient or his client had been injured. Especially so, when it has been so often held that such expressions by non-professional persons as to conditions and qualities of goods or animals are only their opinions, and not indictable.

GRADUATION IMPLIES A DIPLOMA.

The fact that a man is a graduate from a medical school carries with it a presumption that he has received a diploma. By the fact of graduation, he becomes entitled to a diploma. So says the Supreme Court of Wisconsin in the case of Rider v. Ashland County, (decided Feb. 23, 1894,) which was an action brought by a physician to recover a balance claimed to be due him for medical services.

He had testified that he was a practicing physician, and a graduate from an incorporated school of medicine—the Albany Medical College—but was not a member of any medical society in Wisconsin. It was objected that this evidence did not show that he was a qualified physician, within the meaning of the Wisconsin statute providing that no person prac-

[2] The Extinction of Tuberculosis. By George H. Rohé, M.D., Journal of the American Medical Association. May 5, 1894. p. 659.

ticing physic or surgery, or both, shall have the right to collect, in any action, in any court, fees or compensation for the performance of any medical or surgical service, unless he shall have received a diploma from some incorporated medical society or college, or shall be a member of the State or some county society legally organized in the State.

But the Supreme Court declares that it would be a very narrow construction which should hold that one who had acquired the learning and received the training of such a school—was in fact a graduate of such a school—comes under the ban of this statute, if by reason of some accident or oversight, his diploma has not been physically received by him.

The object to be secured by the statute was, the court continues, not so much that the physician should have the diploma, as it was that he should have the learning and training of such a school. The statute was enacted to furnish a remedy for an evil which was supposed to exist. The people were imposed upon by the ignorance and quackery of medical pretenders. The statute is to be fairly construed to advance the remedy intended. For that purpose it was intended to provide that only men who had been educated and trained in medicine should collect pay for medical services. The most convenient —perhaps the most natural—way of expressing the qualification was as in the words of the statute—that he should have received a diploma. The diploma is a certificate evidencing the fact of graduation.

INDIVIDUAL COMMUNION SERVICE FOR SANITARY REASONS.

DR. FORBES, of Rochester, N. Y., has been instrumental in causing the adoption of one of the long-looked-for innovations in the Central Presbyterian Church of that city, in respect to the manner in which the rite of communion is therein celebrated. He has caused the ordering of two thousand small cups for the communicants of the church. At the May service of the church, each communicant will be handed his or her own cup or glass, instead of, as formerly, only six to ten cups for some 1,600 participants. DR. FORBES makes the statement that twenty-two diseases may be communicated from mouth to mouth by means of drinking vessels. In this number he includes tuberculosis and catarrh. He has already obtained some backing, in his notions, from the Pathological Society of his city, and he purposes to urge the Board of Health, as well as the Legislature of 1894–5, to pass ordinances and laws that will prohibit the use of mutual drinking cups by religious bodies.

Blank Applications for membership in the ASSOCIATION at the JOURNAL office.

CORRESPONDENCE.

EUROPEAN LETTER.

[From the Berlin correspondent of the JOURNAL.]

THE GERMAN CHIRURGICAL SOCIETY.—TWENTY-THIRD CONGRESS.

BERLIN W., April 18, 1894.

The first session of this Congress, held annually at Berlin, was opened to-day in the Langenbeck House by Prof. Esmarch, of Kiel. Having touched in his opening speech some interests of the Society, he held a necrologue on Theodor Billroth, who died at Abbazia February 6. He had been one of the founders of the Society. His renowned inquisitions on bacteria and wound-healing, his part in promoting chirurgical proceedings on the stomach, his labors in surgery of the ear, his attention to the hospital service for the sick, his humanity, his universality, his interest for art and sciences of all kinds found a warm-hearted commentator in the necrologist. In the year 1893 out of the members of the Society, Prof. Luecke, of Strasburg, and Dr. Passavant, of Frankfurt a. M., were dead, in remembrance of which the Society arose.

The introductory paper, "On the Final Results of Tuberculous Inflammation of Hip-joint treated in the Conservative Way," was read by Bruns, of Tübingen. He mentioned first the researches of Billroth in the same direction, and then gave his own results, going backward to statistics of forty years. His hospital, being situated in Wurtemberg, a State belonging to the German federation, and giving the possibility of a perfect and sure inquiry, his figures may claim an extraordinary worth. He reports 600 cases of cured tuberculous disease of the hip-joint. Cases in observation less than one and one-half to two years were omitted. The disease for the most part appears in young individuals up to about twenty years of age. Fifty per cent. were cured after having been sick four years in the average. When older persons fall sick of tuberculous hip-joint, the hope to be cured is diminished. Often when the coxitis is cured, tuberculosis of other organs sets in and leads to a fatal end. Those who are cured can avail themselves pretty well of the leg and hip-joint, which remain totally fixed in two-thirds of the cases. Then he went over to the remaining deformities, especially the ankylosis in different angles and the shortenings of bone. Bruns is not at all a friend of the excision of tuberculous hip-joints; however, he will wait with a definitive decision on this point till the modern methods of wound-dressing have had their full work in this disease.

DISCUSSION.

Dr. Schede, of Hamburg. Of 229 cases of coxitis since the year 1880 he has treated 112 in the conservative way, with extensions, dressings, injections, etc. Of these, seventy-six have been cured, 68 per cent. Those treated with injections of iodoform gave a result of 82 per cent, cured. Resections, 60 per cent. cured.

Prof. Helferich, of Griefswald. The conservative method will be the method of the future. The children must be extremely well nourished, and sent to the country or seacoast, as is done in England already.

Prof. Gussenbauer, of Prague, saw a case of tuberculous coxitis cured without any treatment at all, only by good outward conditions of air, residence, food, etc., on which, as it is, the hope of curing tuberculosis is founded. If there is no reaction of tissue in a person sick of tuberculosis, every way of treatment will fail.

Prof. v. Bergmann found a rapid recovery of the general health after operation of tuberculous hip-joint. His indications for resection were: formation of large masses of pus; of fistulæ, and necrosis of bone. Some cases should never suppurate during all the time of the disease.

Prof. Hoffa, of Wurzburg, read a paper on "Anatomo-Pathological Demonstrations concerning Congenital Luxation of Hip-joint." By histological researches he found that on the place of resection in the acetabulum new built chondral (hyaline) substance was produced. In some cases the ligamentum teres is absent. In these cases there is crepitus when the leg is moved. They can be improved without operation. Where the ligamentum teres is preserved it slips between the margin of the acetabulum and the femur, and any orthopedic measures will by necessity part it. Operations should be done when children are three to six years of age. Then prognosis is best.

In the discussion Schede rejected operations in adult persons. Lauenstein sees the danger of the operation in the circumstance that the little patients let urine into the dressings. This he prevents by putting them on the wounded hip, by elevating the dressed leg and by a sort of wire mask which holds the dressing on the wound. Its ends are fastened up and down by cambric rolls, so that the perineum is let free. Then the dressings remain clean.

The German medical schools in the different universities during the last winter mustered 7,876 students, of which 1,279 studied at Berlin, 1,114 at Munchen and 788 at Leipzig.

Prof. Heubner, of Leipzig, has been nominated successor of Prof. Henoch in the Chair of Pediatrics in Berlin. Prof. Dr. Escherisch at Graz, Austria, will replace Heubner as director of the infirmary for the diseases of children, and docent in the University.

Prof. Dr. Disse, of Göttingen, has been nominated Professor of Anatomy at Halle.

April 19, 1894.

We are obliged to add to our former report, that Prof. Bruns had collected 600 cases of tuberculous inflammation of hip-joint. Of 200 of these cases he was able to get data, and it is these 200 cases to which his percentage of cures, deaths, etc., refer.

Dr. Habs, of Madgeburg, presented to the Congress "Eighteen Cases of Exarticulation of Knee-joint after the Method of Hagedorn." The operations were done, for the greatest part, some years ago. All those presented go on their stilts in a very clever manner and with great tenacity. A girl, operated upon fourteen years ago, dances whole nights on her wooden leg without letting out any. Others can bear bags of 200 pounds weight without more help than a staff, for better directing his march. The patella in this method is fixed backwards, the surface of the femur being in this manner protected from getting injured.

Prof. Küster, of Marburg, read a paper on "Rhinoplastics" from the skin of the arm. The nose in the case had been destroyed by lupus. If we take the skin of the glabella, [Indian method] the face of the patient is deformed by the scar. The proceeding, as used by Küster, had already been used by Antonio Branca in the middle of the fourteenth century, and afterward neglected. The operation was finished in seven different sessions. The skin newly implanted was fixed at the wound within seven days. The position of the arm was borne well during the first days, but afterwards the operator was obliged to resort to morphia to get over difficulties. The result is now a very good one, but there is a danger that the new implanted skin will shrink. Therefore this is best employed when there are only small defects of the nose. However, rhinoplasty gives but small glory to surgery. The newly built noses soon shrink and take a very unpleasant aspect.

Prof. Heidenham, of Griefswald, showed some cases of "Resection of Foot with Dorsal Position of the Incision."

Dr. Peterson, of Kiel, spoke on the "Treatment of the Colles Fracture of Radius" (fractura radii typica). There are many proceedings of dressings. The best is: After careful re-position of the fragments, the arm is fixed by a simple sling formed by a blanket. The hand hangs flapping downward. Prof. Bardeleben approved this view, stating that for the good result of this method very intelligent patients were wanted.

SECOND DAY.

Prof. Küster, of Marburg, read a paper "On Early Operation in Osteomyelitis." The germs of the disease may be implanted by scratch-wounds. As for treatment, he thinks best to lay open the medulla ossium by broadly chiseling the diseased bones and evacuating the pus. Twenty-four cases were seen, of which fourteen were operated upon in the second week of the disease; nine recoveries. Of three patients operated upon in the third week, two died. In the following weeks, results were better. Therefore he gives counsel to operate as early as possible. Some doubts may be felt about diagnosis, but this will soon be cleared up, the symptoms of the swollen and aching bones being unmistakable. Only when the development of symptoms is slow, the diagnosis may become difficult.

DISCUSSION.

Dr. Karewski, of Berlin, was of the same opinion concerning early operation of osteomyelitis. He calls it even an abortive treatment. Fourteen cases were operated upon, of which six had no suppuration; in the remainder, pus had developed. He operated in the two first weeks of the disease. The operation is not so dangerous for children, great loss of blood being avoided. No deaths in consequence of operation or immediately by the disease. A man of thirty years died after being operated upon for osteomyelitis after he had recovered from an attack of influenza.

Dr. Koerte, of Berlin, has made twenty operations in children up to ten years of age, of which six died; the rest recovered.

Dr. Schede, of Hamburg, had formerly the opinion that osteomyelitis was a benign disease. After he had seen 150 cases in Hamburg his opinion was changed. Osteomyelitis was extremely dangerous if the pelvis or lower mandibles were attacked. After all, osteomyelitis was a part of septico-pyemia, with localization in the bones. The acute cases were hopeless.

Dr. Gusenbauer had seen four hundred or five hundred cases of osteomyelitis. It is an endemic-epidemic disease. Its causation is founded on the presence of the same bacteria as other purulent diseases of swift progress. Even in desperate cases, operation could sometimes save life.

Dr. Sonnenburg says that it is impossible to give general rules; the gravity of the disease is dependent on bacteria of different quality and virulence. To the degree of the disease the treatment should be adapted. Light cases could be treated as a localized disease.

Dr. Helferich, of Griefswald, reported a case of operation of ankylosis of the joint of the lower mandibles in a child, with good function of the joint.

The Revision of the Code.

To the Editor:—Please allow a member to refute a misstatement which seems to have been purposely made by your voluminous, vituperative and dogmatic correspondent, "A Conservative Member," in his last—the tirade against the committee on revision of the ASSOCIATION'S Constitution and Code (April 21 issue). He asserts, "they were not authorized to transmogrify the Code," and that they have "greatly exceeded their instructions," etc. Now, one who attended the Detroit meeting, should know that this committee was doubly instructed to do just what it has done. The committee's announcement of their instructions and plan of work, in the Nov. 19, 1892 JOURNAL contains an

imperfectly condensed statement of the two sets of resolutions which were unanimously passed by the Association at two different days' sessions. Both of these sets of resolutions were offered in sympathy and harmony with President Marcy's wise and liberal recommendations contained in his admirable address, and there was not a voice raised to question the unanimity of their adoption. The first related to needed changes in the Association's Constitution and By-Laws, while the second set, that which was unanimously reported from the Committee on Nominations, had more special reference to the needed revision of the Code. In this latter, this committee, already appointed, was distinctly instructed to report *for the adoption by the Association at its next annual meeting*, such changes in the Code and Constitution "as in their judgment will properly liberalize the relations of this Association to the great body of the medical profession."

The committee appointed was composed of honorable representative medical men. They have conscientiously and faithfully performed the work assigned them. In this arduous task they sought the opinions and advice of their fellow-members in the Association (see November, 1892 issue of the Journal, page 605). The re-arrangement of our rules of conduct, and of professional relations to suit these changing and broadening times is no easy task when the changing of faulty rules and customs must seem like the abandonment of orthodoxy to a certain number, until their minds shall have broadened to a full appreciation of the present needs of a successful medical profession. However, the Committee's work has been well done. While the writer would have preferred to have seen the Code still further simplified, say by another 30 to 40 per cent. reduction in space occupied compared with the old Code, yet he recognizes such objection as trivial compared with the incorporation of the fundamental and vital changes needed, as marked out by the Majority Committee's preliminary statement at the Milwaukee meeting. In the presentation of these needed amendments, which, as they stated, required the re-writing of the Code, they have not exceeded, but simply executed what they were told to do. The three vital points attended to are:

1. The omission of superfluous and useless portions.

2. Non-interference with the personal rights of members to protect, by patent, surgical or mechanical appliances, and the divorcing of such worthy invention—the same as the copyrighting of books—from "secret nostrum" making and similar frauds.

3. And particularly, the lessening of the friction and frequent misunderstanding between physicians of different scientific attainments and of various professional purpose, by a more liberal construction of the vexed "consultation" problem.

It does not appear to have occurred to the biased and headstrong mind of "A Conservative Member" that the present anomalous condition of the medical profession in the United States is largely due to these impolitic and unwise or unjust sections of the old Code. He does not seem to see that a considerable school of pronounced irregularity has been "boomed" so to speak into popularity, and the possession of the cream of family practice in many large cities gained through the exclusiveism engendered by the old Code. There is no more potent way to promote a weak cause than to make martyrs of its adherents. And homeopathy would be no more to-day in this country than it is in the others over the sea, had it been let entirely alone, *i.e.*, were it not for the unwise opposition of the over-conservative controllers of the American Medical Association.

What is the result in the United States up to date? A factional, disjointed, overcrowded medical profession—roughly estimated at over one hundred thousand physicians, about one-eighth of whom are openly arrayed against regular medicine; and about one-fourth of the regular profession in greater sympathy with and in stronger allegiance to special societies or associations than to the would-be parent society of the country. These latter are not in open opposition to the American Medical Association, but their representative men, of highest professional repute in commercial centers, are gradually being weaned from the not overfond embrace of a cranky mother.

Evidently for very many of this class, professional respectability—is no longer an outgrowth of or dependent upon what they consider the effete rules of the old dogmatic Code. Of the remainder of the members of the American Medical Association, there are probably more than half who stand practically where the writer hereof does, always faithful to the old society, because it is the recognized source of authority for medical men in this country, yet always hoping for the time when broader principles and policy will dominate, so that a unification of the best elements in the medical profession of the United States may be accomplished under the fostering care and control of the American Medical Association.

This spirit of unification, mutual concession and harmony which actuates a very large portion of the members of the Association is in no way represented by the dogmatic and uncompromising *conservatism* of the correspondent previously referred to.

From the frequency with which the "learned, honorable and faithful physicians" are lauded in these epistles for writing a code "for all time" and "not susceptible of betterment," one may naturally assume that "A Conservative Member" had had the writing of it himself, and that in his dotage, with a "ruling passion strong in death" for his own individual glory he could not bear to see his own pet phrases changed in any way.

The question remaining unsolved is, Which shall be permitted to die first—"A Conservative Member" or the American Medical Association? Harmony.

Proposed Amendments of the Constitution and Code of Ethics of the American Medical Association.—Some of the Parliamentary Questions Involved.

Chicago, May 4, 1894.

To the Editor:—When the report of the Committee on Revision of the Constitution and By-Laws, was made in the meeting of the Association last year, and the President ruled that said report must lie on the table one year and be acted upon at the next annual meeting, several members contended that the ruling was wrong. They claimed that inasmuch as the proposed amendments or revised instrument had been prepared by a committee appointed for that purpose the preceding year, it was equivalent to one year's notice, and consequently was eligible for final action at once. They were quickly silenced, however, by simply reading the present constitutional provision for its amendment, as follows: "VII.—No amendment or alteration shall be made in any of these Articles, except *at the annual meeting next subsequent to that at which* such amendment or alteration may have been proposed; and then only by the voice of three-fourths of all the *delegates* in attendance." This language admits of but one meaning, namely, that every proposed amendment or alteration of the Constitution must be presented *at an annual meeting* and remain on the table for consideration until the next annual meeting before action can be taken thereon. It makes no difference whether the amendments are proposed by a committee previously appointed or by an individual member.

This was fully tested at the annual meeting in 1887. At the preceding annual meeting, 1886, a special committee had been appointed to consider and report upon the practicability of certain alterations in the Constitution and plan of organization of the Association. At the next annual meeting, 1887, the committee made a full report recommending in due form three important amendments to the Constitution. A motion was made to accept the report and adopt the proposed amendments, which was seconded, and at once adopted by the required majority. The small minority immediately claimed that the action had been contrary to the requirements of the Constitution, while others insisted that the special topics under consideration having been in the hands of a committee during the year was sufficient, and at first the President ruled in their favor; but at a later stage of the meeting the action was set aside and the three proposed amendments were laid on the table until the next annual meeting. (See Journal American Medical Association, pp. 716-717, Vol. viii, 1887.) At the next annual meeting, 1888, two of the proposed amendments were adopted and the consideration of the third was again postponed another year. (See Journal American Medical Association, pp. 694-698, Vol. x, 1888.) At the next annual meeting, 1889, it was fully discussed and rejected by a decisive vote. (See ibid. p. 98, Vol. xiii, 1889.) As the revised or amended constitution proposed by a majority of the Committee on Revision was duly presented at the last annual meeting it will be ready for final action at the next meeting. And as the revised constitution since proposed by the *minority* of the same Committee is strictly *germane* to the topics embraced in that reported by the majority; a motion to substitute the minority report for that of the majority, would be in harmony with both the present Constitution and parliamentary rules.

During all the past history of the Association, its Code of Ethics has been regarded as a part of its organic law; and all attempts to alter or amend it have been subjected to the same rules as govern proposed alterations of the Constitution. The only important amendment that has been made to the Code since its original adoption, in 1847, is the addition of Section, or paragraph 2, Article I, under the head of "Duties for the Support of Professional Character." Its history is as follows: In 1877 a controversy had taken place between the Michigan State Medical Society, or its members, and the Medical Department of the University of Michigan, in which the Faculty of that Department was charged with violation of the Code of Ethics by teaching and recommending for graduation students known to be intending to practice some exclusive or irregular system of medicine. The charges had been referred for adjudication to the Judicial Council of the Association, and it reported that there was no clause in the Code of Ethics bearing with sufficient directness on the subject to constitute a basis for judicial action. It was immediately voted that the Judicial Council, as a special committee, prepare and report at the next annual meeting such an amendment of the Code in the form of an additional Section, as would cover the questions in controversy.

The next annual meeting, 1878, the Committee reported an additional Section of the Code, in accordance with the instructions given the previous year. The President, the late T. G. Richardson, decided that the amendment proposed by the Committee must lie upon the table until the next annual meeting, as the Code was a part of the organic laws, and the decision was fully sustained by the Association, (See Transactions, p. 44, Vol. xxix.) The next year, with Theophilus Parvin as President, the proposed amendment was taken up for consideration near the close of the session, when, on account of the small number present, it was postponed until the next annual meeting. At the next meeting, 1880, it again escaped attention until near the close of the session, when it was taken from the table and made a special order for consideration at 10:30 A.M. on the second day of the next annual meeting. (See Transactions, p. 65, Vol. xxxi.) Accordingly, at the next meeting, which was at Richmond, Va., 1881, with J. T. Hodgen presiding, the proposed amendment was fully discussed, somewhat modified in phraseology, and adopted by the voice of three-fourths of the delegates present. (See Transactions, p. 39, Vol. xxxii.)

It is thus seen that in both theory or principle and in practice, the Association has regarded the Code of Ethics as a part of its fundamental law, to be amended or altered only on the same conditions and in accordance with the same rules of procedure as are prescribed for amendments of the Constitution. If this eminently wise and judicious policy is to be adhered to, when the *revised* Code of Ethics is proposed by the majority of the committee on revision at the next annual meeting, it will be subject to only two parliamentary motions; one to lay it on the table for action at the next annual meeting; the other to postpone its consideration *indefinitely* and discharge the Committee. Neither of these motions would be debatable, and the adoption of the latter would save much valuable time of the Association and greatly promote the best interests of the whole profession.

Yours truly, N. S. Davis.

The Golden Opportunity of a Great National Medical Association.

Detroit, Mich., May, 1894.

To the Editor:—They only gain the largest success who improve every opportunity. The medical profession of the United States has presented for its acceptance or rejection, the opportunity of a generation. This opportunity is the report of the Committee on Revision of the Constitution, By-Laws and Code of Ethics of the American Medical Association. The adoption or rejection of the main features of the majority report, will profoundly influence the activities of the medical profession of the United States far into the future. To a few of these features we desire to direct attention.

As to membership: At present, most members of the Association are dummies, viz: They can pay their dues and talk, but can not vote. Yet in the management of the affairs of the Association, votes are the only things which count. It matters not that a member has attended and worked in the interests of the Association for forty years, except he have a delegate's certificate, secured during the present year he can not exercise any final influence upon the management of the Association.

The revised law gives every member the right to vote on all occasions, and so long as he continues his membership. Thus when at a meeting he will not be compelled to stand by as a wooden person while the delegate members vote away his convictions and rights.

This change in membership offers inducements for all to become members, and stay members, in that the old have the same rights as the new members. In this it is a marked contrast to the existing plan, which has no active members, except during the time of meeting, and these must be appointed yearly. The proposed plan is likely to keep, as active members of the Association, most of those who join, because they can retain their rights of membership continually. We do not hesitate in affirming that had this new rule always existed, the increase in membership of the American Medical Association would have kept pace with the development of the country, and have been thousands where now it is but hundreds. Those who desire this Association to number seventy-five thousand actual members

will do well not to neglect the present opportunity in securing the adoption of the revised Constitution, By-Laws, etc.

2. The proposed changes afford the ASSOCIATION an opportunity to conduct its meetings entirely in accord with the views of the scientific workers—those who attend the meetings for the purpose of increasing their ability to cope with disease. Such conduct is absolutely essential for the best growth of the ASSOCIATION. Only such conduct will compensate for the loss of practice necessitated by absence from home, and for the expense and fatigue incident to a long journey.

By the present method, more than half the time is consumed in a general session, the principal features of which are disputes over parliamentary laws, personal wrangles, unprofitable and disgusting to all but the participants, and long-winded papers which interest only a few. The proposed changes provide for a general session of the shortest possible length; not more than one or two hours daily; limits all addresses to twenty minutes; takes from the floor of the house all debatable questions and has them first considered by a representative business committee before they are offered for final adoption. It is believed that the proposed changes will render the general sessions profitable to all, and still leave practically the entire day open for effective work in the sections. It is believed that this plan would augment greatly the number of workers in the Sections and multiply largely the membership of the ASSOCIATION.

Will the ASSOCIATION neglect this opportunity?

3. The proposed changes offer the ASSOCIATION a chance to systematically and habitually secure as its advisers the best men in the Sections. Already these exist in an organized body known as the Central Business Committee. The proposed plan makes them the advisers of the ASSOCIATION in selecting its place of meeting and officers. It would seem as if this were better than the present haphazard method.

Will the ASSOCIATION select the better way?

4. In the matter of professional fellowship, an opportunity is presented for the ASSOCIATION to take a position which it can successfully defend, not only in its own ranks, but before any intelligent person. The Revision Committee proposes that all reference to pathy or sect be eliminated from the Code of Ethics, and that every physician select his professional fellows as he chooses, if only the selection be made from those well educated having an honorable reputation and a legal right to practice medicine.

Will the ASSOCIATION improve its opportunity?

5. The Revision Committee advises that equity be established between members of the profession by placing the copyrighting of books and the patenting of mechanical appliances upon the same basis; and by permitting special workers outside of medical colleges, hospitals, dispensaries, etc., to have the same rights of advertisement as have been accorded to those inside. Let the "outs" be placed on the same footing as the "ins," is suggested.

Will the ASSOCIATION heed the suggestion?

After nearly half a century of marvelous advances, both within and without the medical profession, it would seem possible to effect such changes in the organic laws of the AMERICAN MEDICAL ASSOCIATION as would bring it into closer contact with the great forces moving the medical profession, and so attract a membership of vastly greater proportions. The Committee on Revision, acting under instructions from the ASSOCIATION, has studied the situation as best it was able, and has presented its conclusions through the JOURNAL for consideration. It is quite in order to revise the revision so that it may still more accurately represent the medical profession in this country.

The writer has always cheerfully obeyed both the spirit and letter of the old organic laws, and the adoption of the revision would make no difference with his actions. But he also believes that the adoption of the revision would render it possible for the ASSOCIATION to gather within its ranks tens of thousands of physicians who otherwise would stand aloof; that the revision is quite in accord with the spirit of the old Code; in accord with the best spirit of the medical profession from the earliest historic ages; and with the spirit of the best portion of the modern medical profession of all countries. He believes that the increase of individual responsibility given, harmonizes with the larger education, the better morals and general spirit of the age, and so is imperatively demanded of an organization which must stand or fall as it is able to gather to itself the elements of physical, intellectual, professional and moral power which dominate the medical profession of the United States.

Will the ASSOCIATION grasp its golden opportunity ere it passes?

LEARTUS CONNOR, M.D.

Revision of the Code of Ethics.

To the Editor:—A few additional notes on the "revised" Code seem necessary to particularize some of the many defects of the extraordinarily unphilosophical and disorderly production of which the proem is the type. Therefore this second series of notes relate principally to the proem, only a few of them being directed to the letter and spirit of the "revised" Code.

1. Recusancy has characterized the acts of the Majority Committee throughout its work. Had it performed its duties as ordered by the ASSOCIATION, and confined its labors within the prescribed limits, it would not have exposed itself to general censure. But the revisers' condemnation of the original Code and their suggestion that it be re-written "in phraseology so plain as to make it a practical common sense document" implied that they were competent to give a prodigiously well-arranged and admirably well-composed substitute for what they substantially alleged to be obscure, unpractical and senseless. That they have made a sad failure in their attempt to improve upon the original is well shown by their inaccurate, illogical, ill-arranged and ridiculous "revision." Their pretentious but meaningless proem is worthy of tyros of a college society, trying their prentice minds in composing a burlesque; and it is difficult to believe that such a marionettal exhibition of ethics and literature could have been made by men of mature years. It is pitiful that this "Revising" Committee, after angling in vain for arguments in the turbid stream of charlatanism, should endeavor to thrust upon the profession a production whose perusal affronts the eyes, distresses the minds, and assaults the moral sense of loyal physicians. Parts of the "revised" Code are so speciously stated that younger members of the profession will do well to compare them with the original; the fraud will then be apparent, and they will not be likely to accept this counterfeit. Let them remember that when bad morals, sustained by self-interest, are inadvertently indorsed by thoughtless men of good character, the eradication of these evils is next to impossible. Let them remember, also, that the repeal is often much more difficult than the passage of an act. And may they join the older loyal members of the profession in a vigorous defense of its honor against the nefarious attack upon its grand and glorious code of morals!

2. Since the first sentence of the proem—"a code may be either penal or ideal"—seems intended to be aphoristic and is supplemented by characteristically witless definitions of a penal and an ideal code, it is proper to say that a brief analysis of the "aphorism" and "definitions" proves the one to be fallacious and the others to be worse than inaccurate, and that a little reflection has led to the following annota-

tions: 1, that penal is not logically opposed to ideal, and can not be used in contra-distinction; 2, that all the laws, all the works of men, are first ideal and become real only when expressed, when performed—the idea coming first is elaborated in the mind, afterward it is expressed, perhaps in words, or is executed by the hand; then and then only it is real; 3, that a penal code and all legal maxims were ideal when conceived in the mind, and became real, authentic, as soon as expressed; 4, that a code of medical ethics and all moral maxims were ideal when conceived in the mind, and became real, authentic, as soon as expressed; 5, that the adjective, ideal, is applicable to qualify all unexpressed maxims, codified or not codified, and can not be used exclusively to qualify any particular code of ethics; 6, that all ideal codes of laws and morals, when expressed, become real, authoritative and penal; 7, that some penalty is necessarily attached to the violation of every law whatsoever; 8, that all laws command or imply thou shalt or thou shalt not; 9, that the penalty is generally proportionate to the kind and degree of violation; 10, that the penalty may be imposed by a judge, by the violator himself in his own conscience, or by nature; 11, that the penalties for some crimes are defined by statute, but the degree of violation is often determinable by the court; 12, that violations of laws governing the reciprocal relations of men, not criminal violations, are punished by damages awarded to the injured "party;" 13, that for violations known to the violator only, the penalty is sting of conscience; and 14, that when fire is applied to his body by a man, the penalty for this violation of a natural law is pain and a more or less severe burn—even in this case the penalty is proportionate to the degree of violation. Hence criminal, civil, moral and natural laws—all ideal when conceived in the mind, then, when expressed, all real, authoritative and penal. This exposition may give an idea of the legal, ethical and logical lore of the committee of men who allege that a great masterpiece of literature and of moral laws is ill arranged, impractical, obscure and senseless!

3. The "revisers" announce the startling discovery that an ideal code is a "crystallization of thought and sentiment." It is, however, proper to record, for the purpose of "exact definition," they qualify the announcement by saying that the thought and sentiment of only a "considerable body of men who, for long periods have been associated with a common purpose" are crystallizable. Therefore only long association of men *with* a common purpose can bring forth crystals of thought and crystals of sentiment which, commingling, give birth to an ideal code. The committee, representing as it seems a kind of progress, the leaders in which decry the works of the past and many of the present, will not be likely to accept some of the definitions of "ideal," nevertheless two definitions by reputable scholars are here given. "The ideal is that which the mind contemplates as a representative of excellence." "The ideal is the prototype of all things though it is impossible that they can ever attain its perfection." An ancient philosopher, whom the "revisers" may characterize as a fossil, said: "The image is the work; the idea is before the work."

4. Used in any sense, "ideal standard" is a forced expression. Criterion—that rule of judgment—would have better expressed the thought, while standard relates to material things. Standard is too frequently used in a figurative sense. The too free and indiscriminate use of figures of rhetoric in the language of science is often evidence of poverty of diction and even of ideas. A striking example of needless figures is found in the third paragraph of the proem: "A lamp to the feet of the young". . . "A mirror. . . . for the more mature. . . ." the "revisers" leaving the less mature in total darkness, with neither lamp nor mirror. Such figures of speech might have served to relieve the tedium of a lay sermon, but in the proem to a code of medical ethics they are surely out of place. But to give illustrations of the thought-and-idea-saving figures of rhetoric, and thus pay them in their own base coin, the "revisers" may be said greatly to need a mirror in which to see themselves, in their present position, as others see them, and a lamp to guide their tottering steps through the mazes of ethics, rhetoric, law and logic which they have so recklessly entered. There is nothing so easy, space-filling, and time-saving as to borrow figures of speech. These borrowed figures are, however, among the best parts of the "revision," for they are so quaint as to excite mirth, and have even served to rouse a sleepy listener to whom the "revised" Code was read soon after its publication. In the fourth paragraph of the proem it is written—"a code of ethics . . . takes cognizance of, and formulates rules of action" The "revisers," but not any code of ethics, might, could, would or should take cognizance of, and formulate rules of action. Had they taken cognizance of this fact, perhaps they would have made fewer blunders in their "revision," and would have been likely to say in plain and simple words that a code of ethics is a suitably arranged collection of maxims for the guidance of men in their reciprocal relations. A good code of ethics with well formulated rules of action does not contain "non-essential details" and therefore can never require changes—such is the American Code of Medical Ethics.

5. Verily the "revising" body must have been at a loss what next to say when it gravely reduced to writing that which it probably regarded as mere bombast, with the hope, however, that it might pass as an assertion of professional dignity. "Obviously the code adopted by a learned profession must be ideal rather than penal, as it would be beneath the dignity of its members to bind themselves by penal restrictions." This is little more than a repetition of the idea of the ideal code which is still festering in the ponderous collective mind of the "obnoxious" committee beneath whose dignity are all penalties, including stings of conscience, and which might, with profit, devote more time to the study of ethics in general and medical ethics in particular, together with a sprinkling of rhetoric and logic, and the art, not of "conducting a career," but of self-conduct throughout their career—their course in life. All of which is suggestive of a few years' devotion to "the humanities." The section on etiquette in this proem is written in the same loose, inaccurate and unscholarly manner as the preceding paragraphs. Much is still left unsaid against this proem, composed by men who regard the National Code as senseless and inferior in arrangement and in language!

6. What induced the "revisers" to perpetrate the egregious blunder of composing Article I, of Chapter I, Part I, of their ever-to-be-censured "revision," is past human understanding. This Article, which is even worse than the proem, begins with Bunsbyan platitudes; then it "hangs" issues of life and death, and does not seem certain whether it be the issues, or life and death, that perform duties; to responsibilities it gives consciences which "adjudge penalties for ignorance or neglect," although the oracular "revisers" say in their "ideal" proem that "the Code adopted by a learned profession must be ideal rather than penal, as it would be beneath the dignity of its members to bind themselves by penal restrictions;" for good effect, it solemnly interposes some borrowed figurative language, and finally exhorts those assuming responsibilities to abjure ignorance and improve their minds. This is followed by a travesty on some introductory lecture on preliminary and medical education, such as those delivered a little less than two score years ago by each professor, at every successive annual session, in the schools of medicine. The fashion has long since passed

away. Its revival may be due to the genius of the Majority Committee. Not one sentence in this first Article has a legitimate place in any code of ethics. So much for the Committee's method of "revising" the American Code of Ethics!

7. Xs, these two letters, long ago united in good literary faith, were finally discovered to be incompatible and were divorced by an act of literature. They are now recoupled for the sole purpose of symbolizing the unknown quantity and superfluity in concubinage. Xs would be an appropriate device for the signet of the Code "revising" committee which was an unknown quantity and a superfluity from the beginning. The methods of this Committee long remained unknown, its views were uncertain and often shifting, and the time for publication of the "revision" delayed for unknown reasons. Its appointment was made through intrigue and was not necessary; its "revision" is full of superfluities; it is a superfluous committee which should be discharged without delay, lest it introduce many superfluities likely to be injurious to the ASSOCIATION, through its sophistication of the Code, as exemplified in the second article of the first chapter which begins in true Polonian manner, with a flourish of empty words followed by the shrewd interposition of "sanction of government." This is one of the minor illustrations of the craftiness of the "revisers." The other sections of this article are perversions of the original. The third article consists of two sections worse than perversions of the original, from which have been expunged sections relating to the obligations of patients to their physicians. Such is the manner in which the National Code has been treated by the committee instructed to report if changes be necessary. The first article of the second chapter is another example of the perversion and mutilation of the original with the insertion of a clause which, if adopted, would be an entering wedge for many kinds of irregularities. The second article, "of consultations," is the crowning work of their craftiness, the objective point of the disorganizers. If ever accepted it will lead to the admission of every charlatan in the land within the fold of the regular profession. This is the way in which the Committee is guarding the honor of a respectable medical association!

8. Year after year, ever since their voluntary disfranchisement, the disorganizers have labored constantly and shrewdly to induce some members of the ASSOCIATION to demand a revision of the Code, and have at last succeeded. Their wish is realized but they have no reason to be satisfied with the maxims, arrangement and literary character of the long desired "revision" of the Code. They would probably have preferred its total abolition, but such abolition would surely be injurious to them. Although the codification of ethical maxims does not necessarily change the moral nature of followers of Belial, it warns others to avoid evil and evildoers and points out the right path, which is not always easily found by those who seek it and are in doubt as to its course. The "revisers" have omitted much that is necessary for the guidance of those in search of the right path, and have introduced much that is foreign to an ethical code and much that is unnecessary, notably the chapter on special departments in medical practice, which is one of the blots on the "revision," an addition to their many blunders and superfluities. Then comes the silly divorce of the ethical maxims and rules of etiquette, to which are added the numerous absurdities that the committee chose to prescribe. It is needless to carry this examination farther, and it suffices to say that there are few properly constructed sentences in the whole composition of the "revisers." What is correct in the published "revision" belongs to the original Code. And the ambition of these "revisers" was to reform medical morals!

9. Zealous in their advocacy of the disorganizers' infamous cause, the "revisers" despite their "depreciation," have done all they could to "abolish, belittle, distort and ridicule" the Code and "otherwise lessen its hold upon the profession." They offer, for the grand original, a substitute which is not likely to do them honor or credit, for it is shown that this work of four minds in labor during nearly two years, this much heralded "revision," begins with fallacy, is characterized throughout by sophistry, and ends in absurdity!

A CONSERVATIVE MEMBER.

The Code Revision.—An Appeal to Men of Good Sense.

NEW YORK, May, 1894.

To the Editor:—Will you be so kind as to insert in your esteemed JOURNAL, this short appeal to those members who sincerely have at heart the welfare of the ASSOCIATION?

I am one of the many who believe that our excellent code of morals requires no alterations whatsoever. Therefore I exhort all members to waste no more thought and time in considering the question of revision, but to devote their best energies to carry out the real objects of the ASSOCIATION, which are: To cultivate and advance medical knowledge; to raise the standard of medical education; to promote the usefulness, honor and interests of the medical profession; to protect public health; to enlighten the people concerning the duties, responsibilities, and requirements of medical men; to encourage emulation among members of the profession; to further concert of action in the profession; and to establish friendly relations among members of the profession.

I earnestly appeal to all loyal members of the ASSOCIATION, to exert their utmost influence against propositions which do not pertain to these wise and lofty objects, or which are not in harmony with the Code, and to endeavor to put an end to the disgraceful agitation begun by self-seeking malcontents whose motto seems to be "rule or ruin." It is high time for the men of good sense to assert themselves and rescue the ASSOCIATION from the grasp of those who seek its destruction. Let the revision question be speedily dismissed, and the ASSOCIATION will prosper and its grand mission will be fulfilled.

JOHN G. TRUAX, M.D.

PUBLIC HEALTH.

Tuberculosis Prevention.—The Health Department of New York has inaugurated its preliminary measures for the prevention of tuberculosis in that city. A circular is issued requesting all physicians to furnish the Department the name, address, etc., of each tuberculous patient coming under their care. The information thus obtained will be registered by the Department, but in no case will it interfere with the patient or premises, unless the attending physician so request or unless the patient be an inmate of a tenement house, boarding house or hotel—nor even then if the physician will deliver the circulars of the Department or furnish such equivalent information as is required to prevent the communication of the disease to others. In other cases in these places, inspectors will visit the premises and furnish necessary instructions and the circulars of information and advice.

Where it comes to the knowledge of the Department that premises which have been occupied by a consumptive have been vacated by death or removal, an inspector will visit the premises and direct the removal of infected articles, such as carpets, rugs, bedding, etc., for disinfection, and will make such written recommendations to the Board as to the cleansing and renovation of the apartments as may be required. An order embodying these recommendations will then be issued to the owner of the premises, and compliance with the order enforced. No other persons than those there residing at the time will be allowed to occupy such apartments until the order of the Board has been complied with. Infected articles, such as carpets, rugs, etc., will be removed by the Department, disinfected and returned, without charge to the owner.

In order to secure a prompt and positive diagnosis in a suspected case of tuberculous disease, the Department will make the necessary bacteriologic examination and furnish a report thereof to the attending physician free of charge. The authorities of all public institutions, hospitals, dispensaries, asylums, prisons, homes, etc., within the jurisdiction of the Board are required to furnish to the Department the name, sex, age, occupation and last previous ad-

dress of every consumptive coming under observation within seven days of such time, and the Board earnestly requests the coöperation of all practicing physicians in its efforts "to restrict the ravages of the most prevalent and formidable disease with which we have to deal."

"Cholerine" and Cholera.—Our old acquaintance, "cholerine," the official euphemism for Asiatic cholera, has strutted his brief hour and disappeared from the bulletins, at least for the present and in the localities where it is no longer possible to conceal the truth. The full truth is, however, not yet known as to the extent of the Portuguese epidemic. A rigid censorship is exercised over all information on the subject, but from such information as has transpired it may be estimated that there have already been over 3,500 cases with a high rate of mortality in Lisbon and vicinity. Senor Montaldo, the Chief Medical Director of the Spanish Government, who visited Lisbon last month to investigate the epidemic, reports that the disease was imported by a merchant vessel from the Cape Verde Islands, off the western coast of Africa. A cable dispatch of May 3, however, says that the Board of Health of Lisbon declares the port in a healthy condition. Other recent dispatches confirm the reports of the epidemic prevalence of Asiatic cholera in Western Russia and in the Austrian province of Galicia, of its appearance in Western France in the Department of Finisterre and of its continuance in Constantinople.

Revised regulations to be observed at foreign ports as to vessels destined for the United States, at our own maritime quarantines and on the Canadian and Mexican borders were recently signed by the Secretary of the Treasury.

Smallpox.—The unchecked spread of smallpox in Chicago and its increasing menace to the country at large has caused the health officers of several States and the Dominion of Canada to call another conference on the situation. Drs. Bryce, of the Provincial Board of Ontario; Probst, of Ohio; McCormack, of Kentucky; Baker, of Michigan; Metcalf, of Indiana; Scott, of Illinois: Reeve, of Wisconsin; Hewitt, of Minnesota; Kennedy, of Iowa; and King, of Missouri, are among the signers to the call and the conference was held in Chicago on the 9th and 10th inst.

Notwithstanding the milder weather and the increased energy and multiplied resources of the Health Department, the first week of the present month shows an increase of 27.7 per cent. in the number of cases of smallpox in Chicago as compared with the daily average of cases in the previous month. During April there were 544 cases reported—a daily average of 18; from May 1 to May 7 there were 162 cases reported—a daily average of 23. It is possible that as is claimed, this increase is due, in some measure, to the more thorough work of the inspectors and that a larger proportion of existing cases are now being reported than heretofore. There is scant comfort, however, in this view of the case; it suggests at once the question, What, then, is the actual number of cases of smallpox in Chicago at the present time?

Attention has been called to the fact that clothing is being manufactured in and shipped from infected workshops and tenements, and the factory and tenement inspectors have asked for instructions as to their duties, responsibilities and authority in the premises under the law. It is understood that they have been advised that their authority is plenary, and that their duty is clearly defined to be not only the protection of the health of the inmates of tenements and factories, but of the public health in so far as this may be affected by such establishments, their inmates and employes.

In Illinois, outside of Chicago, the situation shares in the general improvement noted in the country at large and the disease is rapidly losing its importance as an epidemic. There are only seven infected points remaining out of the total twenty-seven reported since January 1, namely, Bloomington, Freeport, Harvey, Lockport, Madison, Rockford and Rock Island. Up to May 7, there had been a total of eighty-three cases with fifteen deaths at twenty-seven points; in sixteen of these points the origin of the outbreak was traced directly to Chicago, in one to Joliet and in ten the origin is reported "unknown."

Infected points are still reported remaining in Massachusetts, Connecticut, New York, Pennsylvania, Tennessee, Texas, Arkansas, Missouri, Michigan, Indiana, Illinois, Wisconsin and Iowa.

ASSOCIATION NEWS.

The Association Train will leave Chicago Monday, May 28, via Santa Fe R. R., Rio Grande Western, and Southern Pacific, for San Francisco via Denver, Colorado Springs, Leadville, Manitou, Glenwood Springs, Salt Lake, Ogden, Truckee and Sacramento. Returning, after the meeting, the train will pass through Sacramento and Northern California to Portland, thence east by way of the Northern Pacific R. R. to St. Paul. C. M. & St. P. R. St. Paul to Chicago. A stop over at Yellowstone National Park for those who desire it has been arranged, and it has been understood that at several places on the journey there will be short stops. President Hibberd's party in a special car join the train at Chicago, and the St. Louis party are expected to join at Kansas City. From all points east and south, concentrating on this train should be effected at Chicago and St. Louis. For all information relating to this train, fares, etc., address J. M. Connell, 212 Clark st., Chicago, or any agent of Santa Fe line in other cities. Rates promised are the lowest excursion rates at time of departure.

This is the only route on which arrangements have been perfected by the Trustees.

SOCIETY NEWS.

Susquehanna County, Pa., Medical Society.—At the annual meeting of the Susquehanna County Medical Society held at Montrose Pa., May 1, 1894, the question of revision of the Code of Ethics was considered and freely discussed by the large number of members present. It was resolved, with one dissenting vote, that this Society does now renew its allegiance to the Code of Ethics of the American Medical Association, and the Secretary was directed to report this action to the Journal of the American Medical Association.

Calvin C. Halsey, Secretary.

Ohio State Medical Society.—The forty-ninth annual meeting will be held at Zanesville, May 16, 17, 18, 1894, when the following program will be presented:

The Physician, Dr. Samuel Hart, Marietta.

The University and Medical Education, Dr. D. S. Kellicott.

The Prevention of Consumption, Dr. C. O. Probst, Columbus.

Infection in Tuberculosis. Food Products, Dr. H. H. Spiers, Ravenna.

Is Consumption Curable? Dr. R. E. Chambers, Chandlersville.

La Grippe in the Differential Diagnosis of Scarlet Fever, Measles and Rötheln, Dr. James L. Tracy, Toledo.

Scarlatina, Dr. Amelia J. Prior, Cincinnati.

Diphtheria, Dr. J. S. Haldeman, Zanesville.

The Prevention of Pertussis, Dr. George M. Clouse, Columbus.

Studies in the Etiology of Smallpox, Dr. J. C. Graham, Columbus.

The Value of Recent Therapeutic Literature, Dr. W. C. Chapman, Toledo.

Certain Entozoa of the Dog and Sheep, Prof. D. S. Kellicott, Columbus.

On Imparting Rudimentary Knowledge to Lawyers, Dr. Dan. Millikin, Hamilton.

Unjust Malpractice Suits; Causes and Prevention, Dr. Wm. Estep, Loydsville.

A Year's Operations for Appendicitis, Dr. Dudley P. Allen, Cleveland.

A Case of Cirsoid Aneurism, Dr. W. D. Hamilton, Columbus, and Dr. L. S. Holcomb, Pennsville.

A Case of Aneurism by Anastomosis, Dr. J. C. Crossland, Zanesville.

Splenectomy, with the Report of a Successful Case, Dr. W. J. Conklin, Dayton.

Nephrectomy for Tuberbulosis, Dr. R. Harvey Reed, Columbus.

Gastrostomy; A New Method, Dr. M. Stamm, Fremont.

The Radical Cure of Hernia, Dr. F. C. Larimore, Mt. Vernon.

The Treatment of Uterine Fibroids as Indicated by their Natural History, Dr. C. A. L. Reed, Cincinnati.

Some Remarks on the Total Extirpation of the Fibroid Uterus, with Illustrative Specimens, Dr. Rufus B. Hall, Cincinnati.

Total Extirpation of a Pregnant Myomatous Uterus, with Specimen, Dr. C. N. Smith, Toledo.

Hysterorraphy, The Cure for Retro-deviation of the Uterus, Dr. F. D. Brandenburg, Cleveland.

Practical Application of the Principles of Sterilization, Dr. Hunter Robb, Baltimore, Johns Hopkins University.

Obstetrical Operations Involving Mutilation and Death of the Fetus, Dr. E. Gustav Zinke, Cincinnati.

The Treatment of Fractures in the Light of Advanced Histology and Pathology, Dr. Donald MacLean, Detroit.

Studies in Immunity and Treatment of a Specific Fever, *i. e.*, Hog Cholera, Dr. D. N. Kinsman, Columbus.

Is There a Better Remedy in Cholera? Dr. E. B. Fullerton, Columbus.

The Rationale of Systematic Elimination in the Treatment of Typhoid Fever, Dr. Robert Peter, Canal Dover.

Typhoid Fever, Dr. John E. Woodbridge, Youngstown.

The Modern Treatment of Typhoid Fever, Dr. Howard Jones, Circleville.

Syphilitic Spinal Paralysis, Dr. C. J. Aldrich, Cleveland.

Multiple Neuritis, Dr. Jos. Eichberg, Cincinnati.

The Symptomatology of Hereditary Syphilis, Dr. R. C. Longfellow, Cincinnati.

Acute and Chronic Diseases, Dr. J. R. Black, Newark.

Pneumonia, Dr. A. E. Bell, Zanesville.

The Phenomena of Fertilization and their Bearing on Heredity, Dr. J. Playfair McMurrich, Prof. Biol. Univ. Cincinnati.

Diseases of a Reflex Nature arising from Pathological Conditions of the Uterus and Appendages, Dr. Wm. H. Humiston, Cleveland.

The Importance of Determining Reflex Irritation in Catarrhal Processes, Dr. Jno. P. Sawyer, Cleveland.

The Effect of Obstructive Disease in the Upper Air Passages on the General Health, Dr. J. A. Thompson, Cincinnati.

Headache, Its Relation to Optical and Muscular Defects of the Eyes, Dr. S. C. Ayres, Cincinnati.

Sympathetic Ophthalmia, Dr. B. F. Templeton. Zanesville.

Diseases of the Cornea in Childhood, Dr. C. W. Tangeman, Cincinnati.

The Use of Plaster in Joint Diseases, Dr. T. C. Hoover, Columbus.

Subcutaneous Osteotomy with Cases. A New Osteotome, Dr. Willis W. Hall, Springfield.

Subluxation of the Knee, with Treatment, Dr. S. L. McCurdy, Dennison.

Fractures of the External Condyle of the Humerus, Dr. F. E. Bunts, Cleveland.

Practical Points in Ether Anesthesia, Dr. W. D. Porter, Cincinnati.

Rectal Abscess, Dr. Auguste Rhu, Marion.

Trephining, with Report of Cases, Dr. Leonard Freeman, Cincinnati.

Middle Florida as a Winter Resort for Invalids, Dr. F. D. Case, Ashtabula.

Tonsillitis. Dr. H. J. Noyes, McConnellsville.

A Case of Myxœdema, Dr. E. M. Fitton, Hamilton.

Valvular Disease and Chronic Rheumatism, Dr. W. W. Pennell, Frederickstown.

The Local Treatment of Cystitis, Dr. G. W. Morehouse, Sparta.

Cremation as a Means of Practical Sanitary Reform, Dr. Chas. P. King, Newark.

THOMAS HUBBARD, M.D., Secretary.

The Illinois State Medical Society.—The forty-fourth annual meeting will be held at Decatur, Illinois, May 15, 16 and 17, at Powers' Opera House.

Section One.—Chairman, Dr. T. J. Pitner, Jacksonville. Secretary, Dr. H. McKennan, Paris.

The Practice of Medicine, J. T. Stewart, Peoria.

Fashions in Medicine, G. W. Nesbitt, Sycamore.

Mistakes and Surprises in General Practice, I. L. Firebaugh, Robinson.

Diseases of Old Age, Prophylaxis and Treatment, E. B. Montgomery, Quincy.

Diabetes Mellitus—Some Statistics, N. S. Davis. Jr., Chicago.

Renal Calculus, G. F. Stericke, Springfield.

Atropin in Genito-Urinary Diseases, J. L. Reat, Tuscola.

Artero-sclerosis, with Cases, Frank Billings. Chicago.

Bradycardia, J. B. Walker, Effingham.

A Case of Heart Disease—Autopsy, W. C. Bowers, La Place.

Management of Valvular Heart Diseases, W. F. Waugh, Chicago.

Treatment of Neurasthenia, F. P. Norbury, Jacksonville.

Rheumatic Affections of Spinal Meninges and Nerves, C. Barlow, Eaton.

Nervous Symptoms in Adherent Prepuce, J. T. Pearman, Champaign.

Epilepsy, J. B. Maxwell, Mt. Carmel.

Physical Exercise as a Therapeutic Agent, C. E. Black, Jacksonville.

Elements of Uncertainty in Therapeutics, G. F. Butler, Chicago.

Maternal Impressions, M. P. Hatfield, Chicago.

Nursing Sore Mouth, C. B. Johnson, Champaign.

Section Two.—Chairman, D. W. Graham, Chicago. Secretary, Ellen H. Heise, Canton.

Surgical Shock: *a*, Its Physiology and Pathology, Lester Curtiss, Chicago; *b*, Differential Diagnosis and Elements of Prognosis, Wm. Barnes, Decatur; *c*, Treatment—What to Expect from Drugs, E. W. Weise, Ottawa.

Some Observations on Treatment of Fractures of the Neck of the Femur. Charles C. Hunt, Dixon.

Secondary Hemorrhage in Compound Fractures, Wm. J. Eddy, Shelbyville.

Peroxid of Hydrogen and the Results, F. C. Vandervoort. Bloomington.

Prostatic Obstruction: *a*, The Non-operative Treatment and General Management, Rufus W. Bishop, Chicago; *b*, The Operative Treatment, Lewis L. McArthur, Chicago.

Functional Results after Resection of the Head of the Humerus—Exhibition of a Patient, Wm. E. Guthrie, Bloomington.

Resection of the Head of the Humerus—Reports of Two Cases, F. C. Schaefer, Chicago.

Indications for Mechanical Treatment in the Various Stages of Hip Joint Disease, A. E. Hoadley, Chicago.

Some Common Errors in the Treatment of Infantile Eczema, Frank H. Montgomery, Chicago.

Cauterization of the Nares and Accidents that may follow, E. Fletcher Ingals, Chicago.

The Treatment of Otitis Media Purulente Chronica, Norvel H. Pierce, Chicago.

A Case of Empyema of the Sphenoidal Sinus, T. Melville Hardie, Chicago.

Progressia Myopia, with History of Cases, J. Elliot Colburn, Chicago.

Fibroid Tumors of the Uterus: *a*, Natural History, Lewis A. Malone, Jacksonville; *b*, Their Complications, Marie J. Mergler, Chicago; *c*, To What Extent are they Influenced by Medical Treatment, Walter Ryan, Chicago; *d*, The Palliative Operations and their Comparative Value, Fernand Henrotin, Chicago; *e*, Indications for the Radical Operations, Henry T. Byford, Chicago; *f*, The Radical Operations—A Review, with Description of Technique, Nicholas Senn, Chicago.

Should Lacerations of the Cervix Uterus be more frequently Repaired? A. R. Small, Chicago.

Report of Case of Tubal Pregnancy, with Operation, J. F. Percy, Galesburg.

Bifid Uterus—Pregnancy—Laparotomy, Wm. H. Harsha, Chicago.

A Case of Parotitis with Metastatic Metritis of a Pregnant Uterus—Miscarriage at Three Months, Charles W. Rook, Quincy.

Abortion: *a*, Prophylactic Management, J. C. McKinney, Barry; *b*, Management of Inevitable Abortion, C. W. Sibley, Fairfield; *c*, Management of Neglected Cases, Abby Fox Rooney, Quincy; *d*, The Sequalæ—Their Importance to the Gynecologist, Henry P. Newman, Chicago.

Present Status of Symphyseotomy, J. C. Hoag, Chicago.

Conduct of Natural Labor: *a*, In Hospital Practice, Sarah Hackett Stevenson, Chicago; *b*, In Country Practice, James E. Sutton, Canton.

Section Three.—Section on Etiology, State Medicine and Medical Jurisprudence. *Chairman*, George W. Webster, Chicago; *Secretary*, G. A. Zeller, Peoria.

What is the Proper Mode of Executing Criminals? M. S. Marcy, Peoria.

Emasculation and Ovariotomy as a Penalty for Crime and the Reformation of Criminals, Robert Boal, Lacon.

The Correction of Criminals by Education, W. R. Allison' Peoria.

Legislation for the Prevention of Blindness, Boerne Bettman, Chicago.

Evidences of Sanity in Criminal Cases, James D. Kiernan, Chicago.
Medical Expert Testimony, D. R. Brower, Chicago.
Contagious Diseases occurring in the Public Schools, B. M. Griffith, Chicago.
Needed Sanitary Legislation, A. R. Reynolds, Chicago.

The British Institute of Public Health.—Preliminary program. Congress in London from July 25 to July 31, 1894.

Honorary President: The Right Hon., the Lord Mayor of London.

President: Prof. William R. Smith, M.D., D.Sc., F.R.S. Edin., Barrister-at-Law; Professor of Forensic Medicine and Director of the Laboratories of State Medicine in King's College, London; Medical Officer of the School Board for London.

Vice-Presidents: His Grace the Archbishop of Canterbury; His Eminence the Cardinal Archbishop of Westminster; His Grace the Duke of Westminster, K.G., Lord Lieutenant of the County of London; the Right Hon. and Right Rev. the Lord Bishop of London; the Right Hon. the Lord Mayor of Dublin; the Right Hon. the Lord Mayor of Belfast; the Right Hon. the Lord Provost of Edinburgh; the Right Hon. the Lord Provost of Glasgow; the Right Hon. the Lord Provost of Aberdeen; the Right Hon. the Lord Provost of Dundee; Sir Stuart Knill, Bart., LL.D., Master of the Worshipful Company of Plumbers; Sir Richard Webster, G.C.M.G., M.P., Q.C., Prime Warden of the Worshipful Company of Goldsmiths; Sir John Simon, K.C.B., LL.D., D.C.L., F.R.S.; Sir Joseph Fayrer, K.C.S.I., M.D., LL.D., F.R.S.; Sir George Buchanan, M.D., LL.D., F.R.S.; Sir Charles A. Cameron, ex-Pres. R.C.S., Ireland; Sir T. H. Johnson, Master of the Worshipful Company of Drapers; Sir A. K. Rollit, Chairman of the Council of the Association of Municipal Corporations and President of the Chamber of Commerce, London; Professor Sir Douglas Maclagan, M.D., Pres. R.S. Edin.; Sir Benjamin Ward Richardson, M.A., M.D., LL.D., F.R.S.; Henry Duncan Littlejohn, Esq., M.D., LL.D., Medical Officer to the Board of Supervision for Scotland, Medical Officer of Health to the City of Edinburgh; Edward Frankland, Esq., Ph.D., D.C.L., F.R.S.; Alderman J. Voce Moore, Sheriff of the City of London.

Honorable Treasurer: J. C. Dimsdale, Esq., Alderman and Sheriff of the City of London.

Honorable Secretary: Henry C. Jones, Esq., Clerk to the Board of Works for the St. Giles District; Hon. Solicitor to the Incorporated Society of Medical Officers of Health.

The following is a list of the Sections of the Congress, with the Honorary Secretaries:

A—PREVENTIVE MEDICINE.

Sectional Discussions have been arranged on the following subjects:

Diphtheria, its Mode of Spread, and Methods of Prevention; the Alleged Aerial Diffusion of Smallpox; the Dissemination of Disease by River Water; the Prevention of Phthisis; the Microörganisms in Sewer Air.

Honorable Secretaries, F. J. Allan, Esq., M.D., F.R.S., Ed., Medical Officer of Health for the Strand District, London, W.C.; J. W. Mason, Esq., M.D., Medical Officer of Health for Hull; Phineas Abraham, Esq., M.A., M.D., Hon. Sec. National Leprosy Fund, 2 Henrietta Street, Cavendish Square, London, W.

B.—CHEMISTRY AND CLIMATOLOGY.

Sectional discussions have been arranged on the following subjects:

Air Pollution; Chemical Treatment of Sewage; The Examination of Potable Waters; Working of the Food and Drugs Act.

Honorable Secretaries, B. Dyer, Esq., D.Sc., Hon. Sec. to the Society of Public Analysts, 17 Great Tower Street, London, E.C.; G. N. Huntley, Esq., Assoc. R.C.Sc. Lond., Demonstrator of Public Health, King's College, London.

C.—NAVAL AND MILITARY HYGIENE.

Sectional discussions have been arranged on the following subjects:

Ambulance Organization; Exhibition of Various Forms of Ambulance with Demonstrations; Meeting of Volunteer Medical Officers Association.

Honorable Secretaries, Surgeon Lieut.-Col. J. M. Beamish, M.D., D.P.H., Medical Officer in Charge of Royal Arsenal, Woolwich; A. H. Cheatle, Esq., F.R.C.S. Eng., Assist. Surgeon, King's College Hospital, London, Surg.-Lieut. Third Vol. Batt. The Queen's Own (Royal West Kent Regiment).

D.—MUNICIPAL AND PARLIAMENTARY.

Sectional discussions have been arranged on the following subjects:

Public Abattoirs and the Inspection of our Meat Supplies; The Utilization of Towns' Refuse for the Reclamation of Land by Aid of the Unemployed; The Registration of Plumbers; The Training and Qualifications of Sanitary Inspectors; Cholera and Port Sanitary Authorities, a Question of National Expenditure.

Honorable Secretaries, A. MacMorran, Esq., Barrister-at-Law, 2 Elm Court, Temple, London, E.C.; J. M. Robinson, L.L.D., Solicitor and Clerk to the Shoreditch Vestry, London.

The meetings of the Congress will take place by the kind permission of the Council, in King's College, London.

Members of the Congress will attend in their official or academical robes, meeting at King's College at 9:45 A.M.

Membership of the Congress is free, as follows: Members or Associates of the Institute; to others $2.50 (10s. 6d.).

MISCELLANY.

St. Louis is to have a hospital exclusively for colored people.

First Pan-American Medical Congress.—The reports in full of the transactions of the first Pan-American Medical Congress are in the hands of the public printer.

University of Buffalo.—The Medical Department of the University of Buffalo, held its annual commencement May 1. There were sixty graduates.

A Fee of Five Figures.—According to a statement in the New York *Sun*, Dr. E. L. Keyes received $60,000 for his four months trip on the yacht, *Valiant*, while attending its owner, Mr. Vanderbilt.

Female Athletes Oppose Vaccination.—Miss Robusta M Strong was asked why it was that she and so many other physically cultured young ladies declined to be vaccinated. Her reply was: "I do not see how I can give up my Indian clubs—and then, you know, I can't possibly spare my bicycle."

Central Dispensary and Emergency Hospital.—At the annual meeting of the contributing members of the Central Dispensary and Emergency Hospital, at Washington, D. C., held Friday the 27th inst., the following were elected as members of the Board of Directors to serve for three years: Dr. G. L. Magruder, W. W. Johnston, E. L. Tompkins, James Kerr Mason, Henry F. Blount, H. L. West, E. Kurtz Johnson and Miss Waite. The annual statement of the work of the Hospital was presented.

The Appointment of Charcot's Successor.—The *Lancet* letter from Paris states that Dr. F. Raymond will, without doubt be given the chair of the late Professor Charcot. He is the first choice of the Committee of the Faculty, Dr. Dejerine standing second, and Prof. Brissaud third, although the latter has had the opportunity of filling the professorate *ad interim*. Dr. Raymond is in his fiftieth year. He is known as a clinician at La Charité and as the author of a text-book on diseases of the nervous system, muscular atrophies and amyotrophic diseases. He has also made a report to the Ministry of Public Instruction regarding the diseases of the nervous system among the Russians.

An Origination of Rural Malaria found in Potable Waters.—Dr Richard H. Lewis, of the North Carolina State Board of Health, has prepared a circular letter for the medical men of his State, regarding the influence of well water in the production of fever and ague. He gives a homely illustration in the recited history of two families who resided as next-door neighbors, in one of the eastern towns of his State. The two families each contained two adults—father and mother—and seven children. The two families were friendly but their homes were sufficiently separated to require inde-

pendent water supplies for each. One family drank from what was regarded with pride as "the best well in town;" the other of rain-water caught in wooden tanks. The members of the first family were constantly sick with malarial disease of one kind or another. Those of the second never had even a chill.

It is the wish to build up a line of testimony, of a like character, if such can be obtained through the medical men of North Carolina. To this end, he has written the appended letter giving an invitation to a coöperative study of the well water origin of malarial diseases:

Dear Doctor:—The evidence that malarial diseases are introduced into the system in many, if not most instances, through the medium of the drinking water is, to my mind, conclusive. The water containing the germs or plasmodia is surface or superficial soil water. Those living in malarial districts who confine themselves to water from cisterns or wells driven or bored beneath the stratum of marl or impervious clay—in other words, beyond the water which soaks down from the surface—are to a large extent free from attacks. If the people of our eastern counties could be generally convinced of this fact and thereby induced to act upon it, the health conditions of that really fine section would be revolutionized for the better. To bring this about is the object of the Board of Health. In order to do this, facts must be presented to them in the concrete—not by illustrations from "Asia and Spasia and t'other side 'o Hillsborough," so to speak, but by instances from among their own neighbors. I write to ask you if you know any facts bearing on this subject and, if so, that you will write them to me in detail at your earliest convenience. Give me the name and postoffice of the head of the family having the experience. If not personally familiar with the facts send me the name and address, that I may write to him direct.

The Maryland State Medical Faculty.—The Baltimore *Medical Journal* congratulates the faculty on the fact that its efforts on behalf of legislation to reduce the dangers of blindness among the newborn have met with success. Maryland is now the fifth State that has adopted this form of preventive legislation, the other States in their order of historical precedence being New York, Rhode Island, Maine and Ohio. The members of the Maryland Faculty who have acted as a committee to promote legislation, were Drs. Woods, Rohé, Friedenwald and Michael. Senator L. C. Carrico, M.D., was sponsor for the bill, before the last legislative session, by which it is made the duty of midwives and nurses to report to a medical man, if there be none in attendance upon the infant whose eyes become swollen and discharge "matter." The age of infant is specified as under two weeks to which this Act is made to apply. The object of paramount importance is to compel non-medical persons to report ophthalmia cases without delay; also to induce them to pay a closer attention to cleanliness, and guard the eyes of the newborn for whose well-being they may chance to be responsible. In the second place the Act accentuates to a certain proportion of our profession the need that devolves on it to instruct the midwife and others as to the perils to vision that attend upon delay and neglect. Another question that, according the Maryland *Medical Journal*, has arisen more than once in the current discussion, is: "Can all physicians treat the trouble properly? A little self-examination is in order. We think ophthalmia neonatorum is a disease whose treatment no medical man has a right not to know. Exceptionally a case may be incurable; but such a case is very exceptional. Of eyes lost, neglect or bad treatment can be found in a large majority. A disease so serious as to receive special legislation in five States demands attention from every practitioner."

We have reason to believe that this rather slowly moving reform will not stop where it is, but will advance more rapidly in the next two or three years. The profession at large should take it up and encourage it.

Barnes Medical College.—At a meeting of the Faculty the following resolutions were passed:

WHEREAS, It is the desire and purpose of the Faculty of the Barnes Medical College to aid in advancing the standard of medical education in every prudent and proper way; and,

WHEREAS, It is desirable, from an educational and humanitarian point of view, to fully qualify those who offer to take charge of so delicate a structure as the human body, and of so valuable a thing as human life; and,

WHEREAS, The extensive departments of Medical Biology, Chemistry, Toxicology, Microscopy, etc., now parts of all well equipped modern medical institutions, require so much more of time and labor to master than has been hitherto devoted to them in our medical colleges; therefore be it

Resolved, That, in order to afford to the teacher and student alike, such time as is necessary to complete a proper curriculum in each department of medicine, "of all regular medical students who intend graduating at the Barnes Medical College at the close of the session of 1899 and 1900, and in all subsequent classes, four years medical study and attendance upon four regular courses of medical and clinical lectures of not less than five months each, shall be required." Provided, that graduates of literary colleges, who have taken a course of scientific study, graduates of schools of pharmacy, and graduates of schools of dental surgery, may be admitted to the second year's work and course of lectures without examination.

Resolved, That we instruct the delegate of the Barnes Medical College to the meeting of the Association of American Medical Colleges, to be held at San Francisco, Cal., on June 5, 1894, to vote upon all questions arising before that body, in accordance with the above resolution, and to use all honorable means to secure the unanimous adoption (by all colleges), of requirements for graduation of students, of *four regular courses of lectures* of not less than five months each in different years.

THE PUBLIC SERVICE.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from April 28, 1894, to May 4, 1894.

Major PETER J. A. CLEARY, Surgeon, so much of par. 13, S. O. 79, A. G. O., April 3, 1894, as assigns him to duty at Ft. Wingate, N. M., is revoked.

Major CALVIN DE WITT, Surgeon, is granted leave of absence for two months, to take effect on or about May 1, 1894, with permission to go beyond sea.

Capt. EDWARD EVERTS, Asst. Surgeon, is granted leave of absence for two months, on surgeon's certificate of disability, to take effect when his services can be spared, with permission to leave the Department of the Colorado.

Capt. C. N. BERKELEY MACAULEY, Asst. Surgeon, is relieved from duty at the U. S. Military Academy, West Point, N. Y., and ordered to duty at Ft. Wingate, N. M., relieving Major WASHINGTON MATTHEWS, Surgeon, who, on being thus relieved, will repair to Washington, D. C., and report in person to the Surgeon-General, for temporary duty in his office.

LETTERS RECEIVED.

(A) Alma Sanitarium Co., Alma, Mich.; Ashmead, A. S., New York, N. Y.

(B) Bates & Morse Advertising Agency, New York, N. Y.; Blackwell, Henry, New York, N. Y; Byford, H. T., Chicago, Ill.; Brainard, B. F., Kansas City, Mo.; Billings, J. S., Washington, D. C.; Bowers, J. E., Duluth, Minn.; Beman, W. W., Ann Arbor, Mich.; Bate, R. A., Louisville, Ky.

(C) Chambers, J. H. & Co., (2) St. Louis, Mo.; C. N. Crittenton Co., New York, N. Y.; Chicago Policlinic, Chicago, Ill.; Chesman, Nelson & Co., (2) St. Louis, Mo.; Crothers, T. D., Hartford, Conn.

(D) Dunglison, R. J., (4) Philadelphia, Pa.; Davis, E. W., Wichita, Kansas; Dunlap, H. M., Battle Creek, Mich.

(F) French, Pinckney, St. Louis, Mo.; Fitzpatrick, T. V., Cincinnati, Ohio.

(H) Herendeen Manufacturing Co., Geneva, N. Y.; Hudspeth, G. W., Little Rock, Ark.; Hanson, A. H., Chicago, Ill.; Hägler, E. E., Springfield, Ill.; Hummel, A. L., Philadelphia, Pa.

(J) Jay, F. W., Chicago, Ill.

(K) Kimball, H. H., Minneapolis, Minn.

(M) Medical Echo Pub. Co., Lynn, Mass.; Mathewson, J. O., Hot Springs, Ark.

(N) Newton, Geo. W., Chicago, Ill.

(P) Post Graduate Med. School, New York, N. Y.; Pratt, J. W., Boston, Mass.; Post Graduate Med. School, Chicago, Ill.; Pleak, S. M., Lebanon, Ohio; Putnam, M. P., Boston, Mass.; Putnam's, G. P., Sons, New York, N. Y.

(R) Rochelle, W. F., Jackson, Tenn.; Rodman, W. L., Louisville, Ky.; Rumbold, T. F., San Francisco, Cal.; Reddick, J. T., Paducah, Ky.; Remondino, P. C., San Diego, Cal.

(S) Skilles, H. R., Chicago, Ill.; Scott, J. W., Springfield, Ill.; Sherman, W. P., West Pullman, Ill.; Starkey, H. M., Chicago, Ill.; Swaney, H. N., Grand Ledge, Mich.; Sauer, F. Nicolas, Racine, Wis.

(T) The Mercer Chemical Co., Omaha, Neb.; The H. & W. B. Drew Co., Jacksonville, Fla.; Terry, J. W., Englewood, N. J.; The American Physicians' Sanit. Association, Washington, D. C.; The Sanitarium, Battle Creek, Mich.

(V) Vose, George F., Baltimore, Md.

(W) Willson, H. B. & Co., Washington, D. C.; Winn, Geo. L., Rockford, Ill.; Wyckoff, R. M., (2) Brooklyn, N. Y.; Warner, Wm. R. & Co., Philadelphia, Pa.

PAMPHLETS RECEIVED.

Epilepsy—Its Curability Established. By A. G. Selman, M.D.

Report of Jefferson Medical College and Hospital. 1893.

Children's Rights. An Address. By I. N. Love, M.D.

The Diagnostic Value of Ehrlich's Diazo Reaction. By C. L. Greene, M.D.

Need of Care in the Diagnosis of the Spitting of Blood. By James D. Morgan, M.D.

Castration of Sexual Perverts. By F. E. Daniel, M.D.

Anomalies of Refraction and of the Muscles of the Eye. By Flavel B. Tiffany, M.D.

On Guaiacol applied Externally as an Antipyretic. By Julius Friedenwald, A. B., M.D.

Subvolution—A New Pterygium Operation. By Boerne Bettman, M.D.

Ripening of Immature Cataracts by Direct Trituration. By Boerne Bettman, M.D.

The Spectacle Treatment of Hypermetropia. By Boerne Bettman, M.D.

Program Marion County, Ind., Medical Society. 1894.

Das Codeïn in der Therapie. Published by Knoll & Co., Germany.

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ADDRESSES.

ORGANIZATION A NECESSITY FOR PROFESSIONAL PROGRESS.

President's address, delivered before the Michigan State Medical Society at its annual meeting, held in Lansing, Mich., May 3–4, 1894.

BY EUGENE BOISE, M.D.

GRAND RAPIDS, MICH.

That professional progress, or the advancement of the interests and reputation of the science of medicine is to be desired, we all admit, but how it shall be attained is a problem that has not yet met with a satisfactory solution. It is evident that it must be along certain lines, prominent in which are a higher standard of education, and a higher standard of professional morals, as well as advancement in therapeutic resources.

At present the title, "Doctor in Medicine," in this country does not indicate any degree of literary or scientific excellence in the holder. It does not necessarily mean that he is one whose fitness to care for the physical trials and sufferings of his fellowman has been passed upon and established by a body of competent examiners, but that he is one who has either assumed to himself the title, or one to whom it has been given by a corporation legally chartered by some State Legislature.

In either case there is none to say him nay. In many States, after laborious effort, an imperfect law has been enacted, purporting to protect their citizens from the dangers consequent on the predatory instincts of him to whom the practice of medicine is merely a road to wealth. But so open is the network of these laws, and so indifferent are they whose duty it should be to enforce them, that many slip through and prey upon the public upon whose fitness no corporate college has passed judgment. The facility also with which charters are granted by our unstable Legislatures to any body of men for any or every conceivable purpose, without inquiry as to necessity or even expediency, enables any unprincipled individual whose fancy has pictured to him the enormous revenue to be obtained by "practicing medicine," to acquire legal status among physicians with the slightest appreciable outlay of time, money and industry. The possession of any degree of preliminary education, of the acquirement of any appreciable amount of medical knowledge, is only of importance as a means to an end; and that end the legal right to call himself doctor, and to collect fees from the credulous but innocent public.

Such is the condition in nearly all of these United States, and such will it remain till the honest and honorable members of this profession of medicine unite, all over the country, to establish some method by which there shall be some distinction between the man who practices medicine for revenue only, and him who holds the welfare of his patient and the honor of his profession as his highest earthly ambition.

We, the State Society, profess to stand between the public and fraud. Let us make the profession reality. Let us establish a standard entirely apart from that recognized by law or by any chartered medical college. A standard that embraces more than the possession of a certain amount of medical and surgical lore. One that shall stand to the public as a warrant that the physician who holds a certificate of membership in this body is in all respects entitled to its confidence.

The first and highest qualification of him who is to hold the lives and physical welfare of others in his care should be thorough professional education and training. To the attainment of this, a *habit* of study is necessary; therefore a grade of preliminary education should be demanded which shall be a warrant that habits of study have been formed; that the power to grasp and hold ideas has been cultivated; that a certain amount of trained analytical power has been acquired, so that logical inferences and conclusions can be drawn from existing facts. The young man who steps forth from his college into the world's arena may be called upon at once to grapple with the most serious surgical emergencies, or to wrest human lives from the threatening death consequent on a placenta prævia, and this without time to call upon the older experience of others. It is not enough for him, or for his patient at that time, that his diploma narrates the fact that he has consumed three years in getting his education. Happy is he and thrice fortunate is his patient if his habits of study and his professional pride and ambition have been such as to have enabled him to master the teachings of his professors and to have the knowledge within call of his mind at such time. Nor will the man who is by ability and character fitted to be a member of this body, be content with the knowledge gained while within his college walls.

The true physician will be an inquirer during life. He will, by the force of his own aspirations and impulses, be a searcher after knowledge. He will study the experiences of others as embodied in the weekly or monthly journals, will reason from their reports to his own experience, and as the science advances will put aside views formerly held and grasp that which has been proven. No physician can be progressive who does not, by the reading of medical journals, keep in touch with the thought and experience of the great body of the profession. No conscientious practitioner can feel that he is living up to the highest possibilities of his profession, and doing his full duty to those who intrust their lives to his keeping, who contents himself with the lessons of his own experience and the teachings of former text-books. Professional progress demands constant study.

But for those who by education and industry are fitted to hold the responsible and honorable degree of "Doctor in Medicine," other qualifications should be required to enable them to hold membership in this State organization.

One of the most difficult and yet most vitally desirable virtues for a physician to acquire, if he is so unfortunate as not to possess it, is a recognition of what should be his deportment toward his professional brethren.

If we will place our profession on the heights originally destined for it; if we will make the name of physician honorable and its bearers honored, professional courtesy must stand on a plane but little, if any, lower than professional education.

We must demand that he who will become a member of this organization shall so conduct himself toward his brethren as to add dignity to the profession of medicine, instead of degrading it to the level of low trickery and dishonesty. While there are many who know no other way to rise than by pulling down those above them, many who by openly expressed jealousies and calumnies of their professional brethren have rendered just the remark that was made to me not long ago by a Jewish merchant: "You doctors are worse than Chatham Street Jews;" (let your minds dwell for a moment on the full significance of that remark), I say, while there many who, by their conduct toward their fellow workers, have justified this public opinion, there are a great many, aye, a great majority whose impulses are honorable, whose desire it is to live in harmony or in a spirit of friendly rivalry with their fellows. These by organized effort could so elevate the standard of professional dignity as to implant in the thoughts and hearts of the most dishonorable and mercenary practitioners, a feeble spirit of emulation.

"Harmony and a proper *esprit du corps* may uphold the dignity of even an inferior profession; but the public rarely respects any class of men, the members of which have no respect for each other."

Nothing is to be gained by slanders and calumnies of those in the same profession. There only results (unless the slanderer is lost to all sense of honor and professional pride) a loss of self-respect, a loss of respect on the part of others, and a public degradation of the profession of which he is, unhappily, a member.

Again, by such organization as I have in mind, a stronger stand against the inroads of irregular practitioners would be possible. I doubt very much whether we do not sometimes injure our cause with the public by showing too great sensitiveness as to the tolerance shown such men and by injudicious efforts at their suppression.

"A certain portion of mankind are so constituted that they require to be ridden by others; and if you succeed in unhorsing a particular impostor, it is only to prepare the saddle for a fresh and more unflinching equestrian." By throwing the gauntlet at an insignificant man we at once raise him to the dignity of a competitor.[1]

But apart from our conduct toward pretentious impostors, whom we should utterly ignore as something beneath notice, our conduct toward each other should be marked with dignity and honesty. The professional intercourse of men qualified to bear the title, "Doctor in Medicine," should be characterized by a spirit of friendly emulation and honorable support.

"Medicine, cultivated as a science, aims by innumerable influences to unite its members in a universal brotherhood, and that fraternity should be one of perfect equality. There can be no class privilege, no aristocracy, and no distrust among medical men who properly estimate the honorable character of their calling.

"They will accord to each new member that generous confidence and fraternal regard which are due to brethren bound together by a common sympathy. Nor will that bond be broken, nor that confidence destroyed except by the most absolute proof of professional delinquencies."[2]

But no man can respect his professional brethren in whose breast is not implanted a feeling of reverence and love for his profession. It is his duty to maintain in his individual character a high moral rectitude, a just and honorable conduct, a devotedness to the welfare of his patients, and an unceasing effort to improve himself and his science.

Our profession demands from us respect and honor. It demands the best service of our lives. To live worthy of the profession we have chosen should be next to our religion. That its name shall not be dragged in the dust and trampled upon by all men, it is incumbent upon us, its disciples, to dignify it by lives of professional purity and honor; and by untiring effort to plant its standard still higher.

Hippocrates said (and his remark may unhappily apply to our own times): "Medicine is of all the arts the most noble; but owing to the ignorance of those who practice it, and of those who inconsiderately form a judgment of these, it is at present far behind all other arts." But in our own times it is not merely ignorance on the part of the doctor and the public that has degraded the profession; many other factors have combined to that end. One of the most potent of these is the degeneration of the doctor himself, by reason of his having placed the acquisition of wealth far higher in his desires than the acquisition of knowledge. Cupidity is one great obstacle to professional progress. It stands in the way of the search for more advanced truths. The physician who falls under its power is led into evil practices and unprofessional associations by which his profession, which he should honor with his every power, is degraded to the level of the merest trade.

The spectacle of a man who bears before the public the honorable title of Doctor in Medicine, selling his honor and reputation to the highest bidder and giving testimony in a court of justice which dishonors his profession and degrades its followers is one that merits universal condemnation. An undue desire for wealth blunts a man's professional conscience and lowers his standard of life. Just remuneration for skilled service is right and honorable, but it should not blunt the sense of professional honor; nor displace the desire for professional eminence.

The science of medicine has a right to the first place in the love and devotion of its followers. The struggle for "success" as represented by the largest income or the most fashionable *clientelé* often leads to a forgetfulness of or a disregard for "success" according to the standard of educated men.

[1] Bigelow, "The Medical Profession and Quackery."

[2] Dr. Stephen Smith, "Our Status Abroad."

There is a moral in the remark made by a distinguished Parisian surgeon to an American friend who was speaking of the great reputation of his preceptor: "What has he done?" asked the Parisian; "I do not remember to have read of any of his writings." The American responded in a puzzled way: "It is true he has never written anything, but he has a very large business." "And is that the standard by which you estimate professional excellence?" retorted the Parisian.

A man may by his ability and by his professional traits rise to the highest pinnacle of local public esteem. His reputation as an able successful practitioner may be merited, but his profession demands something more from him. He is not living up to his professional duty if he does not endeavor to enrich the field of professional knowledge by the ripe results of his own investigations and experiences. If he, by writings and contributions to professional journals, gives to his fellow physicians the valuable knowledge which he is continually gathering, his reputation is imperishable. But if he lives content with the wealth he can acquire, his name and his fame die with him.

Every man, if he would have the respect of the public, must respect his profession. He must honor it if he would be honored by it. He must remember that it depends on how he bears himself whether he is the peer of the highest or the barely tolerated servant of the public. As Dr. Oliver Wendell Holmes puts it,—

"If Sir Astley Cooper was ever called to let off the impure ichor from the bloated limbs of George the Fourth, it was the king who was honored by the visit and not the surgeon. If you do not feel, as you cross the millionaire's threshold, that your art is nobler than his palace, the footman who lets you in is your fitting companion, and not his master."

But it is not merely that the relations of physicians to each other would be raised to a higher standard by such thorough organization of the best elements in the profession as I am advocating; nor that thereby our respect for, and attitude towards our profession would be advanced, but that the relations between the public and the medical profession would be gradually changed.

We should enter upon an era when to this organization and its individual members the people would naturally look for advice as to matters pertaining to the public health.

The physical training of our youth, and the relation of the physical to the mental well-being would be placed under the supervision of those who by reason of their membership in this Society would be esteemed and accepted as qualified censors in such matters.

It is the duty of rational medicine to enlighten the public, as well as the profession, in regard to the true powers of the healing art.

The people deserve to be undeceived and re-educated that they may know what is true and trustworthy from what is unfounded and fallacious.

The profession themselves will proceed with greater confidence and self-approval in proportion as they shall have informed mankind on these important subjects. Honesty toward ourselves and the public will encourage trust and confidence in return. The physician who can forget, for the time, his own pride and professional ambition in his desire to deal honestly with his patient, will ultimately win from his patients and the community at large such reputation as shall afford more satisfaction to his professional instincts and aspirations than a lifetime of selfish effort will attain. Mistakes are made, reputations are injured, and the profession itself brought into disrepute by the habit of promising more than we know we can perform. Our profession is often brought into disrepute and made unpopular with a large and sagacious part of the community because so many members, by unfulfilled promises, have disappointed expectations which they have allowed themselves to raise. We may safely undertake and promise to cure diseases which we know to be curable, and to perform what art and science can do towards conducting doubtful and dangerous cases to a happy issue, and we will thus cultivate confidence and elevate our profession.

It should be every man's ambition to elevate the standard of his profession among his brethren and in the estimation of the public; and to gain such eminence as he may by upright conduct toward his fellows, by honesty to the public and by literary and professional industry. No man can permanently sustain his status among gentlemen if he do not first secure to himself the sympathy and respect of his fellow laborers. This being attained, he can by laborious effort and persevering industry rise to eminence in his profession and acquire the honest regard and respect of his fellow citizens. He can live an honored and envied life and build to himself that grandest of monuments, a name that will live forever in the annals of his profession and in the hearts of its disciples.

If, on the contrary, his ambition is confined to himself, and his conduct to his fellows and the public regulated only by his estimation as to how everything may be made to serve selfish aims, and to redound to his own personal aggrandizement, he alienates his fellows, he dishonors his profession and he defrauds the people who trust him. His practices become corrupt, and driven by the scourge of his own outraged personal self-respect, he descends continually to lower levels. Pitiable, indeed is the condition of that man who is shunned by his *confrères*, whose name provokes only contempt, and who is dismissed from the thought as one fallen from the high estate of a Christian gentleman and an honorable man.

And yet such there are in our profession. Such there are whose names are enrolled as members of this Society, and who thereby, to the great mass of the citizens of this State, are indorsed as the peers of those whose names are endeared to us by long lives of honest and honorable professional effort.

Such things should not be. Our profession demands of us that we should countenance only that which is honorable. That we should never forget its claims and our duties. The public have a right to demand of us that we shall point out to them those who are worthy of confidence; those to whom they can intrust the lives of their children. And finally, an honorable and proper pride demands of us that we shall do what we may to purify the name, "Doctor in Medicine." This is possible, but only possible by means of re-organization on the lines that I have pointed out. Do not imagine that I am dreaming of a professional Utopia "where every prospect pleases," and even man's not vile. There will

be in every Eden a serpent. There must needs be men who, with the outward semblance of honesty, cover dishonorable characters; but we can make the manifestation of such dishonesty unpopular. We can educate the public to a belief in the reality of our profession and the nobility of our art. There are enough physicians in this State, to whom their profession is dear, to rehabilitate the name, "Doctor in Medicine," if they will act together. This can only be done through organization; not merely into societies, but in such a way and according to such plan as shall unite the profession of the entire country in one bond, under one government, and designated by such title as shall be distinctive.

It is true that we have a national organization, and that we have State organizations, and innumerable minor or local societies, but there is no concert of action, no community of interests, except that the members of all legally bear the title, "Doctor in Medicine," and all agree to conform to the Code of Ethics of this national organization. There is need that we re-organize so that all may be under one central government and act as one body. It must be with any member of any county society as it is with the private soldier in the United States Army. By enlisting as a private soldier, he becomes a member of a company, and at the same time and by the same act, a member of a regiment, a brigade, a corps, etc., so that he is directly under the control of the Commander in Chief of the Army of the United States. After some such plan might the medical profession of this country be organized. We may not be able to remove at once from our societies those members who through dishonorable practices degrade their profession, but we can protect our domain from further incursions.

Such organization as I shall suggest will enable the American Medical Association to erect such defences as it chooses, and to dictate authoritatively who may and who shall not be admitted to its highest privileges. It can not control the acts of legalized medical colleges as to what preliminary education they shall demand of their students, nor can it dictate to them how long and of what character their course of study shall be, but it can say what qualifications of education and conduct shall be necessary to enable an applicant to join its membership. At present each State has its own State society, and in this, our State of Michigan, there are some twenty-five local societies. But there is no mutual interdependence. Each organization is independent of every other. There can be no concert of action throughout the nation or even throughout the State, because there is no central universal government.

I have said we might organize in some respects according to the plan of our Army. It would be well that every local society should be a part of our State society, and not merely in name but actively, and under its government. And that every State society should be a living constituent of the National organization, and that no local or county society should be represented in the national society, except through its State organization. It would be well also that every man, by joining a local society should by that same act become at once a member of the State and national societies, and that no man can become a member of either of these societies except through joining a society in the county or district where he resides. Thus would these local organizations stand guard at all the avenues of entrance, first to the State society and, second to the American Medical Association, and fewer unworthy men would find entrance.

To the annual dues demanded by and payable to the local society, would be added $3 for the State and $5 for the National organization, and every member would not only be a member in name of these organizations, but he would be entitled to, and receive their Annual Transactions. He would also bear the title of "Fellow of the American Medical Association," which could thus be made to stand to the public and to the profession of the world as a title of honor and a guarantee of professional worth; on a plane as high as, or higher than, the F.R.C.S. of the British profession.

It might be well also, in this plan of re-organization, that the presidents of the local societies in the State, which are in affiliation with the State society, should constitute an Advisory Board of the State Society, to which all matters pertaining to the admission of members and the government of these local societies should be referred. This Board might also be the executive organization of the State society, through which many matters of routine which now take up the time of the entire society, could be transacted. Thus more time could be devoted to literary and professional work, and not only the number of papers, but the standard of excellence increased.

It would also follow, if the profession of all the States should organize on the same general plan, that the presidents of the various State societies would constitute an Advisory Board (if I may so term it) of the National organization, which should have general supervision over matters pertaining to the government of the State societies, and which should formulate rules controlling the admission of members to these smaller county and district societies. In this way would uniform rules in all the States be secured, and the standard could be placed as high as seemed desirable. It is probable, also, that such rules and regulations would be respected by the local societies to which they would be directed, because formed by a Board of State officers, elected through delegates from these various local organizations.

By such a plan as I have outlined, the qualifications of education and character necessary to become a "Fellow of the American Medical Association" would be uniform throughout the country, and could be placed high enough to stand to the public as a guarantee of the fitness of such men to practice the profession of medicine. The membership of the State societies might be doubled, and instead of five thousand members of the American Medical Association the number might easily be twenty thousand.

The financial condition of these societies would be sufficient to enable them to carry on all desirable lines of professional work. The desirability of being able to write himself a "Fellow of the American Medical Association" and thus stand before the public indorsed by the best elements of the profession throughout the entire country, would be sufficient inducement to make most physicians live up to the requirements of their societies and promptly pay their annual dues.

The standard of medical education would necessarily be raised to conform to the requirements of

the national society, because, while we could not legislate against or indorse any college or set of colleges, we could require each applicant for membership to be a graduate of a college that required a four years' course, or to conform to some similar standard. If laws were needed to regulate the practice of medicine, we should be in a position to secure uniformity throughout the entire country.

It would not be long before the public would understand that to be a "Fellow of the AMERICAN MEDICAL ASSOCIATION" was a certificate of such professional ability as would enable its possessor to grapple with any disease, however intricate, or to meet any emergency, however sudden. That its holder was a gentleman in his professional life, and one who would be a reliable guide in all matters pertaining to the physical well-being of his patients.

Thus would the science of medicine be continually advanced, not only in the estimation of the public, but, what is far more important, in the estimation of the members of the profession. There would be an incentive to honest effort toward professional growth and toward honorable professional intercourse.

The acquisition of wealth would not be placed far above all other motives. Honor and honesty would co-exist with a desire for an advancing reputation in the professional world and the science of medicine would attain the position to which it is entitled.

THE NATION'S SIN OF OMISSION.

Read before the Texas State Medical Association at Austin, April, 1894.

BY T. J. BENNETT, M.D.

AUSTIN, TEXAS.

CHAIRMAN SECTION ON STATE MEDICINE AND PUBLIC HYGIENE.

The Constitution of the United States guarantees to every citizen life, liberty and the pursuit of happiness. The laws of the country have been framed by wise men, after careful study and observation, looking to these ends; and, in a sense, every enlightened government is "paternal." It is jealous of any infringement of these rights, and the humblest citizen can claim, and through the courts receive, protection in his life, liberty and property; and any trespasser upon either is swiftly punished. The arbitrary arrest, in a foreign country, of the humblest person claiming protection of the stars and stripes, is resented, his liberty secured, and restitution demanded, and the demand is backed, if need be, by the whole military and naval power of the country.

The laws in respect to life and liberty, and in regard to peaceful possession of one's own, and the enjoyment of the fruits of his labor, have been amended and made better, as time and experience have revealed defects, and as changed conditions have made necessary.

The laws with regard to special privileges are framed with an eye to the protection of the life, liberty and property of others, and of society generally. No man is permitted to conduct a business the nature of which threatens society with danger; such, for instance, as the running of railroad trains and steamboats, and the operation of factories, mills and shops; and such conditions are attached to the privilege, when granted, as to reduce the danger to others to the minimum.

In return for this protection and paternal guardianship, the citizen is taxed to carry on the operations of the machinery of government, and certain duties are required of him, all of which are duly specified, and made compulsory, under a penalty for neglect, failure or refusal to perform them. He shall serve on the jury, do certain road work and, in time of war, shall bear arms in defense of the country; or he may be impressed by any sheriff to put down any local lawlessness. He is taxed, moreover, for the support of the defectives, and for schools and poorhouses.

As civilization has advanced, and experience demonstrated the necessity, laws have been enacted which throw every protection around one's live stock. His cattle are protected from infectious diseases by expensive quarantine, if need be; and, especially in Texas, the theft of cattle, a horse, more particularly, is a most heinous crime.

But with regard to the *health of the citizen*, there is, in Texas and some other States, a woeful lack of either solicitude or legislation. The most ignorant man is permitted the dangerous privilege of practicing medicine, without a restricting clause in the law. He is licensed by the possession of a diploma alone (it may be stolen or purchased) which, according to Webster, is only a certificate, or "evidence of a degree having been conferred," and "conveys no rights or privileges whatever," to enter the community, to invade the family of his confiding dupes, and take in hand the life of any member; to prescribe the most deadly drugs—of the properties of which he may be entirely ignorant—and, by his ignorance, kill with impunity. He can set aside the law in regard to the sale of liquor on certain days and, by a prescription, can accommodate any old toper with the stuff he craves. Moreover, by virtue of his calling, he is exempt from certain duties to the State or county which other citizens have to perform. In short, the quack doctor (with or without a diploma) is one of the many and grave dangers that threaten society; and in this State protection has, so far, been prayed for in vain; the bugaboo of "personal rights" is pleaded, and the individual's alleged "rights" to practice medicine are respected, often to the great detriment of society. The citizen *has a right* to protection against this, as all other dangers—purchased by his taxes—and his support of the government and his obedience to the law.

Enlightened governments become enlightened through observation and experience; and, as we have shown, our laws are amended, and jurisprudence, in every respect (except medicine), has developed *pari passu* with the progress made in the many relations of life and business.

The existence of a soul in man is said to be evidenced by the possession of the faculty of reason, and this faculty alone distinguishes man from the lower animals; the power to reason, philosophers say, is evidenced by the ability *to profit by experience;* and no race or people is thought to be capable of self-government who do not so profit. Estimated by that test our boasted civilization is a myth, and our government unreasoning and unreasonable; for it is evident to the most casual observer that it has failed to profit by past experience in dealing with one of the most vital and essential elements of danger, to-wit: Disease. True, quarantine has been improved year after year, as experience has revealed defects and the necessity for additional requirements or changes, until it is now reduced to a rational system, and is almost perfect. But, while we would not be thought to underestimate the value and im-

portance of quarantine as against the invasion of foreign disease, we will aim to show that by attention to this feature of protection alone, to the neglect of internal sanitation, the Government, to use a homely expression, is "saving at the spigot and losing at the bung." The lives lost, the time lost, and the property values destroyed in time of the most destructive epidemic, are as a drop in the bucket to the lives, labor and property being destroyed every day, all over the country, by diseases *easily preventable;* and it is not, by any means, through ignorance of their nature and cause and the mode of prevention that this loss occurs, but by the apathy, indifference, neglect, failure—call it what you will—of the general and State governments to take hold of the subject, and, profiting by the experience and wisdom of the medical profession, apply the law to the eradication and prevention of the local and internal diseases, to amend the laws in accordance with the discoveries and recommendations of the medical profession; in short, to avail of the benefits and apply the principles of State medicine.

Society *has the right* to protection from typhoid fever, consumption and diphtheria, as well as from yellow fever and cholera, or other danger of whatever kind; and it is clearly the duty of the Government to secure it.

Recognizing, then, the fact that thousands of lives are annually lost through the agency of preventable diseases; recognizing that the general Government has failed so far, to secure to society the protection to which every citizen is entitled, it is pertinent to inquire as to this grave omission.

In view of our civilization, the intelligent zeal with which laws have been framed for all other requirements of the citizen, whenever experience has shown what was best; the solicitude manifested for the safety of the poorest citizen, if in trouble abroad, it can hardly be said that it is either ignorance or indifference, on the part of the lawmakers, that causes this sad lack of legislation, and the consequent great danger that threatens the public health. Our Congressmen, beyond doubt, have an intelligent appreciation of the maxim, "Public Health is Public Wealth," and of the importance of health to the happiness and prosperity of our country. What, then, is the reason that in so many States no safeguard is thrown around that which is so essential to all other rights of the citizen—the possession of health? Why has not the general government profited by the experience of sanitarians everywhere; utilized their observations and researches in the bacteriological laboratory and at the bedside, and the results of experiments shown in abating disease by cutting off a vitiated water supply, for instance?

The question is easily answered: It is because there is no *organization* in the medical ranks—no coöperation between medicine and law; because there is no *head* to direct the vast energy of sanitarians and laboratory investigators, which, being expended spasmodically aud individually accomplishes nothing; no one to direct how the accumulated knowledge of medical and sanitary science may be utilized; no department devoted to this paramount interest, whence such information can be procured as will enable Congress to frame laws which shall constitute an intelligent application of means to ends—the adaptation of the principles of State Medicine.

Individual effort counts for nothing. We have, all over the land, the most intelligent and indefatigable workers in biological research, and in every field of medical and sanitary investigation. They find that certain deadly diseases are caused by the presence of a bacillus or its products, and they discover also its antidote. The knowledge that hydrophobia is caused by a poison in the salivary gland of a dog or other animal; the knowledge that, to date, no antidote has been revealed to science—that she has no remedy even to palliate the dreadful sufferings of one inoculated with this poison—had as well never been acquired, so far as any protection is afforded by law against this great danger. The same may be said with regard to many other sources of danger; no protection is afforded by law against polluted water, nor against diseased meat, or decaying fruit and vegetables on sale at every stall in most cities. The medical profession is like an army of brave and capable men without a leader; each man is waging war upon his own hook against the invisible hosts of earth, air and water, and each cries out singly for help from the strong arm of the law.

Were the statistics compiled by the State Boards of Health, showing the fearful mortality from preventable diseases, and the results that have followed even spasmodic efforts at sanitary reform, brought to the attention of Congress by the united medical profession, it is not to be doubted that they would be convinced, and speedily enact such laws as would enforce sanitary reform everywhere. But, unfortunately, the profession is divided; and each section represents to Congress a different course with reference to meeting the trouble. And Congress, for want of intelligent advice, really does not know what is best to be done.

As the American Medical Association comes nearer being a representative organization, reflecting the concensus of medical opinion, than any other in this country, the bill formulated by their committee and now before Congress should be regarded as being the first step in the sanitary reform needed.

In this connection the movement is of vast importance. Indeed, it is the most important matter now engaging the attention of the medical profession. In that bill the many sources of danger are pointed out, and suggestions are made for compilation of such statistics and the gathering of such information generally, into one office, as will enable the Secretary to give to Congress the exact data upon which to frame laws to meet every requirement.

Certain States have been pioneers in this great work, and, listening to the suggestions of their sanitarians, they have enacted laws which, in a short time, have reduced the mortality of certain diseases 50 to 100 per cent. Illinois, Ohio, Michigan, Massachusetts, and other States, may be mentioned as setting a praiseworthy example. In Illinois, Dr. John H. Rauch,—the Farr of America, peace to his ashes,—did more for sanitation and the advancement of preventive medicine than any man living or dead. That State should erect to his memory a monument that will pierce the clouds, and in letters of living light inscribe upon it, "*Benefactor.*" The condition of affairs sanitary in Illinois before and after Rauch's measures of reform were inaugurated, will serve as an illustration of what may be done by legislation based upon sanitary and medical knowledge.

The saving to the State by the wisdom of that one man, and the energetic and younger men who succeeded him and still further carried out the inspirations of his genius, if estimated in money would pay the national debt, or the expenses of his Government ten years, and yet—that is only one State. We will confine ourselves to Chicago, and briefly point out the results in the city alone, since the inauguration of the World's Fair. For the purpose, we avail ourselves of an admirable paper in the *Independent*, entitled,

SOME SANITARY GAINS.

"In 1891, in Chicago, there was an average daily mortality from typhoid fever of 5.4, chiefly young lives. There was a betterment in 1892, as a result of some sanitary attempts as to water supply and sewerage.

" . . . At one time in 1891 the percentage of typhoid fever deaths was 16.6 in 10,000, making a total of 1,997; only three short of 2,000, and each death is justly presumed to represent ten cases which recover.

" . . . Nobody doubted that the cause of the trouble was a polluted water supply. . . . Matters had considerably mended in 1892, but then the mortality was equal to that of Philadelphia in the Centennial year.

"It will perhaps present a more striking picture if we say that in January, 1892, there were 311 deaths from typhoid fever in Chicago, while in the much more compact city of Brooklyn there were only 8. In May, 1891, half as many people died as in the whole of Massachusetts during the entire year. Such was the condition before the beginning of the World's Fair project, and people were afraid to go there. Sanitary measures were inaugurated. To be brief, a canal four miles in length was cut, which disposed of the sewage, and pure water was conducted to the city from a distance of twenty-five miles. Crematories for the disposal of garbage were introduced, and from being a city of naturally unhygienic surroundings, situated on the borders of a great marsh and lake, where sanitary engineering was not only difficult but very expensive, and having consequently a heavy death rate, Chicago has become, while not a sanitary model, a standard for comparison with older and less densely and more favorably located cities, like Baltimore and Philadelphia, the mortality from typhoid fever having fallen from 311 deaths in January to 47 in December. And this was accomplished by laws in accordance with suggestions of the State Board of Health, based upon statistics compiled by the Board, and other sanitary knowledge, the result of individual experiment and research; an example of how medical knowledge can be applied by the State for the protection of the public health.

Should Congress create a Department of Public Health in accordance with the petition of the American Medical Association, it will be the first and most important step in the direction of remedying the great evil complained of,—the unnecessary deaths of so many thousand people. In the Committee's memorial to Congress, the duties of the Secretary of the Department are suggested, and they cover every phase of sanitation, comprehend every subject that has a bearing upon the public health. When a head shall have been created and the department organized, all the discoveries of individual workers, all the statistics collected by State and local boards of health will be focused there, collected and classified, and thus will be made evident what laws are necessary. The results of such compilation would be most astounding.

To give an illustration, even on a small scale, of the immense losses being sustained, we will take the deaths from preventable diseases in only one or two cities, and estimate in dollars and cents the value of the lives and time lost.

In the *Scientific American* is published, under the head of "Sanitary Negligence," a table showing the mortality of a number of cities in America and Europe (prepared by the Secretary of the Maryland Board of Health). From this table we take the following as illustrating the difference in mortality of the principal American cities.

The annual death rate per 1,000 inhabitants is as follows:

New York	26.47
Brooklyn	21.84
Chicago	18.95
Boston	23.88
Philadelphia	21.95
St. Louis	18.47
Baltimore	21.10
San Francisco	18.21
Cincinnati	19.67
Cleveland	18.19
Buffalo	16.28
New Orleans	28.72
Milwaukee	16.00
Minneapolis	9.60
St. Paul	9.61

The writer of the article says: "There is no more accurate gauge of civilization actually attained by cities than their comparative mortality tables. It is the object not only of medicine to save and lengthen human life, but it is (ought to be, but apparently it is not,) also the supreme object of the entire governmental and social mechanism." "In a general way, the higher the death rate, the greater the indifference to hygienic conditions of life." "There is no reason, except a disgraceful reason, why New York should allow a death rate of 7.36 higher than that of London, (19.11). This means that New York permits the unnecessary death of 6,630 of her citizens every year." "With a difference of death rate between New York and Brooklyn, just across the river, of 4.63, New York is criminally chargeable with 4,171 additional and unnecessary deaths every year. As compared with Philadelphia there are 4,071 more deaths to her debit. And as compared with Chicago, the appalling number of 6,774. There is certainly no good reason why the mortality of Philadelphia and of Boston should be higher than that of Chicago; but the table shows that Philadelphia kills, proportionately, 1,673, and Boston 1,200 more of her citizens each year than the city that is accredited with drinking her own diluted sewage. It is plain that something is radically wrong."

And these comparisons were made, it seems, even before the great source of typhoid fever,—the polluted water of Lake Michigan,—was abandoned and the introduction of pure water from a distance; the disparity in mortality as compared with these same cities must be still greater in future.

The excess of deaths in five cities over the deaths in Chicago foots up as follows:

Boston as compared with Chicago	1,200
Philadelphia	1,673
New York	6,774
Brooklyn	1,413
Baltimore	490
Total	11,550

"This," says the writer quoted, "is the cost of criminal negligence of known laws of health in only five of our cities. If London cared as little for the lives of her citizens as New York seems to care for hers, there would die in that city every year 21,556 people more than at present die." The money value of the lives lost in those five cities alone, as figured by the statistician quoted, is over forty-six millions of dollars; while the time lost by others sick, *i.e.*, according to Farr, there are two years of sickness to every annual death, or in this instance (11,556 deaths) 23,110 years of needless sickness, which, estimated in money values means, for lost time alone, $6,930,000 besides bills for the doctors, nurses, druggists and all other expenses. "And yet," says the writer, "when the city fathers are asked for a few thousand dollars for meat inspection, for new and necessary sewers, for an unpolluted water supply, or for any other measures of preventive medicine, the request is refused, or acceded to with such cringing stinginess as to be ludicrously inadequate." "In only five cities, and estimated in crude financial losses, we have seen there is a squandering of some fifty-three millions of dollars. Extend the calculation,—easily made,—to the whole country, and it is recognized that we are wasting several hundred million dollars worth of human lives each year, by our recklessness and our stupidity. The medical profession heroically works to save a few thousand sick, while the community goes on blunderingly and savagely killing and making sick by the million."

Our writer is wrong,—as we have attempted to show—to attribute this fearful mortality to either ignorance, or stupidity, or parsimony, so far as the Government is concerned. It is a national sin not to lower the death rate all over the United States; but it is a sin of omission in the failure to apply the vast concrete knowledge obtained by medical and sanitary science to the prevention of disease,—in accordance with the clearest dictates of humanity, reason, justice and common sense. But this the general government can not do, or be made to see the necessity for doing, until provision has been made for collecting, compiling and classifying this knowledge, and there is brought to its attention the cost in dollars and cents, of sanitary neglect; till the deaths all over the United States from preventable disease are consolidated, and it can be shown how much in money can be saved to the Government by the passage of laws to apply the remedy pointed out by sanitary science. Until the Government recognizes the great necessity here attempted to be shown for the creation of a Department of Public Health, and creates it, and puts it into operation, it must stand chargeable with criminal neglect, and held responsible for this fearful waste of human life.

The annual meeting of the New York State Board of Health was held May 3. Dr. Florence O'Donohue was reëlected President, and Dr. J. T. Barnes, of Albany, was elected Secretary of the Board, *vice* Dr. M. Barnes resigned.

ORIGINAL ARTICLES.

A NEW METHOD OF VALVULAR GASTROSTOMY WITH A MUCOUS MEMBRANE LINING.

BY EDMUND ANDREWS, M.D., LL.D. AND E. WYLLYS ANDREWS, M.D.

PROFESSORS OF CLINICAL SUEGERY IN THE MEDICAL SCHOOL OF THE NORTHWESTERN UNIVERSITY, AND SURGEONS IN THE MERCY HOSPITAL, CHICAGO.

The older methods of making a stomach fistula for feeding, in case of impassable stricture of the esophagus, seldom proves satisfactory. Food is easily introduced and digested, but can not be forced through the pylorus into the intestine, because at every contraction of the stomach for that purpose most of the contents are forced out through the fistula. Thus the food is lost, and many of the patients die of starvation. A mechanical rubber valve which we invented in one case partly overcame the difficulty, but did not permanently save the patient,

Wetzel devised the following method: A small opening being made into the stomach, a rubber tube was inserted, and the outer portion of the tube laid along the external surface of the viscus, the stomach wall was folded over it for one and one-half inches and fastened with Lembert stitches, taking up only the peritoneal and muscular coats. The outer end of the new canal was stitched to the skin. The fistula thus formed resembled the ureter where it enters the bladder, and being thus valvular prevented leakage. A difficulty, however, arose. The new canal was lined with peritoneum and not with mucous membrane. It threw out granulations, and could only be kept from closing up by constantly wearing the tube.

Kocher, of Berne, modifying a plan of Alberti's, proceeds as follows: He draws about four inches of the stomach out of the abdominal wound, and stitches up the latter except about two inches. Then the surface of the protruded stomach-pouch is stitched to the wound. Next, he begins at the upper end of the wound and forcibly makes a channel between the superficial fascia and the muscle, etc., carrying the channel up outside the cartilage of the seventh rib, and onward to the sixth rib. Here he cuts an orifice through the skin. He then seizes the projecting stomach-pouch, forces it up through the new channel, and brings the tip out at the orifice on the sixth rib. Here it is opened and stitched to the wound in the integument. The bulging cartilage of the seventh rib acts to compress the pouch, and is said to prevent leakage. It seems like rough treatment of a delicate organ, but there has not yet been enough experience to decide the question of its usefulness.

In a recent case of esophageal stenosis we first tried the plan of opening the stomach with retrograde dilatation of the stricture of the esophagus, closing the stomach wound and returning the viscus. This restored the power of swallowing for a time, but the stricture again contracted, and shut off nutrition. Next we tried Wetzel's plan with perfect success, but for reasons above stated, the tube must be constantly worn.

After considerable experiment on cadavers and animals, we find the following operation feasible, and as it furnishes a valvular orifice lined with mucous membrane, a tube will only need to be used occassionally to prevent possible contraction at the orifices:

The mucous membrane of the stomach is connected with the muscular coat by a layer of exceedingly loose connective tissue, so that any spot on the mucous coat can be made to glide some three-quarters of an inch on the parts beneath. As an experiment, we injected melted lard forcibly into this loose submucous tissue, raising up the membrane three-quarters of an inch, in places. The specimen was then dried to render it rigid, cut into thin sections and the fat dissolved out in ether. Fig. 1 shows a section of this sort, the outer and inner walls being connected only with delicate reticulated fibers.



Fig. 1.

When the muscular walls of the living stomach contract, the mucous membrane is thrown up into high ridges, presenting to the eye of the surgeon curious quadrangular patterns, very different from the appearances in a dead stomach. Fig. 2 is a diagram to represent the folds in cross section.



Fig. 2.

P—Peritoneal coat. *M*—Muscular coat. *C*—Connective tissue coat. *Mc*—Mucous membrane thrown into folds. *F F*—The folds.

This exceeding looseness of the membrane greatly facilitates raising flaps from it, to construct the valvular mucous canal.

The operation is made as follows: External antisepsis is obtained as usual, but the preliminary washing out of the stomach can not be performed on account of the stricture of the esophagus. The external incision is made in the usual way, and the stomach exposed and identified. It is then drawn out through the wound far enough to give freedom in handling. An incision is then made from near the upper border directly downward about two inches. Before this is done, however, provision must be made to prevent its fluids from getting into the peritoneal cavity by the careful placing of large sponges. As the patient has been prevented by the stricture from taking food, the contents will be found to be only the secreted fluids. The cavity is now washed out with warm boric acid solution, and the edges of the incision secured against slipping back into the abdomen. Now the lower part of the anterior wall is raised, turned out through the incision, and spread out flat. From the lower end of the cut, two incisions are made through the loose mucous membrane, one to the right, and the other to the left, each extending about three-quarters of an inch laterally from the lower end of the main incision. From the end of each of these two mucous membrane incisions, another cut is made downward through mucous membrane, parallel to the axis of the body and to each other for a distance of about one inch and one-half. At the lower ends the two incisions are turned at a right angle toward each other, but not meeting, a separation of one-third of an inch being left between them.

In Fig. 3, the quadrangular incision is shown by the letters *A A*, and the mucous membrane flaps by *F F*.

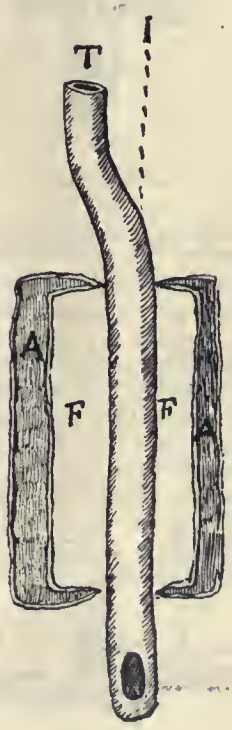


Fig. 3.

A A—The angular incisions through the mucous membrane, exposing the muscular coat. *F F*—The loose mucous membrane flaps. *T*—The tube. *I*—The dotted line shows the position of the incision into the stomach when the parts are replaced.

The next step is to place in position a smooth rubber tube of about the size No. 10 of the English catheter scale. There is nothing better for the purpose than a piece of well sterilized "velvet-eyed" soft rubber catheter. This is laid along the middle of the quadrangle of mucous membrane, and projects an inch below it. Now turn up the flaps *F F* over the tube and close them together with Lembert stitches, placed so as to turn the mucous surfaces in, and bring the connective tissue surfaces in contact. The extreme looseness of the submucous tissue allows the membrane to close over the tube without force.

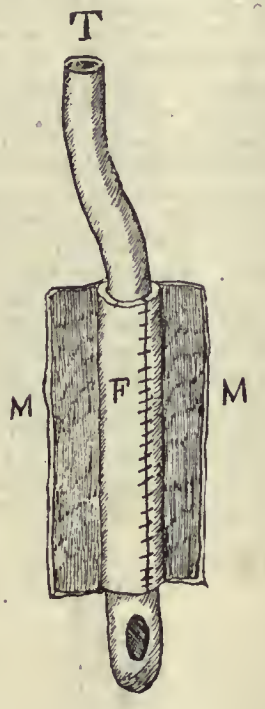


Fig. 4.

T—The tube. *F*—The flaps of mucous membrane closed over it. *M M*—The mucous membrane adjacent to the incision.

This stage of the operation is represented by Fig. 4. Now take hold of the edges *M M* of the mucous membrane with toothed forceps, and they can be folded without difficulty over the membranous tube *F*, and stitched together. In closing these flaps, the edges should be laid with the connective tissue surfaces against each other, and the needle passed to and fro, or through and through, something like a reversed Appolito's suture. At least, we prefer this method, though it is not absolutely necessary. The three following cross sections will make the operation more fully understood:



Fig. 5.

T—The tube. *I I*—The incision through the mucous membrane. *Mc*—The mucous membrane. *M*—The muscular coat. *P*—The peritoneal coat.

Fig. 5 shows the tube laid in position ready to have the mucous flaps *I I* folded over it.

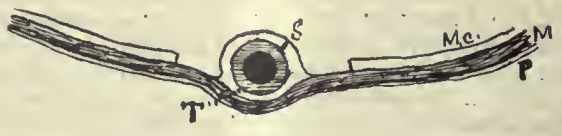


Fig. 6.

T—The tube. *S*—The mucous flaps folded over the tube. It is well to loosen one flap more than the other, so as to bring the suture, *S*, a little on one side of the center.

Fig. 6 shows the cross section after the first flaps are in position.



Fig. 7.

S—The suture of the first flap on one side of the tube. *Si*—The second flap lapping over the first suture, so as to come somewhat on the opposite side.

Fig. 7 shows both flaps in position, arranged so as to "break joints," which can be accomplished by pulling the edge of the second flap past suture *S*, and securing it by letting part of the stitches of the seam *Si* go deep enough to take hold on the surface of the first flap beneath it.

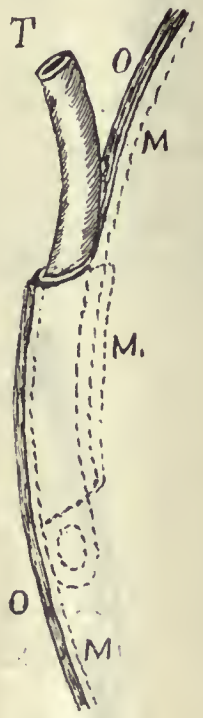


Fig. 8.

Diagram showing the relations of the tube to the parts.
T—The tube. *O O*—The outer wall of the stomach. *M M M*—The mucous membrane.

Fig. 8 is a diagram showing the tube in position and enveloped in its double mucous flaps.

Fig. 9 is an outline sketch showing the tube in position, and the incision above it closed by a Czerny-Lembert seam. The dotted lines indicate the portion of the tube inside the stomach.

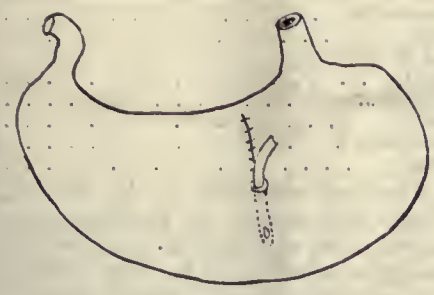


Fig. 9.

Sketch of the stomach with the tube in position.

The flaps having been carefully closed, the prolapsed portion of the stomach is returned to the interior, with the upper end of the tube projecting out of the incision. The stomach wound is then closed with a Czerny-Lembert suture, and the edge of the orifice, from which the tube projects, stitched to the skin. Finally, the wound in the abdominal wall is closed, except the point occupied by the tube. A small plug is inserted into the end of the tube, and the whole dressed antiseptically. I think it well to begin almost at once to put in a little milk with a syringe, so as to keep up general nutrition enough to favor union by first intention.

A female dog weighing forty-five pounds was subjected to this operation April 5, 1894. There was no leakage of the contents of the stomach whatever. At the end of a month she was in robust health, and on being killed May 4, the valve in the stomach was found in good working order, and readily pervious to tubes. We think that there might be a liability in some cases to a contraction of the external or internal orifice of the channel, and hence after the tube is withdrawn, it should be occasionally re-inserted to test the size of the channel, and if necessary to dilate it.

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INSANITY; SYMPTOMS AND TREATMENT.

BY FREDERICK HORNER, M.D.
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Dr. Carpenter's "Principles of Human Physiology," tersely defines insanity to be "in its highest degree a complete disturbance of the intellectual faculties; the thoughts are not inactive, but rather far more active than in health; they are uncontrolled and wander from one subject to another with extraordinary rapidity; they twist and turn a single subject in every way; the faculties seem to have escaped from all restraint, thought after thought succeeding with such velocity that all power of perception is destroyed and the mind ceases to perceive impressions made upon the senses. The patient raves, unconscious of what occurs around him; he fancies that he hears voices, while ocular spectra excite further rhapsodies and a condition of delirium. The intellectual powers are disordered, depending upon structural disorder of the cerebrum. Disordered emotional excitement constitutes impulsive moral insanity or monomania, destructive in tendency and presenting examples, sometimes of homicide or suicide, without any apparent motive." Such cases, it may be added, can not always be attributable to perversions of the reasoning process, but arise out of a perverted emotional state—the victims or subjects of which do not belong to the criminal class, though they may imitate their evil example, since it is well known that the consciousness of the performance of a certain act by one individual gives rise to a tendency to its performance by another.

Of other forms of insanity, there are mania—due to excessive cerebral action—and dementia, enfeebled action. Alcoholism, the puerperal state, fevers, chronic meningitis, or certain forms of inflammation, nervous shock due to wounds, loss of property, etc., all predispose to insanity, especially where heredity exists. The man whose insanity is often not so much as suspected, until he breaks out in a terrible and shocking crime, is the most dangerous person in the community. And here the opinion may be advanced that riots, murder and suicide would occur, perhaps, less often in some portions of our country if the people were more enlightened as to the origin and etiology of insanity. It may be asserted as a fact that the mass of the profession do not make the subject of insanity a specialty, but rather ignore it. The medical journals contain few publications on this theme. The *American Journal of the Medical Sciences* at one time contained a synopsis of the reports of superintendents of hospitals for the insane, prepared annually by the late Dr. Pliny Earle. Among the pioneers and co-workers in behalf of the insane in this country during the present century are Kirkbride, of Pennsylvania; Stribling, of Virginia; Nichols, of Massachusetts; Grey, of New York; J. Preston Jones, W. W. Godding and Miss Dix, first to suggest the founding of the Government Hospital for the Insane of the U. S. Navy and Army, and who also subsequently prevailed upon the governments of Europe to institute hospitals on the principle of those in America, which have contributed to rescue from a state of misery hundreds of the human race who would otherwise have died hopeless and forlorn. It is to be deplored that neither the State medical magazines or the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION take any special interest in the subject of insanity, though the regular practitioner in town or country may occasionally receive the annual reports of such hospitals. Few medical colleges give instruction on the subject. Neither at the Universities of Virginia or New York is it embraced in the curriculum of study.

Happily, within the scope of the proposed Department of Public Health, recommended by the Committee of the AMERICAN MEDICAL ASSOCIATION, there is a clause to ascertain the extent, the origin and classification of insanity in the several States and territories of the country. In connection with the origin of insanity, it may be added that the Bible is not silent on the subject. In the Old Testament, when the Jews, the chosen people of God, incurred His displeasure, among other judgments inflicted was insanity; an example of which was presented in the person of the haughty King of Babylon. At the period of the New Testament times, when the Great Physician, the Savior, was on earth, mankind were submitting the insane to a most cruel and pitiable condition; cast out from human society and counted as possessed of devils as was the raving maniac of the tombs; no worse spectacle of misery in human guise could be presented when, by the magic presence and word of Christ all was changed, and the miserable victim afterward was found clothed and in his

right mind. From that era to the present century, Christian men and women have sought in every way to ameliorate the condition of this class. The so-called bedlams of England and the jails and reformatories where such were confined, have given place to the more rational methods of hospital treatment, carried out by enlightened physicians. Among hospitals abroad and here, which the writer was privileged to visit and inspect, were some of those in France, England and Canada. The Salpêtriere in Paris at the time had M. Charcot as superintendent. His patients were healthy in appearance, well clad and many usefully occupied. Recreation and amusement were prime factors which this eminent alienist employed to recover his patients. To the Quakers belong the credit of establishing the first building in America—a wing of the Pennsylvania Hospital being appropriated for the care of insane patients—thereby antedating by a half century a like provision in Great Britain. Among the institutions of the kind in England may be especially named the Royal Naval Hospital at Great Yarmouth, where according to the tables prepared by Dr. J. D. Gatewood, Surgeon U. S. Navy, the mortality averages 10 per cent. Since the late Dr. Seguin inaugurated a work in behalf of imbeciles, fifteen States of the Union have made provision for this class, aggregating 4,000 unfortunates. In 1879 the first hospital for the colored insane of Virginia was located at Petersburg, Va.

The late Report for 1893, of the Superintendent of the State Hospital for the Insane at Staunton, Va., gives the following statistics, viz.:

Male inmates, 338; females, 326; total, 659.

Admissions for 1892–3: Males, 76; females, 61; total, 137. Of these, 41 were re-admitted.

Per cent. of recoveries, 56; of deaths, 0.6. Since founded, 1827 to 1893, total number admitted, 4,666.

Phthisis pulmonalis caused the largest number of deaths. The report emphasizes the value of employment and amusements, always followed by gratifying results. Of 936 patients of the Pennsylvania Hospital 454 are classed under mania; 333 under melancholia; 142 under dementia. At the Salpêtriere Hospital, already referred to, of the 2,005 cases considered curable, 604 were cured in the first year, 497 in the second; 71 in the third, and 46 in the seven years following; in all 1,218 in ten years.

The report of the Surgeon-General, Dr. James K. Tryon, U. S. Navy for 1893, under the head of insane of the Navy, the Government Hospital for the Insane gives the number remaining in the Hospital Sept. 30, 1892:

Remaining Sept. 30, 1892	75	
Number admitted to June 30, 1893	10	
Total number		85
Total number discharged to June 30, 1893:		
Recovered	3	
Improved	1	
Died	9	
Total number		13
Remaining June 30, 1893:		
Officers	6	
Enlisted men and marines	66	
Total		72
Force afloat: Cases of insanity, 1892:		
Dementia	1	
Mania	6	
Melancholia	5	
Total		12
Navy Yards and Stations, 1992:		
Dementia	4	
Mania	3	
Melancholia	2	
Total		9
Naval Hospitals:		
Dementia	2	
Hypochondriasis	1	
Mania	3	
Melancholia	11	
Total		17

Thus allowing, according to the Report, 10,000 or more officers and seamen of the Navy, one-tenth of this number to be admitted in one year for treatment for insanity, as already stated for 1892–93, the proportion is relatively small, considering the exposure to disease, accidents and injuries common to the naval service. In this connection it may be added that as a case of an inebriate officer of the U. S. Army was committed to the Government Hospital for the Insane for treatment, the fact is suggestive that Army and Navy authorities may properly recommend the founding of a hospital for inebriates.

THE TREATMENT OF INSANITY.

Every enlightened physician concedes the importance of an early recognition of a case of insanity, and the commitment of the patient to hospital *regimé*. Unluckily as yet, public sentiment is against such decision, and too often the family physician yields through fear that he may offend, knowing that by some to be insane is deemed a disgrace and certain to be followed by loss of reputation. Hence the golden opportunity for proper treatment is lost, diseased action is allowed to proceed unchecked until diseased organization has taken place and the patient has become incurable. Dr. Forbes Winslow on "Obscure Diseases of the Brain," says: "It is a fact that 70, if not 80 per cent. of cases of insanity admit of easy and speedy cure, if treated in the early stage with proper remedies, and there be no strong constitutional tendency to cerebral affections or cranial malformation." The acceptance of the doctrine of modern times, that insanity is a disease of the brain and should be treated as a physical illness is vitally important, because of the large increase of insanity. For example, in 1844 there were 20,000 insane people in England, about 1 in 800; in 1871 there were 56,000, or 1 in 400 of the population of that country. Its occurrence may be looked for where heredity exists after an acute illness of typhoid, puerperal or other fevers, meningitis and shock incident to severe injuries of the head—especially if the patient be intemperate or a brain worker. The regular physician of such cases should not lose sight of them, since disastrous consequences may follow such neglect. The writer recalls in his practice the case of a bright youth, 17 years of age, whose malady was hypochondriasis with neurasthenia; he committed suicide by taking laudanum. His mother, the widow of a Virginia judge, had often been advised to commit him to a hospital, but in vain.

With the help of modern pharmotherapy, the physician can dispense with the crude, if not harsh, remedies and appliances formerly resorted to in the treatment of the insane, especially when carried out by the gentle, intelligent and trained nurse, whose services are now to be commanded even in private practice. The locked doors, the barred windows and padded chamber walls of the asylum are still necessary, but the skilful use of the hypodermic syringe charged with the needed duodyne, whether to insure sleep, to avert a paroxysm or to induce an alvine motion, now well-nigh supersede the resort to coer-

cion, oral medication or the straight jacket, which tended to excite cerebral exacerbation and delayed recovery. The use of the hot bath, as hot as can be borne, for its anesthetic effects can not be too urgently recommended, when aided in acute cases by the free use of sulfonal and phenacetin; the latter combined with caffein promptly relieves insomnia and suffering—without the after effects of the opium salts.

Where urotoxemia exists in chronic forms of insanity with symptoms of parenchymatous nephritis, accompanied by debility and loss of appetite, the free use of bicarb. potass., the mercurials, cod liver oil, Fellows' hypophosphites or the compressed tablets of the Hypophos Company, prepared by H. K. Mulford, chemist, Philadelphia, are invaluable as a tonic and restorative of the enfeebled nerve action of the digestive organs, as well as of the brain. As an article of diet, the fluid beef, such as is prepared by Libby, McNeil & Co., of Chicago, can not be excelled. During the stage of convalescence the system of furloughs may be practiced with advantage; the patient being always commended to the care of some medical friend, and the time for his return to the hospital should be distinctly stated by the authorities.

LEGISLATION FOR THE PREVENTION OF BLINDNESS.

Read before the Chicago Medical Society, April 15, 1894.

BY BOERNE BETTMAN, M.D.

Professor of Ophthalmology in the Chicago Post-Graduate Medical School; Oculist and Aurist to the Michael Reese and German Hospitals; Attending Surgeon to the Illinois Charity Eye and Ear Infirmary; Professor of Ophthalmology and Otology in the College of Physicians and Surgeons, Chicago.

The object of this paper is to call the attention of the Society to the need of legislation for the prevention of blindness. The necessity for adopting such a measure can only then be advocated when sufficient data have been collected, indicating the cause and increase of blindness, and then demonstrating that legal restrictions would decrease to a large percentage this awful calamity. A thorough elucidation of these facts would tend towards elaboration. I will content myself, therefore, by bringing to your attention in a concise form, the main features only. If we consult the United States census from the year 1850 to date, we learn that the number of blind enumerated during the various decades is as follows: 1850, 9,794; 1860, 12,658; 1870, 20,320; 1880, 48,928; 1890, 50,411.

If compared with the population, which increased from 23,191,876 in 1850 to 62,622,250 in 1890, we obtain the following ratios:

Number of blind to 1,000,000 of population: 1850, 422; 1860, 403; 1870, 527; 1880, 976; 1890, 805.

As we are especially concerned about our own State of Illinois it will be interesting to ascertain the number of blind allotted to us in the records quoted. The following table comprises both the total number of blind for each period and their ratio to 1,000,000 of the population:

Number of blind in the State of Illinois: 1850, 264; 1860, 476; 1870, 1,042; 1880, 2,615; 1890, 2,834.

Number of blind to 1,000,000 inhabitants: 1850, 310; 1860, 278; 1870, 410; 1880, 850; 1890, 741.

It will be observed that the proportion of these sadly afflicted has greatly increased, notably so in 1880, and again decreased in 1890. These apparent inaccuracies are due to the methods of enumeration adopted, and are fully explained in the following words of Dr. Wines, quoted from the Report of the Board of Public Charities of Illinois, 1892: "With regard to the so-called "defective" classes, it should be known that Dr. Wines, in 1880, supplemented the enumerators' returns by correspondence with physicians, who added many names to the lists. This correspondence was not renewed in 1890, which accounts, at least in a large degree, for the seeming slight falling off in the ratio in 1890."

The above figures will suffice to prove the existence of a large class in our community whose infirmity makes them dependent upon others. Deprived of, perhaps, the most important sense, their mode of education and subsequent training demand the existence of schools and workshops equipped with all the requirements of a model blind asylum and industrial school. The large outlay of money this entails can only be undertaken by the State. The total amount appropriated for the blind asylum in Jacksonville from 1849 to 1891 was $1,156,690.50. Dr. Howe states that the blind of the State of New York costs directly and indirectly over one million and a half of dollars yearly. If computed for the entire civilized world, the sum would reach an enormous amount.

If we regard the question from a philanthropic standpoint, we become so thoroughly alive to the helpless condition of our crippled brethren that our hearts go out to them in sympathy, and every human sentiment is aroused not only to better their state, but to improve the condition of affairs which in a large measure is responsible for their affliction. Physicians can not deal much with sentiment. Our skeptic science calls first for research, and then for the practical application of our investigations. We will therefore, next inquire into the causes of blindness and later on its preventive measures.

Valuable statistics have been compiled, both in this country and in Europe, with reference to those questions which are the results of much labor and patient searching inquiries. Magnus[1] collected 2,528 cases of bilateral blindness which, when grouped under four heads, attribute 3.77 per cent. to congenital blindness, 66.50 per cent. to idiopathic diseases of the eye, 10.73 per cent. to injuries, and the remaining 19 per cent. to diseases of the body which affect the eyes secondarily.

I could multiply these statistics by referring to those collected by Cohn, Krückow, Skrebitsky and others. Those I have quoted will suffice for illustration. The above figures clearly indicate that in order to prevent loss of sight in a great proportion of cases, our efforts must be concentrated in one direction. Congenital defects of the eye and ocular lesions due to bodily ailments are comparatively few. They necessarily are not so amenable to preventive measures as are those caused by idiopathic diseases of the eyeball and injuries of that organ. The latter can frequently be ascribed to carelessness and defy intervention. The second category of cases, those resulting from primary diseases of the organ of vision demand our special attention, for they comprise the largest percentage and come directly within our sphere of action. An analysis of this group will demonstrate that blennorrhea neonatorum must be responsible for the largest quota, almost 11 per cent.

[1] Die Blindheit, ihre Enstehung und ihre Verhütung, Breslau, 1883.

If statistics of the youthful blind, such as are found in our blind asylums, are tabulated, the percentage of blindness due to infectious infantile disease rapidly increases. Thus Reinhardt[2] found 30.39 per cent. in a material of 2,165 individuals, inmates of twenty-two blind asylums. Claisse, of Paris, 46 per cent.; Katz, of Berlin, 41 per cent., and Magnus, of Breslau, 34 per cent.

Having shown that blennorrhea neonatorum is responsible to a great extent for blindness in the young, the question will naturally arise: Can this disease be prevented, and if so how? We all know that it can, and every intelligent physician has heard of and should conscientiously carry out the prophylactic measures known as Credé's and Hausmann's methods. Hausmann aims at cleanliness and strives to render the tract through which the newborn child must pass, aseptic, and thereby prevent infection of the conjunctiva. Credé, on the other hand, aims at innocuousness of the germs which may have lodged in the conjunctival sac. Since it is impossible to determine at birth of the child whether infection has occurred or not, all eyes are subjected to the same prophylactic treatment. A single drop of 2 per cent. solution of nitrate of silver is dropped between the lids of *every* newborn child. The proof of the efficacy of this procedure is presented in the following figures borrowed from Fuch's work, page 129.

Author.	Before introduction of Prophylaxis.			After introduction of Prophylaxis.			
	Total number of newborn.	Cases of blennorrhea.	In per cent.	Prophylactic method.	Total number of newborn.	Cases of blennorrhea.	In per cent.
Abegg[3]	. .	. .	. .	Cleansing with water	. .	. .	3
Schirmer[4]	. .	. .	. .	Dry cleaning	50	0	0
Bischoff[5]	. .	. .	5.6	Salicylic acid	. .	. .	2.6
Olshauson[6]	550	69	12.5	2 per cent. carbolic acid after tying cord	137	12	8.8
Olshauson	. .	. .	. .	2 per cent. carbolic acid sol. before ligating cord	166	6	3.6
Kruckenberg[7]	1266	92	7.3	2 per cent. carbolic acid sol. before ligating cord	82	11	13.4
Konigstein[8]	1092	51	4.8	1 per cent. carbolic acid sol. before ligating cord	1541	21	1.4
Credé[9]	2897	314	10.8	2 per cent. argentum nitricum solution	1160	1–20	1–02
Konigstein	. .	. .	. .	2 per cent. argentum nitricum solution	1250	9	07
Kruchenberg	. .	. .	. .	2 per cent. argentum nitricum solution	730	1	0.14
Felsenreich[10]	1887	82	4.3	2 per cent. argentum nitricum solution. (First period of time in use	3000	58	1.9
Felsenreich	. .	. .	. .	2 per cent. argentum nitricum solution. (Second period of time in use)	2100	21	1.0
Ressel,[11] Simpson	. .	. .	11.76	2 per cent. argentum nitricum solution	. .	. .	5.0
Bayer[12]	1106	136	12.3	2 per cent. argentum nitricum solution	361	0	0

Should this disease make its appearance, notwithstanding the introduction of preventive measures, or owing to a lack of their enforcement, it can be treated and vision saved in the great majority of cases, provided the physician's attention is called to it at an early date. This disease calls for prompt interference. Delay of a few hours is often dangerous. Ulceration of the cornea and loss of sight can in most instances be avoided, provided the proper remedies are applied at the very onset of the inflammation. That this is not done and that the dictates of Credé are not complied with in many, often too many instances, is a fact known to every physician and especially to oculists of some experience. In large cities and in the country, midwives lawfully attend to confinements and, unfortunately, also, to the inflamed eyes of the babes. The last "Official Register of Midwives" for the State of Illinois contains a list of 1,152. Of these, 700 are located in the city of Chicago. Of the 28,742 births recorded in Cook County last year, over one-half, I have been assured by the registrar of births, were reported by midwives. We all have come in contact with the results of their ministrations. The usual popular remedies, such as instillation of breast milk, camomile tea and other noxious agencies are applied to the swollen, suppurating lids, and only after the loss of precious time when complications have arisen, the physician is at last, and unfortunately too late, consulted. Such sad examples of ignorance and criminal negligence have come under my notice dozens of times. Very often the charge of carelessness must be laid at the door of the parents. Either ignorance or penury induce them to listen to the advice of foolish counselors. It can not be said with a shrug of the shoulders that they themselves reap the harvest of their sowing. The innocent child whose future life is blighted is thrown upon the care of society at large and becomes a burden to the State. It might be said that midwives should be taught to carry out the safeguards referred to. But they are not, and furthermore, persons who are not acquainted with the first principles of medicine can not possess the requisite knowledge and should not be permitted, except for unavoidable reasons, to assume charge of so dangerous a disease. Many otherwise well-qualified practitioners are not capable of coping with it; surely a midwife can not be intrusted with its care. In such communities, where the population is sparse and medical men few, the treatment must be intrusted to the midwife, over whom the State Board of Health should exercise vigorous control by refusing a license, unless exact knowledge of this branch of their duties is shown. These detailed reasons prompted the authorities of Switzerland in 1868, of Prussia in 1878, Austria in 1882, and America in 1891, to force midwives and nurses to report inflammation of newborn babes' eyes at an early date, to call in the aid of a physician and thus prevent, to a large extent, blindness.

This brings us now to the essential feature of this paper, or as Dr. Howe in his address, read at the forty-fourth annual meeting of the AMERICAN MEDICAL ASSOCIATION, says: "What means can be adopted to bring these children as soon as possible to the notice of a competent physician? Education of the laity is useless, urging the nurses, professional or others, is equally insufficient. It remains only to place the responsibility at once where it belongs, by imposing upon such persons a severe penalty. The surest and best means of accomplishing this is undoubtedly by legislation."

New York was the first State in the Union to take up this subject, and through the untiring efforts of Dr. Lucien Howe and his colleagues, both Houses of the Legislature of 1890 passed, without a dissenting vote, the following Act known as Chapter 41 of the Laws of 1890.

[2] Dr. Ernst Fuchs. Die ursachen und die Verhütung der Blindheit, 1885.

[3] Nagels Yahresbericht f. Augenh. für 1881, p. 337. [4] Citirt von Königstein. [5] Horner, Haudbuch, der Kinderkrankheiten herausg. von Gerhardt V. B. 2 Abth., p. 264. [6] Berliner klin. Wocheuscrift, 1881, Nr. 8, [7] Archiv. für Gynäkologie XXII, B. p. 329. [8] Archiv. fur Kinderheilkunde. III, B. 1882. [9] Archiv. fur Gynäkologie XXI, B. p. 181. [10] Weiner med. Wochenschrift, 1883, Nr. 35. [11] Annales d'oculistique, XC. B., p. 145, Scheint die Catarrhe mit den Blennorrhoen gezählt zu haben. [12] Archiv. für Gynäkologie XXX B.

AN ACT FOR THE PREVENTION OF BLINDNESS.

SECTION 1.—Should any midwife or nurse having charge of an infant in this State, *notice* that one or both eyes of such infant are inflamed or reddened at any time within two weeks after its birth, it shall be the duty of such midwife or nurse so having charge of such infant, to report the fact in writing, within six hours, to the Health Officer or some legally qualified practitioner of medicine of the city, town or district, in which the parents of the infant reside.

SEC. 2.—Any failure to comply with the provisions of this Act, shall be punishable by a fine not to exceed one hundred dollars, or imprisonment not to exceed six months, or both.

SEC. 3.—This Act shall take effect on the first of September, Eighteen Hundred and Ninety.

The word *notice*, in the first sentence was omitted in a similar law enacted in Maine in 1891, and known as 97 of the Senate.

This law reads as follows:

SECTION 1.—Should one or both eyes of an infant become reddened or inflamed at any time after birth it shall be the duty of the midwife, nurse or person having charge of said infant, to report the condition of the eyes at once to some legally qualified practitioner of medicine of the city, town or district, in which the parents of the infant reside.

SEC. 2.—Any failure to comply with the provisions of this Act shall be punishable by a fine not to exceed one hundred dollars or imprisonment not to exceed six months, or both.

SEC. 3.—This Act shall take effect on the first day of June, 1891.

Rhode Island only lately, in 1893, followed the good example of her big sisters by an enactment practically similar to theirs. I will again quote Dr. Howe to answer a question which has been repeatedly put to me and to which he so pertinently and concisely replies. He says:

"A question might arise as to what advantage it is to oblige nurses and midwives to report a disease of which a certain class of so-called doctors are almost as ignorant as the nurses themselves. The answer to this is three-fold: 1, the nurse is made to appreciate her responsibility, not only in that case but in others, and to know that the condition indicated by redness and discharge is not anything to be trifled with; 2, the parents also become alarmed when they know the disease is sufficiently serious to be the subject of special legislation, so that in choosing a practitioner they select with rather more than ordinary care. Finally, as for the physician himself. If he accepts the case he feels that he must understand it thoroughly, and he will be apt to look it up with considerable care in text-books and treat it intelligently. Above all, if he fails to do that, the parents have a responsible individual against whom they can, with perfect justice, enter a suit for malpractice, and if he has proved himself incompetent, he not only suffers the penalty which a law has provided for him, but one such case would be an example to him and to other practitioners in the community in which it occurred."

And now we are confronted with the momentous question, Whether the great State of Illinois which has shown itself so willing and prompt to champion the cause of all worthy enterprises will be behindhand in this deserving undertaking. I think not. It remains only for us, the physicians of this commonwealth, to show by united action and unanimous indorsement, that we favor the immediate enforcement of such legislation. The representatives will then be convinced of the need of such a measure, and no doubt will readily make it a law. At the March meeting of the Chicago Society of Ophthalmology and Otology, my paper on "Legislation for the Prevention of Blindness" called forth an animated discussion, which resulted in the adoption of the following resolutions:

WHEREAS, Statistics compiled in this country and in Europe demonstrate that fully 25 per cent. of our blind owe their affliction to an inflammation of the eyes appearing a few days after birth; and

WHEREAS, Experience has proved that the inflammation can be cured and the eyesight saved in the majority of cases if treatment is instituted at an early stage of the disease; and

WHEREAS, The destruction of the eye and blindness are usually the result of delay in treatment; be it

Resolved, That we heartily recommend that the people of the State of Illinois represented in Senate and Assembly, do enact as follows:

SECTION 1.—Should one or both eyes of an infant become inflamed, swollen, or reddened at any time within two weeks after its birth, it shall be the duty of the midwife or nurse having charge of such infant, to report in writing, within six hours to the Health Officer or some legally qualified practitioner of the city, town or district, in which the parents of the infant reside, the fact that such inflammation or swelling or redness of the eyes exists.

SEC. 2.—Any failure to comply with the provisions of this Act shall be punishable by a fine not to exceed two hundred dollars, or imprisonment not to exceed six months, or both.

Committee: F. C. HOTZ, M.D., LYMAN WARE, M.D., BOERNE BETTMAN, M.D.

I think this Society should put itself on record and aid the cause by passing resolutions to the same effect. We thus not only indicate to the world our approbation of preventive medicine, but give a moral support to the instigators of this movement.

RUPTURE OF THE UTERUS DURING LABOR.

Read before the Cambridge Society for Medical Improvement, April 23, 1894.

BY EDMUND SCOTT DOW, M.D.
ALLSTON, MASS.

I wish to call your attention to this subject tonight, owing to a case which I saw recently in consultation with a physician who gave me the following history:

"Mrs. X., age 33, 4-para, her youngest child being 7 years old. Her previous labors had been normal, never needing even the use of forceps. At different times during the last few years she has been in a hospital for some uterine disease, but has never had an operation, although one was advised for a laceration of the cervix. Her term of pregnancy has been uneventful, except she was said to be subject to faint spells but was able to attend to her family cares and to take out-of-door exercise. The membranes ruptured on a Wednesday night, but labor pains did not start until eight days later at about 7 in the morning. During this past week the waters had continued to drain away. The labor continued uneventful until nearly noon, when the os was fully dilated and, as the labor pains seemed to diminish, I thought best to deliver by forceps and so asked for counsel."

When I saw her about 12:20 P.M. she was in a very critical condition from loss of blood, which bleeding must be internal, as there was very slight hemorrhage externally. She was pulseless, cyanosed, with sighing respiration, limbs cold, and covered with clammy sweat.

On examining per vaginam the head was found low down, the os fully dilated and the cervix wholly taken up. The patient was given hypodermic injections of brandy and ether; a slight amount of ether was given her and a stillborn male child of ten pounds was.

easily delivered by forceps. The placenta was not easily expressed and so the doctor tried to take it manually. Meanwhile I was busy with hypodermic stimulations, to which the patient did not respond, and I was asked to try for the placenta. On examination the hand passed readily into the abdominal cavity through a rent in the side of the uterus, and the intestines could be easily felt. Here, then, was the cause of the collapse. The placenta was readily removed from the uterus and the uterus pressed down and contracted, but the patient expired a few minutes later.

The postmortem examination was made twenty hours after death; *rigor mortis* still present. The abdomen only was examined. The abdominal cavity was found to contain a large amount of fluid and the uterus was fairly well contracted. The uterus and its appendages were removed and found to contain a tear on the left side, extending from the mouth to the Fallopian tube, but not involving it; a tear fully five inches in length.

Rupture of the uterus during labor may be one of two kinds; either spontaneous, or that due to manual or instrumental force. As to the cause of rupture, in a general way, it may be said that uterine contraction causes it. Of course the effect of uterine contractions in normal cases is the expulsion of the fetus; but if the child meets an obstacle such as a contracted pelvis in the mother, or from abnormal size of the child itself, then continued hard contractions end in rupture of the uterine walls. Again, the improper use of ergot, as in the first stage, has been known to be followed by rupture.

The frequency with which cases of rupture occur seems to vary much according to different authorities. Ramsbotham puts the proportion as 1–4,887, Bandl 1–1,200, and Dr. Jolly, of Paris, says 1–3,403. In 1880 Dr. Harris, of Philadelphia, made a careful study of the subject, especially as regards the frequency in the United States, and he says that many physicians see several thousand cases of labor without meeting a single case of rupture, and he concludes the proportion is 1–4,000. There is no doubt that many cases occur which are not reported, even if recognized at the time, for the symptoms of rupture are not the same in each case. In the one case the tear may occur in one pain and be so extensive that the fetus would go into the abdominal cavity, when acute pain followed by collapse and recession of the presenting part would occur; while in another case the rupture would take place by degrees, the tear would not be so extensive and the pain of tearing would be so masked by the pain of labor that the condition would not be recognized until too late. Thus it will be seen that the accident, fortunately rare, may be much more frequent than these figures would show.

That the accident happens much more frequently in multiparæ, admitted by all writers, is partly on account of the thinning and weakening of the walls in successive pregnancies and on account of the increase in size of later children. One writer speaks of the greater number of shoulder presentations in multiparæ as a cause of rupture.

The extent of the tear may vary from one or two inches, to such size that the entire fetus escapes into the abdominal cavity. As to degree, the rupture may be complete or incomplete; complete if the tear extends through the walls to the abdominal cavity, and incomplete if it involves the muscular layer only, the peritoneal coat remaining intact, in which case there is no hemorrhage into the abdominal cavity, but may be very grave hemorrhage into the surrounding tissue.

Rupture of the uterus is one of the gravest accidents of labor. Occurring, as it does, at a time when all seems going well, and when the family and friends are expecting a speedy cessation of the labor and the advent of a new life to the home, the blow seems doubly severe. The child is almost invariably stillborn, and the mother is put in jeopardy of her life through shock and hemorrhage, and if she survive these she is in great danger of septic infection.

As to treatment two factors are to be considered: 1, how shall we extract the child? 2, how treat the tear?

As to the first question, most authors now agree that if the rupture is complete and the entire child has passed into the abdominal cavity, then do laparotomy; the same treatment is indicated if part of the child has passed through and the rest is so high up that the presenting part can not be readily reached. If the presenting part is low down and easily reached, then deliver through the natural channel. If the head is low down, use forceps; if not successful with forceps, perforate and use cranioclast. If transverse presentation, do embryotomy; if arm is down, do decapitation. Version is not permissible, for the tear, if small, is increased by so doing, and if subperitoneal it is made perforating and hemorrhage is thereby increased. The placenta should be removed manually and not expressed. If the placenta has passed through the tear and is not found, then do laparotomy.

How are we to treat the tear? Different views are held by different observers. If laparotomy has been done and child removed from the abdominal cavity, some prefer to sew up the tear; others to remove the uterus entire and drain through the abdominal wound or through Douglas' pouch. If delivered through the natural channels many authors believe in laparotomy in cases of complete rupture, in order to secure drainage. Others prefer to treat these cases by tampon and drain through vagina. Statistics show better results by the latter than by the former method.

In cases of incomplete rupture almost all authors prefer the tampon, although many prefer laparotomy, as they claim that otherwise you can not control hemorrhage. In case of rupture, should laparotomy be done immediately with danger of adding the shock of an operation to that of the rupture, or is it better to tampon the vagina to control hemorrhage and wait until the patient rallies from the shock? Mortality is much greater by the immediate plan.

I bring that subject to your notice this evening, that there may be free expression of opinion as to the proper course for us to pursue in a case which may occur at any time in a family where we have not all the facilities for doing a grave operation. The saying is that "grave emergencies demand bold measures," and the physician will have to bear some blame in a case of this sort, no matter how careful he may be.

DISCUSSION.

Dr. Norris had one case of rupture of the uterus in a young woman 25 years of age, in a twin pregnancy, at full term. Labor had been delayed all day and at evening assistance was called and an attempt made to deliver. A child with presenting head was taken with forceps, when the mother apparently became exhausted. The second child was delivered by turning, after which the woman went

rapidly into a state of collapse and died. An examination showed a rupture of the uterus, which the doctor attributes to a long delay in the delivery and the act of turning the child.

Da. Taylor asked in what per cent. of cases of ruptured uterus has laparotomy been performed and how many have recovered?

Answer. The per cent. of cases operated upon is unknown; about 50 per cent. of the cases operated upon have recovered. A case in the practice of Dr. Ed. Reynolds recently was treated expectantly and recovered.

Da. Horace Marion saw a case in consultation some time ago which proved fatal.

Dr. M. Brown, seventeen years ago, had a young Irish patient, primipara, in labor, where there was a great obliquity of the uterus and owing to which he expected trouble. The woman had a severe pain while in a standing position and shortly afterward went into a state of collapse. Examination showed a rent in the uterus and the child in the abdominal cavity. The child was delivered and then the placenta, but the bowels protruded and the woman died the next day. This was a case which might have recovered had an early laparotomy been performed. A very remarkable case of repeated rupture of the uterus has been reported by Dr. Row, of W. Lyndonville, N. Y., where in four consecutive pregnancies the uterus has ruptured during labor, and yet the child has been successfully delivered. The great obliquity of the uterus is emphasized by Dr. Brown as a cause of rupture.

Da. A. P. Clarke had one case, twenty years ago, in a 4-para. He was called in the afternoon and found the patient in the first stage of labor, with some pain, and the os undilated; in the evening there was some dilatation of the os and the head was found presenting. The patient got out of bed, was seized with a pain which was very hard, and then became collapsed and bloodless. Dr. Wellington was called in, but the patient died before he arrived. The hand passed into the abdominal cavity through the uterus, felt the head of the child. There did not seem to be much hemorrhage present; the woman apparently died from shock. In his case, laparotomy would have been of no avail.

Dr. Driver was called to see a woman who had been in labor all day. On the right the uterus appeared to be very thin, and on the left there was a hard mass. He passed his hand up the vagina and found the uterus was ruptured and the child lay in the abdominal cavity. The woman did not appear to be suffering much from shock or hemorrhage. The child was delivered through the T-shaped rent in the uterus and the placenta expressed. There seemed to be no tendency for the tear to close by uterine contraction, and the patient died twenty-four hours after the accident. As he looks back on the case, it seems to have been one where the life of the patient might have been saved by opening up the abdomen, cleaning it out and closing the wound in the uterus.

Dr. Marcy said the blood supply of the uterus during pregnancy is very great and the hemorrhage must be greatly increased, as well as the size of the rent, by dragging the child through this avenue into the world. A rapid laparotomy should be performed. Dr. Marcy was called to a case of pregnancy where the labor was complicated by a large fibroid, weighing seven pounds; the physician in charge had turned the child and attempted delivery by the feet, and in doing so had torn the head from the body and let it remain at the fundus above the tumor. As it could not be removed by the usual channel there was only one thing to do, a laparotomy. The abdomen was opened and the head delivered by an incision in the uterus, but the patient died.

PROLAPSE OF THE IRIS. (HERNIA IRIDIS.)—A CASE OF SUCCESSFUL REDUCTION.

Read before the Tri-State Medical Society of Alabama, Georgia and Tennessee.

BY FRANK TRESTER SMITH, A.M., M.D.
CHATTANOOGA, TENN.

The case before you, David Lucas, of Chattanooga, came to my office September 20 with a history of having been struck in the right eye half an hour previously with a piece of steel. Inspection showed a pear-shaped pupil with the point downward and inward, with the iris prolapsing through a linear wound at the margin of the clear cornea. A solution of sulphate of eserin was instilled into the eye and the patient sent home. Two hours later the prolapse was pushed inside the eye with blunt point of a small squint hook. The iris was freed from the wound except a small part which was adherent to its inner side and it was thought that further use of eserin would reduce this more safely than further manipulation. The pupil was almost circular but was still drawn to a point. Eserin was used for several days, the eye was kept bandaged and quiet enjoined on the patient. The eserin gradually drew the iris from the cornea but in so doing its anterior layers were torn loose and remain incarcerated in the wound. This can be readily seen by direct inspection. In the dark room a red reflex can be seen through this rent, nearly as bright as through the pupil. This interferes with the function of the eye in no way. The vision is 20–15, the same as the other eye. The pupil is now circular. You will notice that at the periphery of the iris the striations are absent, the black pigment can be seen, and by looking obliquely part of the iris is observed adherent to the cornea.

In the diagnosis of hernia iridis, the distortion and displacement of the pupil are important points. The prolapse can not always be distinguished from a foreign body especially if covered with exudation. Attempts at reduction, as a rule, do not succeed, because the surgeon is not consulted at an early period after the injury. This is the only successful case I have ever seen reported. Within a short time an exudate is poured out which prevents the return of the iris effectually. In such cases practice differs, many oculists advising excision; others advocating that it is better to let it alone. The use of eserin is contraindicated if there is any tendency to iritis.

Prognosis is doubtful, generally, most cases recovering with good or fair vision; others result in an inflammation which destroys the interior structures of the eye. All cases of this kind should have the best expert attention available.

CHROMICIZED CATGUT AS A MEANS OF DIRECT FIXATION IN THE TREATMENT OF FRACTURES AND OSTEOTOMIES, WITH A REPORT OF A CASE.

BY F. W. JAY, M.D.
COLUMBUS MEMORIAL BUILDING, CHICAGO.

Without attempting to depreciate the mechanical value of unabsorbable material as a means of direct fixation of the bone fragments in operations performed for the cure of fracture, the writer believes that bone repair is accomplished more rapidly and satisfactorily in the absence of foreign bodies from the bone. He is further convinced that in many cases in which some form of direct fixation of the fractured ends is required, a comparatively readily absorbable material will suffice. Consequently this case, an ununited fracture of the femur of one year's standing, in which some immediate mechanical support was required to retain the bone ends in apposition, and in which sutures of chromicized catgut met the requirements perfectly, is reported.

From the conditions found at the operation, and the methods adopted to secure fixation and union, some points of practical value may be gathered.

Histological research has demonstrated facts in

regard to bone growth and bone repair, that should indicate to surgeons operating for the cure of fractures the value of details in the operative procedures which will greatly aid the *vis medicatrix naturæ*, and in the use of material of but temporary mechanical value we must carefully carry out all procedures that will aid nature's resources, in the accomplishment of bone repair. The case also demonstrates the operative procedures necessary to faithfully carry out operations with absorbable material, which will enable the temporary fixation to serve its purpose, and without which it is valueless.

Each detail of an operation performed for the cure of an ununited fracture, may prove of decisive value in obtaining union; and it was by the minor steps in the operation, as they are by some regarded, that union was effected in this case. As Senn says: "Brilliant operators are not always the best surgeons. The best results in surgery follow the one who is the most painstaking in following out the minutest details."

Considering the periosteum, or its inner layer, the cambium, and the endosteum as the two principal regions of bone, in which are found myeloid tissue with its bone-producing cells, or osteoblasts, the proliferation of which is to accomplish definitive union of fractured bones, (Virchow, C. O. Weber, Gurlt, Billroth, Volkman, Senn), we have in this case some points of interest and value demonstrated.

While definitive union between fractured bone ends is accomplished by proliferation of the osteoblasts of the compacta, as well as of the periosteum and marrow, the latter are regions in which are found bone-producing cells that are in a condition to respond more quickly to the requirements of repair by the early production of callus. These regions are the seat of osteoblasts in a constant and physiologic state of proliferation at the time the fracture occurs, and lose no time in initiating the process of repair. Kraft asserts that karyokinetic figures can be seen in the nuclei of the bone-producing cells of the periosteum twenty to thirty hours after the occurrence of fracture. Hence it is in these regions that we look for that early callus production that will allow of the use of such temporary fixation material as catgut. That such a process can take place promptly only under aseptic conditions is positive, as the method of repair of bone wounds is subject to the same division as the healing of any other tissue, *e.g.*, healing by primary and secondary intention, considering healing by secondary intention where the proliferating cells are compelled to combat infected and suppurating surroundings.

As this was the second operation performed for the cure of this fracture and a buried wire suture had been used in the first operation, which had been performed six months previous to the one reported, the condition of the bone in which this wire suture was found may demonstrate the tendency of *aseptic*, unabsorbable foreign substances in bone to expedite or retard the process of repair.

The word aseptic is italicised because, in regarding the action of unabsorbable material in bone, we shall consider the material used as being absolutely aseptic in aseptic tissue and not influenced in any way by the action of bacteria.

I consider the most thorough antiseptic precautions necessary when catgut is to be used for the direct fixation of bone fragments, although should suppuration occur at the seat of fracture it is a question if an unabsorbable foreign body when infected has not disadvantages that may overtop its mechanical virtues. In this paper we shall consider materials from their influence when aseptic. I believe in the ability of a conscientious and painstaking surgeon to prevent infection, and consider catgut in these cases a blessing to humanity made possible by antiseptic surgery. The possibilities of even aseptic foreign bodies in bone to determine subsequently the localization of bacteria flaating in the circulation is worthy of serious consideration from the influence which such bodies possess to vitiate the surrounding parts, and thus establish a *locus minorus resistentiæ*.

The fact that chromicized catgut was used for the direct fixation of the bone ends, and the more permanent fixation accomplished by the external dressing, and not by more decided means of direct fixation; such as bone or ivory pegs or wire sutures, etc., and less substantial external support, as extension, is, I think, suggestive.

What served to retain the fractured ends in this case until union was accomplished will not establish any surgical rules, yet the fact that such means did serve, and serve perfectly, must be of some value and indicates a rather ideal method to adopt in suitable cases.

HISTORY OF CASE.

A maiden lady, 28 years of age, of good previous health, sustained Oct. 14, 1892, a fracture of the right femur, at the juncture of the upper and middle thirds. She was taken to her home and treated by Buck's extension and long-side splints for eight weeks. As there was no union at this time, her physician advised the forcible rubbing of the bone ends together, as a means of expediting union. She, however, desired to obtain hospital care, and was admitted to one of the large hospitals of the city Dec. 6, 1892. Here extension was applied and retained until April 24, 1893, during a portion of which time she was subjected to a thorough administration of iodid of potassium. As union had not been accomplished at this time, more radical treatment by means of an open operation was advised and consented to. The operation was performed April 24, 1893. The ends of the fragments were denuded and freshened, and one wire suture was introduced through the fragments, the ends of the wire buried, and wound of soft parts sutured. Buck's extension was applied. Primary healing of wound of soft parts. Patient stated that she felt motion at the seat of fracture on the third day following the operation. The use of extension and long-side splint was continued until her discharge from the hospital July 31, 1893. She returned to her home with very great and free mobility at the seat of fracture, completely bedridden. No further treatment was employed until October, 1893, at which time Dr. Milton Jay, by whose kindness I report the case, being called to see the patient, advised another radical attempt to secure union by open operation.

The operation was performed at her home, Oct. 2, 1893. After a thorough preparation of the surroundings of the patient, and the site of the operation, an incision eight inches in length was made in the line of cicatrix, present as a result of the first operation, and the seat of fracture exposed. There had evidently been no attempt at callus formation, as the ends of the bones were conical in shape. They were considerably separated, freely movable, and covered

by cicatricial tissue. The upper fragment was abducted and firmly ankylosed at the hip joint. No attempt was made to produce motion at the hip joint, as the immobility of the upper fragment would prove a strong factor in aiding fixation; and if the upper fragment was brought to its proper axis, a recurrence of the abduction would in all probability occur. It was better treatment to bring the entire limb into a line with the upper fragment and restore the motion at the hip joint after union of the fracture. A wire suture was found in the exposed end of the upper fragment in a perfectly aseptic condition, it having pulled through the lower fragment. It was easily removed, as the bone surrounding it was extremely osteoporotic. In denuding the ends of the fragments, the tissue in immediate contact with the bone was stripped back from the ends of the bone but not removed. It was found that the cicatricial tissue covering the lower end of the upper fragment was but loosely attached to the exterior of the bone, and its separation caused no hemorrhage from the bone; in fact, the bone appeared avascular, and a fear was expressed as to the viability of the upper fragment, or, at least, its lower two inches. This fear was intensified when the medullary cavity was exposed. The marrow was found pale, granular and avascular, as no hemorrhage was excited by removing fragments of it. The tissue surrounding the lower two inches of the upper fragment presented no appearance of active healthy periosteum, but resembled this membrane converted into cicatricial tissue, and its capacity to produce callus by proliferation of the osteoblasts of its inner layer was doubtful. On sawing through the upper fragment, the vessels of the bone were found pervious, as hemorrhage was excited and the bone was therefore viable; but with the little prospect of active cell proliferation from either periosteum or endosteum of the upper fragment, the accomplishment of bone repair and union of the fracture appeared hardly possible. It was believed that the proliferating capacity of the structures in the interior of the upper fragment, in the condition in which they were found, would not be sufficient to produce new bone; but that by curetting the medullary tissue from the cavity, until more active tissue was exposed, a growth of granulation tissue would occur, and that this new tissue would contain active proliferating osteoblasts. By the growth of this granulation tissue into the medullary cavity of the lower fragment and its union with the apparently healthy medullary tissue in this part of the bone, with the subsequent laying down of new bone, union would be greatly facilitated. The medullary cavity of the upper fragment was therefore curetted for a distance of three inches from the exposed end until healthy and vascular tissue was exposed. With the loss of bone from two operations permitting of the greatest mobility and the small surface of bone in apposition, inactivity-atrophy having greatly diminished the diameter of the bone, it would have been impossible to have retained the fragments in apposition without some means of direct fixation.

The bone sutures in this case, were of chromicized catgut, carefully prepared and reliable, of moderate size and used double.

The bone was drilled and sutures passed through a drill-hole into the medullary canal, out at a corresponding drill-hole in the other fragment and tied.

There were four of these circumferential sutures applied. The end of the lower fragment was made slightly convex from above downward to fit into a corresponding concavity made in the lower end of the upper fragment, and when the sutures were tied, the bone ends were found to come perfectly into apposition with the limb abducted, into a line with the upper fragment.

The bone ends were in the apposition produced by a Fenwick's curvilinear osteotomy, which has been found efficient in preventing displacement, as well as having the advantage of sacrificing but a slight amount of tissue.

The atrophic and cicatricial periosteum of the upper fragment was stitched to the periosteum of the lower fragment, covering as completely as possible the break in the continuity of the bone. A most important detail in the operation is to provide a covering of periosteum for the line of fracture by suturing this structure carefully around the bone, thus incasing the space between the bone ends with an osteogenetic structure capable of filling the gap with new bone, as well as preventing the interposition of surrounding soft parts.

The slipping of the bone ends into a ferrule of decalcified bone, as advised by Dr. N. Senn, (*Annals of Surgery*, August, 1893) would prove a valuable aid to the reparative process, especially where it is found impossible to suture the periosteum over the line of fracture.

The wound of the soft parts was sutured from the bottom with several layers of buried catgut. This was done as carefully and thoroughly as could be, in order to obtain as early definite healing of the wounds of the soft parts as possible, especially in the immediate vicinity of the bone; the skin was sutured with catgut and a capillary drain of catgut applied in each end of the wound.

It will be evident that the incision in the soft parts was not only made ample, but that the bone ends were brought clearly into the wound and subjected to radical and thorough treatment. In operating for the relief of ununited fractures, the procedure must be most thorough and radical, being conservative only to a rational degree. The treatment of the bone ends, in such a case as the one here reported should consist in an absolute subperiosteal resection and the bringing together of bone capable of initiating and completing the reparative process. If the bone is subjected to such treatment as this, the aseptic cases of ununited fracture in which union will not be accomplished are rare.

Jacobson—Ununited fractures of the femur: "The large number of failures after operations for this condition are well known. The difficulties which may be present during and after these operations are very considerable; among them, sufficient exposure of the fragments and keeping the wound aseptic are most prominent." He recommends the use of wire sutures, either temporary or permanent, and to treat the wound open to allow of perfect drainage.

Treves—As regards wiring the fragments, says: "So far as the long bones of the extremities are concerned, I think that this measure may very well be dispensed with." It is said that this wire excites the growth of new bone, but if it does it appears to effect its end at a great cost.

"As a practical measure, the wire is a delusion and a snare, so far, certainly, as the long bones are concerned."

Treves does not make use of any direct fixation of the fragments, but makes a subperiosteal resection of the bone ends, and the careful application of an efficient external dressing. This, I am sure, in many cases, providing the treatment of the bone ends is radical, and Treves certainly accomplishes this, will make the use of unabsorbable material unnecessary; but I believe that by the use of bone sutures of chromicized catgut, or some other resisting absorbable material, with the additional procedure of suturing the periosteum over the line of fracture, we have greatly aided the process of repair.

If the presence of permanent buried aseptic, unabsorbable foreign material, used for the direct fixation of fractured bone ends, has a tendency, aside from the mechanical fixation, to expedite the reparative process in the bone, and the definitive union of the fracture, it must be due to the fact that the presence of such material in bone excites and retains a reparative process, and not a destructive one.

The presence of aseptic foreign bodies in bone must excite an osteosclerosis, and not an osteoporosis of the bone in order to *complete* the process of bone repair. All wounds of bone must heal by the formation of a bone cicatrix, of greater or less extent, and a bone cicatrix is formed of sclerosed bone. "But as soon as the fragments are fixed this union occurs, and ossification, running on to sclerosis follows."—*Green.*

Osteoporosis is an early step in the reparative process. "A rarefying osteitis begins probably immediately after the injury and results in a round-cell growth, which slowly eats away the walls of, and enlarges the Haversian canals."—*Green.* The value of this rarefying process in the early steps of bone repair is well demonstrated in the production of callus as a result of Brainard's drill operation.

The use of *temporary* ivory nails to expedite union of fractures, as recommended by Dieffenbach, is a valuable procedure, from the fact that their presence in the bone excites an osteoporosis at the seat of fracture, increasing the vascularity of the part and initiating the reparative process. After they have served this purpose they are a hindrance to repair. The continuation of this rarefying process is, if not actually destructive, at least inhibitory to repair, and will prevent the laying down of new bone in the immediate vicinity of the foreign body. To obtain union, requires the perfect completion of the reparative process; not the simple production of osteoporosis, but the subsequent proliferation of osteoblasts, with the final deposit of lime salts around the new cells. "Prompt bone union does not imply that the osteoblasts at the seat of fracture should undergo karyokinetic changes and multiply, but that the new tissue must be placed under the influences of favorable chemical conditions, which will enable it to be transformed into bone."—*Senn.*

In the case here reported, the wire suture has been present in the bone six months, in a perfectly aseptic condition, and the surrounding bone for a considerable distance was in an extremely osteoporotic condition, while the upper end of the lower fragment in which there was no wire suture was of almost normal density; the slight osteoporosis present in this fragment was simply that due to inactivity.

This suture should have been imbedded in bone scar, or osteosclerotic tissue, after six months influence, if such influence has a tendency to produce this condition in bone.

As far as the conditions found in this case are concerned they demonstrate what is true, that the presence of aseptic unabsorbable material placed in the bone to serve as direct fixation, when allowed to remain beyond a certain limit of time tends to prevent union by retaining in its immediate vicinity a condition of osteoporosis.

"The ends of the fragments are variously affected in accordance with the extent of the rarefying and productive processes which follow the injury; according as one or the other predominates the ends are diminished in size, sometimes to slender conical points or enlarged by the formation of irregular masses of bone on them.

"In a very few cases the rarefying process has gone so far that a large portion or even the whole of the shaft has gradually disappeared.

This tendency to excessive rarefication, when present is a serious obstacle to the success of the operation undertaken to secure union, and it has seemed to some writers to be increased by the presence of metallic sutures binding the fragments together."—*American Text-book of Surgery.*

The osteoclasts, excited into activity by the presence of any foreign body in bone, produce the osteoporosis, although in any case where the material and its site remains aseptic the osteoclasts are sure to be conquered finally, and the material become encysted by the action of the osteoblasts, the battle has delayed union to a greater or less extent, depending upon the relation of the amount of the foreign body to the size of the bone. I believe this rather theoretical assertion to be of real practical value, although I realize that many surgeons at the present time use telegraph wire to retain the fragments of a fractured ulna in apposition.

While the ability of bone to encyst aseptic foreign bodies has been proven by clinical and experimental demonstration, I believe that these foreign bodies retain a condition of osteoporosis at their site for a longer time than is compatible with early, prompt definitive union, and although this is probably never sufficient in itself to cause non-union, it is at least an indication to use as fine a wire as possible, and as small an amount of it as will meet the mechanical requirements.

"The use of metallic suture and similar devices to maintain the fragments in contact with each other is rarely desirable, since sufficient support can usually be given by the external apparatus; the presence of the foreign body appears somewhat to retard bony union."—*American Text-book of Surgery.*

Now, if by any method we can make a readily absorbable material serve the mechanical requirements in any of these cases, such a method should be adopted. Although among the cases requiring direct fixation, we may find at the present time but few in which the surgeon believes such temporary means will suffice, I predict that the number will constantly increase. In describing the repair of recent fractures, Green says: "The ends of the fragments are actively granulating at the end of three days; on the tenth day the periosteum has united and covers the spiral-shaped enlargement of the external callus." And while in ununited fractures the history of the case has already proven that there are factors present that have prevented this rapid and satisfactory callous formation, it is believed by the writer that these factors are local in practically every case,

and that if the operation is made thorough, as regards the resection of the bone ends, and the careful suturing of the periosteum, such a process as Green described will follow in the great majority of cases of ununited fracture.

In regard to the etiology of delayed union and ununited fractures, I will insert here the classification as found in the syllabus of Surgery by N. Senn, after the "American Text-Book of Surgery:"

Defective production of callus.	Suppuration. Scanty covering of soft parts. In joints. Defective local and general nutrition. Lateral displacements. Longitudinal displacements.
General causes.	Rachitis. Syphilis. Pregnancy. Lactation. Marasmus. Acute disease.
Delayed union and pseudarthrosis.	Displacements. Interposition of soft parts or foreign body.
Local causes.	Defect in innervation. Defective blood supply. Inflammation of surface of limb. Loss of substance.
Faulty treatment.	Application of cold. Imperfect reduction. Imperfect immobilization. Circular compression. Early passive motion. Early use of limb.

According to Lewis A. Stimson, "the causes of ununited fracture may be general or local. Among the former, are included general conditions and diseases which give rise to notable deterioration of the health, such as severe acute diseases, anemia, pregnancy and syphilis. Cases have been reported in which these affections have appeared to be the efficient causes, but they are so few that it must be admitted that the influence upon the healing of a fracture in general is very slight. Local causes are classified as follows: 1, unfavorable relations or conditions of the fractured part; 2, interposition of a foreign body; 3, defective innervation; 4, defective blood supply; 5, disease of the bone; 6, inflammation of the surface; 7, defective treatment."

Without commenting upon the causes of ununited fracture, I will make the assertion that the cases in which the essential factor is a constitutional one are very rare.

White and Wood report an interesting group of cases of ununited fractures in the *American Journal of the Medical Sciences* for January, 1893, and illustrate the use of an ingenious mechanical device for the direct temporary fixation of the bone ends, which should serve a most valuable purpose, especially in cases in which an open treatment of the wound was necessary on account of suppuration. They state that Hennequin, in a report of a series of unsuccessful cases of osteotomy and wiring for ununited fractures which he had published, attributed his failures to some constitutional condition interfering with repair. White and Wood state that Hennequin's report certainly illustrates the need of some more reliable and satisfactory method of fixation than the wire suture. This, they believe, will be found in the use of their apparatus.

I would say that in many cases absorbable material can not rationally take the place of unabsorbable and more decided mechanical fixation, and that the apparatus figured by White and Wood is ingenious and valuable from its mechanical virtues and the fact that it is of a temporary character, but I should attribute a certain number of Hennequin's failures, or any other series of failures, not to a constitutional factor interfering with repair, or to imperfect mechanical fixation of the bone ends, but to local conditions retarding or preventing union, conditions which he had not been able to overcome with even decided direct mechanical fixation, the use of which had perhaps led him to make use of insufficient external support. I believe that in selected cases the use of absorbable material for the direct fixation after a subperiosteal resection of the bone ends, with careful attention to the suturing of the periosteum, less reliance being placed upon decided means of direct fixation of the fragment, but extraordinary care in the external dressing, will be productive of better results.

Extension is out of the question when using absorbable material in a fracture of the femur, and in this case as the fracture was transverse, at the time of operation, and there was considerable loss of bone with very little inclination of the fragments to overlap there were no indications for its use. A plaster-of-paris cast was applied, encasing the entire limb, and the body to the armpits, and while hardening, the limb was abducted into a line with the upper fragment.

The catgut sutures in the bone would hold the bone ends in apposition until the cast hardened; they would be of effect until the periosteum and entire wound of the soft parts had united, and the drilling of the holes for the suture and the presence of the suture material itself would tend to excite a reparative process in the bone ends and would allow of such a process accomplishing early union of the fracture. The recovery in the case was uneventful. A fenestrum was made in the cast opposite the seat of fracture at the end of the third week, and the progress noted. There was not at any time much external callus. Rotation of the foot was communicated to the pelvis at the end of ten weeks. The cast was removed at the termination of eleven weeks, at which time there was very little external callus perceptible. Another cast was applied, and allowed to remain five weeks, at the end of which time passive motion was begun at the hip and knee joints.

The fact that absorbable material answered so perfectly in this case may suggest the possibilities of such material as a means of direct fixation of the bone ends in operations of recent and ununited fracture, and the writer believes that the near future will find catgut more frequently used for the direct fixation of fractured bone ends, while the use of unabsorbable material will be less frequently adopted.

As regards direct fixation in osteotomies, we can best introduce what we have to say by quoting from an article by Dr. Wilson which appeared in the *American Journal of the Medical Sciences* for March, 1893, on "Fixation After Excision of the Knee Joint:"

"There is abundant evidence to prove that in many cases, notably those in which there was tubercular osteitis, primary bony union is rarely obtained until after months or years have elapsed, and often when it has apparently been accomplished it yields, resulting in subsequent deformity.

"This would indicate that temporary methods of fixation are inadequate and tend to the abandonment of catgut, which can exert retaining force for a comparatively short time only.

"Steel nails are of doubtful efficiency, because of the short time in which they are employed. They are usually removed at or about the fourth week, *and are generally found to be loose, and therefore easily removed.* (Italics my own.)

"These facts show that they could not have exerted any force. The same statements would apply to screws, gimlets, drills, dowels, or other methods which are removed during the course of the first treatment.

"In four cases in which I have used steel nails four inches long, I have found that *there was absolutely no resistance to their easy removal, and that they were simply loosely imbedded prineipally in the cancellous matter.* (Italics my own.)

"In experiments on the cadaver, screws or dowels did not prevent motion, but upon lifting the leg by the thigh the weight of the leg produced great separation.

"Rotation of the leg broke loose the attempted fixation, and they appeared to be perfectly useless without efficient external support, and the employment of the latter appeared to be just as efficacious.

In the same cadaver, I employed stout wire at four points, through holes drilled in the compact tissue, and found that the objectionable movements were entirely absent although great force was exerted.

"If the wire suture is efficiently used, it would appear to be the method promising the best ultimate results, but its success depends upon its long-continued use.

"I can not agree with Treves, that primary union is apt to be hindered by the use of the metallic suture, and that their presence excites carious action.

"I have seen cases where the wire sutures were in two years after an incision, and Bryant says that he has not removed the wires in any case, unless trouble was caused by them and this rarely occurred.

"The accurate approximation of the tibia and femur, secured by metallic sutures, *naturally permits of less dependence being placed upon the external fixation apparatus*, but should not tend to its disuse." (Italics my own.)

I quote from Dr. Wilson's paper at some length because I take exceptions to his conclusions.

I *do* agree with Treves that the primary union is apt to be hindered by the use of metallic sutures.

I would never allow decided means of direct fixation of the fragments to take the place of decided external support, but always place my reliance on the nature of the external dressing, and make use of such means of direct fixation of the fractured ends as would be productive of the earliest possible bony union.

The only guarantee against later deformity is the absolute and perfect repair and complete ossification of the bone ends, which is accomplished best in the absence of foreign bodies, and if this is not accomplished, wire sutures will never prevent such deformity taking place.

Dr. Wilson reports in his paper a case of excision of the knee, in which he used internal fixation of chromicized catgut, and applied an efficient external dressing of plaster-of-paris including leg, thigh and pelvis, which was allowed to remain five weeks.

At this time, as apparently bony union had occurred, the patient was allowed to walk about, using a light posterior apparatus of plaster. Six months from the time of resection there was found a backward displacement of the tibia.

Dr. Wilson doubts the value of catgut as a means of internal fixation in these cases, and he suggests the use of wire sutures. I attribute the occurrence of post-operative deformity in the case he reports, to the fact that the apparent bony union present at the time the primary cast was removed was not yet complete. I must defend the manner in which this operation was performed, and attribute the latter deformity to some other cause than the use of catgut. I believe with Dr. Wilson that an important point in preventing such an occurrence is the prolonged use of an external support; but I do not believe as Dr. Wilson does, that wire sutures will prevent such late displacement taking place. I attribute the late deformities in these cases to the too early removal of substantial external support. In the case reported by Dr. Wilson, five weeks was too early a date to discontinue the plaster cast. Some of the late displacements take place as a result of an epiphyseolysis, or continuation of the osteoporosis from incomplete removal of the tubercular foci.

"The use of direct means of fixation of the resected ends in resection of the knee joint is being gradually abandoned. If the hip is well supported by a circular plaster-of-paris splint, or a posterior suspension splint, accurate apposition of the sawn surfaces and perfect immobilization of the limb are maintained almost to perfection, rendering the use of fixation nails or sutures unnecessary. The use of proper mechanical support should not be dispensed with until the resected ends have been united by an osseous callus, which will require, according to the age and general condition of the patient, from six weeks to three months.—*Senn's Tuberculosis of Bones and Joints.*

In arthrectomies and joint resections for tubercular affections in which Tilings' most valuable suggestions can be carried out, *e. g.*, temporary resections of those portions of the bone extremities to which important muscles and joint structures are attached; which can after the completion of the removal of the diseased tissue be replaced and fastened to the bone, catgut will serve a most excellent purpose. In the knee joints the patella is cut across transversely and later united with catgut sutures; at the elbow joint the olecranon is sawed with the insertion of the triceps and at the ankle joint temporary resection of the malleoli; at the hip joint the trochanter is temporarily resected and after the completion of the resection of the head of the femur the trochanter is united to the end of the bone, thus saving the attachment of important muscles, as well as securing a center of bone growth for the upper extremity of the femur; an important factor in the prevention of the shortening that follows removal of the epiphysis during the period of bone growth. In all these operations chromicized catgut will meet the fixation requirements.

EPIDEMIC INFLUENZA; COMMONLY CALLED "THE GRIP."

BY EDWARD ANDERSON, M.D.
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This disease has been commented upon by some of our ablest men, but it has not received the consideration it deserves, for it extends throughout the habitable world and has destroyed more lives than the cholera and yellow fever put together, attacking alike the centenarian and the child within its mother's womb.

Statistics show that railroad employes on freight trains are in more danger than men engaged in battle, yet there is much less dread of enlisting in the railroad service than the military. So also is there less dread of the grip than of cholera or yellow fever, for there are not so many lives lost at one time and in one place.

When the Colorado beetle, (the potato bug) first made its appearance among us it was thought that one year would end its ravages, but twenty years have now passed and still it is as great a pest as ever. At first the farmers undertook to pick the insects from the potato vines and burn them, but when they appeared year after year the task became Herculean and some other means had to be resorted to. Arsenite of copper is now employed so that the young beetles may feed on the plants and the poison at the same time.

After tormenting the human race for four years and four months, the grip is as prevalent as ever. As we can not destroy all the microbes that produce this disease, we must saturate the system with some germicide so that they may feed upon the human organism and the poison at the same time and die. Influenza is not only a disease *per se*, but it has entered into and complicated all the diseases and added to their fatality. When called to the bedside of a patient now I wonder at nothing I find present: Temperature ranging from 95 to 106.2 degrees F.; apoplexy in persons formerly supposed to be too young for it; intermittent pulse in those whose heart action was perfect the day before; inflammation of the mucous membranes everywhere, sometimes confined to that of the external ear accompanied by intense pain which is never relieved except after free suppuration. Sometimes it is confined to the membrane lining the air passages, the alimentary canal, the urinary organs or all of these together. Hemorrhages from any of these surfaces may occur at any time and do occur. An uncomplicated case of typhoid fever may be converted into a hemorrhagic case probably ending in death. A hearty meal or even a small amount of solid food may cause sufficient indigestion to produce heart failure or apoplexy, or both. Whole families of children have been swept off by tubercular consumption whose parents were perfectly healthy.

The phases that this disease assumes are too numerous to mention, and those advanced in life, rarely, if ever, thoroughly recover from it. Until last fall I had not lost a white typhoid patient for six years, when out of thirteen adults, six had profuse hemorrhage from the bowels, with four deaths; three directly from loss of blood. I have within the last two months had four such cases from the grip alone, three of which have recovered by the use of turpentine or blue mass and opium. The fourth is now in progress but is nearly cured after the use of salicylate of sodium, everything else having failed,—lead and opium, ergot, aromatic sulphuric acid and all. This patient had a hemorrhage four years ago and has been more or less demented ever since.

I am firmly convinced that the loss of blood in my typhoid cases was due to the grip and that, had their stomachs been in a condition to receive salicylate of sodium, they would still be alive, for all those to whom I could give it recovered.

Dec. 12, 1890, a young man was found wandering on one of our public roads. He did not know his own name or where he came from. I had him under observation only twenty-four hours before his friends took him away, and during that time was unable to find anything amiss with him. After his departure I discovered that he had passed only one ounce of urine mixed with mucus, showing inflammation of the bladder. Two weeks later when influenza became epidemic I would have had no difficulty in diagnosing this case but at the time was sorely puzzled. Three years ago I had under my care a gentleman between seventy and eighty years of age whose digestion was so much impaired by this disease that a mouthful of solid food would throw him into a high fever and would bring about such feeble heart action that I, three times, had to sit by his bedside for ten hours at a time in order to administer whisky and digitalis when needed. This state of affairs continued from the middle of May until the middle of October. One of the patient's legs was swollen and four degrees warmer than the other, as was also the leg of another patient affected with the same disease. As in typhoid fever, as much calomel should be used as can be employed without danger of salivation or undue purgation. In other words, where it is not contra-indicated calomel acts as a specific. Many authorities affirm that benzoate of soda is a specific in the disease under consideration, but I prefer the salicylate of sodium to any other drug where the stomach will bear it, for there is almost always more or less rheumatism or neuralgia present, calling for its employment. The fact is, that any preparation of soda is beneficial, the carbonate often being all that is required. Rochelle salts has acted better in some cases than anything else on account of its laxative properties, and probably also on account of the soda it contains.

I do not condemn the coal tar preparations altogether, as some do, for if not curative they mitigate the symptoms in this disease, and are perfectly safe in the treatment of the young and the aged too, if stimulants are at hand to counteract their depressing effects.

Nine-tenths of the sudden deaths that occur are due, I believe, directly or indirectly to indigestion, and the timely use of the carbonate or some other preparation of soda would avert most of them; and especially has this been the case since epidemic influenza first made its appearance among us. Hence the importance of confining our patients strictly to a liquid diet. Rest in bed should always be enjoined in the acute form of this disease, and often in the chronic form also, particularly if accompanied by hemorrhage.

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Report of the Committee on Medical Education Appointed by the Illinois State Medical Society.

Presented at the meeting held at Decatur, Ill., May 15, 16, 17, 1894.

It will be quite readily conceded by any one who examines into the subject that there is a conspicuous lack of uniformity in the quality of the medical diplomas of this country. That this lack of uniformity has been recognized by other countries is well known, and evidence of the fact is furnished when it is stated that no American degree entitles its possessor to legally practice his profession in the countries of Europe, while nearly all their degrees are recognized here, as entitling their holders to practice under the protection of the law.

It does not follow that the present very unsatisfactory and uncertain status of the American diploma implies either a want of ability, perception or honesty on the part of the American doctor; it came about naturally in the course of rapid national development, and indeed, in view of all the facts I think we should rather feel proud than apologetic of our medical schools. But many of the causes which in the past furnished sufficient excuse or perhaps created a necessity for the medical schools throughout the land to pursue the course and adopt the methods which they did pursue and adopt, no longer exist, and the time having arrived when national development has become so general, when there is no longer any frontier or back settlements, according to the former meaning of those terms, it is likewise time that the frontier and back settlement in medicine should disappear.

Though I am always in favor of a high grade of medical education, I wish to take this occasion to say that it is not my present purpose to in any way discuss the height of the standard of medical education. My sole purpose is to argue for uniformity, to place the American degree upon a firm foundation, so that wherever it is met with its value may be known. Manifestly this can only be accomplished by making it uniform. The problem, then, is to provide some practical means of securing uniformity. Probably there will be first uniform qualification in each State and finally a uniform national qualification.

It would doubtless prove profitable and interesting to investigate the methods long and satisfactorily in vogue in the various countries of the old world, but the conditions here are so very different from those which obtain there that it is hardly to be expected their methods could be transferred to our country. We should, however, always be willing to learn from our neighbors, and we happen in this instance to have a neighbor, the Province of Ontario, which has for the last twenty years had a plan in operation which has given great satisfaction and which I think we would, with certain necessary modifications do well to imitate.

Three cardinal principles form the basis of the proposed measure:

1. Each candidate must have submitted to him exactly the same set of questions.

2. The identity of the candidate must not be known to the examiner.

3. The examining body must be distinct from the teaching body.

The following is offered as a practical suggestion for the improvement of the existing state of affairs:

An Act to establish a State College of Examiners in Medicine and Surgery for the State of Illinois, for the purpose of securing Uniformity in the Qualifications of Practitioners of Medicine and Surgery in the State of Illinois.

SECTION 1.—A State College of Examiners in Medicine and Surgery for the State of Illinois is hereby established and may be known as, and called, "The Illinois College of Examiners in Medicine and Surgery of the State of Illinois." The membership of said College shall be made up as follows: The Governor of the State shall appoint seven members from each of the regularly established medical colleges of the State, and nine physicians who are not connected with any medical college in a teaching capacity, these latter to be known as members at large, as follows: Three members from each college and three of the members at large for a period of two years, the remainder for a period of four years. All subsequent appointments to fill vacancies caused by expiration of term of service shall be for a period of four years. Vacancies of unexpired terms made by death, resignation or other cause may be filled by appointment by the Governor.

The members appointed in the manner as above provided, may elect by ballot a number not to exceed fifty associate members, to hold office not to exceed four years, to assist in conducting the examinations or perform such other duties as the College of Examiners may assign to them. These associate members, however, shall not be entitled to vote at the meetings of the College of Examiners. No person shall be eligible for appointment as member, or to election as an associate member, who is not a regular graduate of medicine in good standing and a member of the Illinois State Medical Society.

SEC. 2.—The College may prepare and adopt by-laws for its government, elect its own officers, collect a fee of not to exceed $25 from each candidate for a license to practice, and a fee of not to exceed $10 each for preliminary or intermediate examinations. The College is hereby authorized to disburse all money received by it, and to make such contracts as are calculated to promote the interests of the organization.

The annual meeting shall be held on the day when, and at the place where, the annual meeting of the Illinois State Medical Society meets.

SEC. 3.—It shall be the duty of the College of Examiners to decide upon and fix the requirements of study and graduation, and to notify the faculties of the various medical colleges within the State definitely, in writing, of these requirements, at least six months prior to the commencement of the fall term succeeding the adoption of such requirements. To hold examinations, not less frequently than once a year at such times and places as it may fix upon, giving at least six months printed notice thereof to each of the medical colleges within the State, and cause a notice of such examinations to be published in the official journal of the Legislature not more than six weeks nor less than four weeks prior to the time said examinations are to be held.

To prepare and cause to be printed for the benefit of students, or prospective students of medicine, a definite statement regarding the course of study and requirements for graduation, together with such other information as might, in the opinion of the College of Examiners, prove helpful to said students.

To present such students as shall at said examinations display a satisfactory knowledge of the several subjects therein contained, a certificate duly signed and to the effect that said student has successfully passed such examination.

To issue a license to practice medicine and surgery in the State of Illinois to such students as pass the final examination, furnish satisfactory evidence of good moral character, and fulfil all other requirements in conformity with the law.

To provide means in conducting the examinations for concealing the identity of students by examiners, and otherwise securing a uniform, fair and impartial examination.

SEC. 4.—All examinations shall be written, each student having presented to him the same printed questions at the same time, excepting that the College may in addition, when it deems proper, call upon any or all students to submit to an oral or practical examination, or both, after the written examination shall have been completed.

No candidate shall put his name, initials or any mark or marks of identification upon his papers of written answers except the number or character assigned to him after he has seated himself for the purpose of writing.

SEC. 5.—Graduates of medical colleges outside of the State of Illinois, and all other persons excepting such as are here-

inbefore provided for, desiring to practice medicine and surgery within the State of Illinois, shall notify the Secretary of the College in writing of such desire, and submit a certificate of their qualifications if they have such certificate, whereupon the College may take such measures as it deems expedient to determine the fitness of such persons to practice medicine and surgery, and grant or withhold a license in accordance with its findings.

SEC. 6.—All other laws regarding the licensing of persons to practice medicine and surgery in the State of Illinois are hereby repealed.

SEC. 7.—The license to practice medicine and surgery granted by the College of Examiners in Medicine and Surgery for the State of Illinois, as hereinbefore provided, shall be the only legal authority to practice medicine and surgery in the State of Illinois.

SEC. 8.—Students of medicine who were registered at a medical college within the State of Illinois prior to the enactment of this law shall be exempt from its provisions.

SEC. 9.—This Act shall only apply to the profession of regular medicine.

NOTE.—The writer is personally in favor of having a joint board providing for homeopaths and eclectics, but for the sake of clearness omitted to provide for it in the above suggestion.

SANGER BROWN, M.D., Chairman.

SOCIETY PROCEEDINGS.

The Medical Society of the State of Tennessee.

Held at Memphis, Tenn., April 10 and 11, 1894.

(*Concluded from page 708*).

SECOND DAY—MORNING SESSION.

DR. B. B. CATES, Knoxville, read an article on

SOME EXPERIMENTS UPON THE PRIMÆ VIÆ, WITH REPORT OF A NEW METHOD OF ENTERORRHAPHY; ITS TECHNIQUE AND RESULTS.

For the purpose of familiarizing myself with the technique of intestinal surgery, and of testing the efficacy of hydrogen gas in locating perforations of the primæ viæ, I instituted some observations upon animals. As far as the technique is concerned, these operations were done with strict antiseptic treatment of the wounds, instruments, sponges, utensils, hands of operator and assistants, but there was no preparation regarding the condition of the animal before or after the operation. Nevertheless, after the abdomen was entered I was very careful to prevent any extravasation into the abdominal cavity, by drawing only that portion of the primæ viæ intended for operation into the external wound, and packing bichlorid gauze around the gut at the margin of the wound. I then displaced the fecal matter from the field of operation by pressing on either side of the gut with my fingers, and tying elastic ligatures around the gut above and below the point of incision in the bowel. These ligatures prevented fecal regurgitation contaminating the wound and embarrassing the operation. No attention was paid to the toilet after closing the external wound, the animal being allowed to run about and eat what it wished. These experiments, eighteen in number, lead me to the following conclusions:

1. Perforations occurring at the site of operation when making invagination, are more liable to be near the mesenteric attachment.

2. Nothnagle's test corroborated three times.

3. When using hydrogen gas in locating perforation and obstruction in primæ viæ, we should be sure there is no occlusion in the rectum, as ordinary feces, etc.

4. In excision of the cecum, when ligatures are applied to the mesentery to stop hemorrhage, there is liability of including the arterial supply of the bowel not in the area of the cut-off gut.

5. That it is not absolutely necessary to apply a ligature to the mesenteric arteries in the cut-off gut, simple compression with hemostatic forceps and carrying the mesentery from its attachment to the cut-off gut being sufficient.

6. In making lateral anastomosis, or end-to-end union of bowel wall, a slight scarification of the serosæ, would, as first pointed out by Davis, of Birmingham, hasten the adhesion and consequent healing of the coapted parts. This may be ignored where the adherent surfaces are backed up by sutures.

7. Where the coapted parts are re-inforced by sutures such as catgut, it serves as a framework for the plastic exudate which is quickly thrown out, thereby shutting off any avenue for the intestinal secretions to escape into the abdominal cavity.

8. Whatever sutures are applied to serosæ, they will be covered with plastic exudate within twelve to forty-eight hours.

9. Buttons offer many advantages as sutures over plates in making approximation of bowels by later anastomosis: 1, time, which is such an important factor in these operations, is greatly reduced: 2, they do not slip about and thus annoy and vex the surgeon; 3, the approximate surfaces can be increased or reduced at the surgeon's will; 4, they act as splints to the bowel and bring the coapted parts into closer union, and the ectropium is easily controlled. Lastly, the button, when it frees itself by pressure atrophy will, on account of its small size, easily pass through the ilio-cecal fissure.

10. Wherever the fistulous communication between the bowel is over an inch in length, a button should be inserted every three-fourths of an inch to prevent ectropium, and bring the bowel into closer union.

11. Lateral anastomosis as a surgical procedure offers better ulterior results in restoring the fecal circulation than end-to-end union of bowels. In the former method, when the opening is not long enough, it is not followed up by so great traumatic stenosis as in end-to-end union.

12. In making this anastomosis, my button is superior to plates, and therefore I offer it to the surgeons of America, (in lieu of plates), into whose hands its future usefulness as a surgical process is resigned.

13. Whatever procedure is adopted, it is safer to back up or enhance the circumference of the fistulous communication in coapted bowels with sutures of fine aseptic silk, which will encapsulate itself, or catgut, which will be ultimately absorbed, the Dupuytren or the Dieffenbach suture being the quickest and easiest applied.

The button used in my experiments consists of a male and a female portion. The female portion of the button is made of brass, though for obvious reasons aluminum or silver would be better, and has a base seven-sixteenths of an inch in diameter, with a small cylinder projecting from it about three-sixteenths of an inch long, hollow from end to end, and with a slit on either side of the cylinder reaching nearly to the base. The male portion of the button, which is solid, consists of a base five-sixteenths of an inch in diameter and a neck one-fourth of an inch long. This fits into and may penetrate beyond the base of the female button. To make the buttons easier of introduction, the female is accompanied by a sharp point about an inch long, which has a neck guarded by a shoulder, and this neck fits into the apex of the cylinder of the female button. The male button is also accompanied by a sharp point, a cap, an inch long, hollow at its base. This fits over the neck of the male button. The technique of the operation, when using the button, is the same as when using the plates until after the incision is made into the intestine, when an assistant arms the female portion with the steel point, which you quickly thrust through the entire thickness of the bowel wall from within outward, commencing on the lower side of the fissure. Then fitting the sharp spike or cap over the male button, it is passed through a corresponding point in the opposite cut edge of the bowel, from within outward. The male is then fitted in the female button and pushed home from within the lumen of the bowel. In like manner the angles of the fissure are approximated, leaving the upper sides of the opening to be closed last. Here the surgeon, after inserting the buttons, is to grasp the base of the male and female buttons separately with tissue forceps, and after inverting the cut edges of the wounds with buttons *in situ*, so as bring the serosæ *vis-a-vis*, he engages the male button in the female and pushes it home from without through the bowel wall.

(This button is smaller than the Murphy button).

DR. J. I. MINOR, Memphis, presented the subject

THE EAR AS A FACTOR IN CAUSING CEREBRAL DISTURBANCES IN INTESTINAL AND OTHER DISORDERS OF INFANCY.

These cases usually first come under the observation of the general practitioner, and he ought to be able to recognize them. Inflammation of the middle ear is the most common cause of these disturbances, when they are due to ear trouble, and for its positive detection only a mirror and ear spectrum is necessary, with an ability to see the drum of the ear. This will be found red and injected when inflamed. The treatment is simple, medicinal applications usually sufficing, ex-

cept in a few cases where pus is present, where paracentesis may be necessary.

DISCUSSION.

Dr. Savage.—Attention is often directed to the ear by spasmodic nursing. Excluding nasal obstruction and capillary bronchitis, the only cause for spasmodic nursing is an inflammation of the middle ear. The child will not hold its head still. Besides, there is a pecular outcrying that is readily recognized after having been once heard. He had obtained excellent results with chloroform in olive oil. This ought never to be warmed, as heat drives off the chloroform.

Dr. Smith mentioned the fact that the general practitioner must not neglect the ear.

Dr. Graddy.—Olive oil alone will accomplish as much as the chloroform and olive oil, and warm goose grease or lard will do the same thing. The action is purely mechanical. When applied locally, chloroform is not an anesthetic.

Dr. Neal thought chloroform valuable.

Dr. Herron had used morphia, atropia, olive oil, glycerin, and chloroform, and considered them all valuable. He had never performed paracentesis.

The President had heard from a non-professional source, that "'possum grease and onion juice" is excellent.

Dr. Cain.—Goose grease is excellent, and warm water is good, as are also hot applications. Dr. Savage failed to mention acute stomatitis as a cause of spasmodic nursing. This is much more frequent than disease of the middle ear.

Dr. Thomas W. Gallion formerly used olive oil and tincture of opium, but now prefers glycerin and tincture of opium, which acts admirably. After congestion of the drum membrane is relieved, he employs warm water douches.

Dr. Savage stated that chloroform has other virtues than those of an anesthetic, and is excellent to keep things sweet. For instance, it will preserve urine almost indefinitely.

Dr. Minor, in closing, said olive oil was excellent. When combined with chloroform, the latter seems to act as a counter-irritant and draws the soreness out.

Dr. T. J. Crofford, of Memphis, gave a

REPORT OF CASES.

This was a report of an operation for epilepsy. The reasons given for the operation were as follows:

1. The epilepsy began with, or soon after, and was always associated with menstruation fer the first four or five years.

2. The attacks were increased by pregnancy and parturition.

3. There was a uterine flow at the time of the attack. Even in the interval between the menstrual periods, four or five years after the inception of the epilepsy, she would invariably have a slight show.

4. Sexual intercourse invariably produced it within twenty-four hours.

5. Examination proved there was a disease in the pelvis.

6. Neither she nor her husband desired a progeny, because statistics show that epilepsy is likely to be transmitted.

7. She claimed a right to be rid of it, a right to enjoy life, and a right to make her life as useful as possible. Both ovaries and tubes were removed to stop menstruation, and she is now much improved.

DISCUSSION.

Dr. Douglas.—It is not a determined fact that the ovaries have anything to do with menstruation, although he (Dr. Douglas) thought it influenced more or less by ovulation. In reference to the sixth reason; if the husband did not desire a progeny why should not *he* have submitted to an operation? When there is nervous disease and local pelvic disease, demonstrating the presence of disease in the ovaries, we should always operate, and epilepsy is no contra-indication. The results show an operation was required.

Dr. Gillespie thought the operation justified, and spoke of a similar case cured by removal of the clitoris.

Dr. Happel did not think the last two reasons would justify an operation. He agreed with Dr. Douglas in reference to the sixth reason.

Dr. Savage referred to the condition being a reflex trouble. If a center in the brain is continuously irritated it will undergo molecular change and the trouble will then continue after the cause is removed. If the general practitioner does not understand the case, he should call a specialist, for thess cases can be absolutely cured if the cause is removed early.

Dr. Crofford, in closing, said the trouble is primarily of peripheral origin, and the central nervous system becomes secondarily involved. Although the moral reasons alone would not have justified an operation, I doubt if I should have operated without them.

Dr. Geo. H. Price, Nashville, presented a paper on

CAUSES OF EYE-STRAIN.

Beginning with the least and ascending in the scale, according to the gravity of the symptoms which they as a rule present, the causes we would consider factors of eye-strain are as follows:

1. Myopia, uncomplicated.
2. Myopic astigmatism, with the rule.
3. Myopic astigmatism, againse the rule.
4. Hypermetropia, uncomplicated.
5. Hypermetropic astigmatism, with the rule.
6. Hypermetropic astigmatism, against the rule.
7. Myopic astigmatism, oblique.
8. Hypermetropic astigmatism, oblique.
9. Myopia, any form combined with esophoria.
10. Hypermetropia, any form combined with exphoria.
11. Myopia, with esophoria and hyperphoria.
12. Hypermetropia, with exophoria and hyperphoria.
13. Myohia, esophoria, hyperphoria and cyclophoria.
14. Myopia combined with insufficiency of interni and externi, insufficiency of externi predominating.
15. Hypermetropia combined with same conditions, insufficiency of interni predominating.
16. Mixed astigmatism, with muscular complications.
17. Muscular conditions alone.

Defective focus is in many cases the least important condition demanding our attention, but at the same time I am not to be understood as disposed to place these entirely in the background, for in some instances they are the only cause of complaint.

A patient comes to you complaining of being annoyed by a sensation of something in the eyes, a gritty feeling, which soon causes the eyes to water and burn when any near work is attempted. If they discontinue the near work, the symptoms subside, to return again when they resume the work. If the work is compulsory, they soon show some conjunctival irritation with hypersecretion of tears and some mucus, which causes a blurring of vision. Later they complain of a tired feeling about the eyes, a running of the letters together, a constricted condition of the brow or head, a pain localized anywhere from the temple to the back of the head, sometimes extending down the back of the neck and about the shoulders, an inability to keep the eyes open or to read for any length of time without growing drowsy, photophobia, a twitching about the lids, later a blepharospasm, choreic condition of muscles of face and extending beyond, or most violent attacks of pain ordinarily called neuralgia, to say nothing of even graver disorders, such as epileptic seizures.

After reporting several cases as examples, the essayist presented a set of prisms he had recently devised, which consists of two prisms in each cell of the frame, resembling in construction the Franklin bifocal lenses, but quite different in their action. The bases of the prisms in each cell of the frame are placed in opposite directions. Their use exercises both the externi and interni. In closing the paper he presented the following statistics, compiled from five hundred cases refracted from March 1890 to March 23, 1891:

Myopia, five cases or 1 per cent.
Myopic astigmatism, sixty-six cases, or 13 1-5 per cent.
Mixed astigmatism, nineteen cases, or 3 4-5 per cent.
Hypermetropia, seventy-one cases, or 14 1-5 per cent.
Hypermetropic astigmatism, 339 cases, or 67 4-5 per cent.
500 cases, or 100 per cent.
(Discussed with Dr. Graddy's paper).

Second Day—Afternoon Session.

Dr. L. B. Graddy, of Nashville, gave a paper on the subject of

THE MECHANISM AND THE PRESENT STATUS OF THE TREATMENT OF ASTHENOPIA.

The paper was an explanation of the mechanism of astigmatism. The essayist claimed that through innervation of the ciliary muscle the other muscles become tonically contracted and exhausted.

DISCUSSION.

Dr. F. G. Smith, Chattanooga.—In young persons with hypermetropia, where there is a good supply of energy and the eyes are strong, glasses may not be indicated, but usually they are indicated. The principle is that a greater or less amount of hypermetropia will be corrected by the glasses. In myopia the indication is for a dim distant vision. The majority of patients may be advised that they need not employ glasses.

Dr. Graddy was impressed with Dr. Price's paper, in that it dealt with very small degrees of hypermetropia.

Da. Savage.—Since the ciliary muscle can influence only the internal and external recti muscles, he could not agree with the author of the paper that that muscle is a veritable Pandora's box, out of which escape all the ills that come to human flesh as a result of eye-strain. There is an intrinsic muscle error and there is a pseudo muscle error, the one very different from the other in nature; and the treatment of the one must be different also from the other. The intrinsic muscle error may depend on the size of the muscle, on its attachment to the globe, and possibly on the fact that it may be too abundantly supplied with nerve fibers. The intrinsic error may affect any one of the six muscles concerned in the movements of the eyeball. The pseudo muscle error is dependent on the now well-known relationship between the centers of accommodation and the centers controlling the internal recti muscles. The intrinsic or inherent muscle errors must be treated by means of operations or by exercise; and it is an easy matter to determine whether the one is to be resorted to or the other. Sometimes it is necessary to resort to both operations and exercise before a case of this kind is cured. The cure of the pseudo muscle errors must be effected either by the correction of focal error or by exercise of either the internal or external recti. Sometimes these cures must be effected by a combination of these two means.

Dr. Price.—In some cases the amount of myopia, hypermetropia, or any combination of myopic astigmatism, or mixed condition, is to be totally disregarded. The most important cases are those in which there is no indication for muscular correction.

Da. Graddy.—If we simply apply tests for exophoria and esophoria, and depend on them, we may say all cases are due to that. When the muscle has lost capacity for strength, the only thing is to operate. Weak prisms, while they do innervate the muscles, may not unjustly be compared with the principles of homeopathy: The little doses may cure; the big doses are certain to cure.

The election of officers followed.

On motion it was voted to pay the expenses of the Treasurer to and from the Society, and to increase the salary of the Secretary $50.

Da. F. L. Sim, Memphis, read

ASEXUALIZATION FOR THE PREVENTION OF CRIME AND THE CURTAILMENT OF THE PROPAGATION OF CRIMINALS.

Capital punishment is a curse to our nation, as it has been to every government on earth that has practiced it. Judicial homicide or legalized murder, are names that place the hanging of criminals in line of proper nomenclature. Even the *methods* of execution are now becoming repugnant to the people, and it is sought to glide the criminal, on "flowery beds of ease" over the Jordan, with the aid of electricity or anesthesia.

The desideratum of the hour is a substitute for capital punishment, now almost a farce with the American people, that will give the greatest protection to the community and avert the degrading horrors of the retreating custom. Tennessee makes rape punishable with death, but this is too good for such a class of men, and the tortures of former times too demoralizing upon the community for their rehabilitation. Castration and the penitentiary are their just dues. Sterilize criminals, confine them in the penitentiary for a term of years, and no ill effects from a moral point of view will follow, while it fully protects from further crime originating in sexual disease, and shields society from their like forever. When the question of insanity is urged in justification of crime, and such mental condition is due to sexual excess, sexual sterilization, whether the criminal be male or female, should undoubtedly be a part of the remedial agency punishment prescribed. Would castration be a grave punishment to man? This question opens a wide field for thought. Castration among the moral, for disease, is grave enough, but with him who devotes his entire thought to sexual gratification, death is secondary to sterility.

In the scientific handling of all criminals, whose crimes are associated with or dependent on sexual depravity, such persons would keenly feel the awful justice of the remedial agency, and would appreciate a life of rectitude, should they regain their freedom. The history of the eunuch of former times shows that he not only lost his licentiousness, but all feeling of manhood and equality as well, and grew fat from an easy conscience and a tranquil nervous system. Sexual sterilization undoubtedly robs the subject of all hope in this world, but it leaves intact his prospects for a life of virtue and happiness in the great beyond. It is to the prevention of such crimes that we must bend our energies if we would save the community.

One has only to look over the current literature of the day, North and South, for assurance that the black people are rapidly coming to the front as criminals. The frequency of the crime of rape perpetrated upon the white female is becoming paralyzing to the country, and yet provisions of our law, making such attacks felony punishable with death, coupled with the terrors of the mob, have not only failed to check but have actually permitted an increase of the crime. A prominent attorney of the law recently informed the writer that certainly not more than one-fifth of the rapes committed by negroes with their own color ever come to light. A free dispensary physician states that application for remedial agents to relieve the suffering following rape or attempt thereat are by no means uncommon.

If the law provided sterilization for all such rascals, the colored man would soon know that rape is a crime of no small magnitude, even with his own color. Then, too, it would place an object lesson, a prideless and demure eunuch, within every negro community in the Southern States.

In former times, in Oriental countries, it was no uncommon habit to castrate males for the purpose of making suitable domestics. Many of them, however, subsequently gained high and honorable rank among the citizens.

In the opinion of the writer, the method of scientific inquiry into the causes leading on to the committal of crime, and the adaptation of remedial agents that render such causes subsequently inoperative, either with or without additional punishment, is the proper method for the immediate and permanent protection of society, the punishment of criminals and the arrest of their propagation.

DISCUSSION.

Dr. J. B. Lindsley, Nashville.—As to capital punishment one-tenth of the little code, constituting that wonderful system of law published by the great law-giver, Moses, said: "Thou shalt not kill;" to this day there has not been any revocation of that code, and you can not find the authority in any government to commit murder under any name whatever, whether in war or peace. Of course it follows that we must have some other mode of punishing criminals. We want to save society from all criminals, and hence the idea of asexualization has been propagated throughout the country. This will eventually be practiced for the prevention of propagation of not only criminals, but of idiots and all people we do not want to live. Questions such as these depend more on medical men than on any other persons.

Da. Rodgeas reported two cases of asexualization of the male. In the first, appetite was diminished directly, though the sexual act could be performed. In this case there may have been some of the secretory part of the testicle left. In the second case, performed about five years ago, there was none left. Several months after the operation this patient claimed there was no particular change, but the appetite has since diminished.

Da. Neil regarded the subject as not in the province of medicine, thinking it a legal and legislative question.

Col. Holt, of the Memphis bar.—This is a living and real question, and one which must be solved by the medical profession rather than the legal profession. The actions of the human mind are as regular in their operations as any of the laws of nature. Scientific men are beginning to consider crime due to a mental aberration or to an abnormal mind. The legal profession can never handle a question of that sort. We regard capital punishment a fallacy. It certainly has not succeeded heretofore; what it may do in the future we do not know.

Dr. Happel has been an advocate of the whipping post. If you apply the lash freely, the little crimes and petty offences will not be committed. Under the present form of punishment, the same criminals are brought back to jail, year after year. The prison punishment is a fallacy. There is an old principle that like begets like. There are exceptions to all rules, but as a rule a criminal will beget a criminal.

Dr. Sim, in closing the discussion, referred to excessive indulgence as a great factor of producing diseases, which are handed down as such. A man suffering the pathological change of chronic alcoholism or excessive indulgence in venery, will hand down his disease in the form of epilepsy, chorea, catalepsy, excessive nervous debility, etc.

Dr. C. R. Atchison, Nashville, presented the

LOCAL TREATMENT OF CUTANEOUS MALIGNANT EPITHELIOMATA.

No matter what the cause of cancer may be, the offending

agent is merely a morbid epithelium, and anything which will remove or destroy this epithelium will cure the disease. A cancer enlarges by peripheral extension, not by centric, the surrounding tissues are infiltrated, though perhaps only to the extent that they can not be recognized by touch or unaided sight. Indeed, these diseased cells are sometimes so slow and insinuating in their growth that they can not be found even with the microscope, yet they prove their presence by a so-called recurrence after operation. These epithelia traverse the lymph channels and pursue their only way in no regular order. It can easily be seen how difficult it is to decide with any certainty how far from the lesion the incision should be made, especially about exposed surfaces where minimum disfiguration is of importance. The way to remove a cancer is to remove the epithelial cells to which it is tributable, and the method of removing them should be employed that is most likely to remove *all* the offending epithelia, even if the operation be followed by more pain and deformity. Other things being equal, we should select that method which gives the least deformity.

Among other means of treating cancer should be mentioned electricity. Though temporary improvement seems to have resulted from the use of the current, no permanent improvement has occurred. As a caustic it is as efficient as other caustics, the disadvantage being that it attacks sound tissue as well as that which is diseased. It is advantageous in some localities where the use of strong caustics is impracticable, as upon the roof of the mouth.

Where there are flat surfaces or where there is a good deal of loose tissue which can be removed without much deformity, the knife had perhaps best be used. Early cancer of the mammary glands is to be removed by this method. No other method can accomplish as good results with as much certainty. Old and advanced cancers upon the extremities are often best relieved by amputation.

In selecting the caustic to be used, it is a *sine qua non* that only those should be chosen that can destroy the epitheliomatous tissue rapidly and effectively; nitric, sulphuric, carbolic and arsenious acids, caustic potash and chlorid of zinc. The use of caustics which are not strong enough to destroy sufficient area immediately, really does more harm than good. The strong mineral acids are sometimes useful, especially when the cancer is small and superficial; but when large and deep seated we had best rely upon the celebrated trio, with which all physicians are familiar, viz.: Caustic potash, chlorid of zinc, and arsenious acid.

Pyoktannin, fuchsin, pyrogallic acid, resorcin and salicin have all been used, but they are slower in action and not so sure as the trio just mentioned, which will do all the others will and do it quicker and better. Cancer, so often pronounced incurable, will become less dangerous when we come to realize the absolute necessity of promptness and the value of caustics.

DISCUSSION.

Dr. Cain mentioned the lymph channels as a method of extension, and for this reason did not indorse the treatment recommended by the essayist; caustics and escharotics. In some cases these are to be used, but usually the knife is the ideal treatment. The remedies mentioned, and all cauteries except actual cautery, would stimulate the spread of the disease through the lymph channels and drive it farther through the tissues. This the knife does not do.

Dr. Louise Druillard reported a case of a child, probably 6 years old, living in a small town in Texas, who had cancer under the ear. It was subjected to operation twice unsuccessfully, and was finally cured permanently upon the application of a paste by a traveling "doctor."

Dr. Crockett reported a case of epithelioma of the cheek, in a patient with heart disease, which was treated like the case reported by Dr. Druillard, and the patient died of heart disease about ten years afterward.

Dr. Jones reported a case of epithelioma within half an inch of the eye, and the same distance from the nose, the growth being the size of a nickel, in which a previous operation with the knife was unsuccessful, and asked if the use of caustics would produce a scar which would be more likely to evert the lid than the use of the knife.

Dr. Hillsman replied that in a case under his observation the lid was everted after the application of a paste by a quack doctor. A great many people will not permit the use of the knife at all, and consequently they fall into the hands of charlatans. We discard this method of treatment too much. There is a tendency of the remedies mentioned to destroy the diseased tissue.

Dr. Happel reported a case operated upon with the knife last June, after caustics had failed. The eyeball, lid and all the tissues from the principal portion of the eye were removed, and so far it has proved a success.

Dr. Douglas.—One reason why the general profession has discarded the various pastes is just because the charlatans have taken them up, and no doubt there is some good in them, but in carcinoma of the breast and uterus, the knife is the only thorough method.

Dr. Cain thought the magical cures, seemingly, were usually not cases of cancer, and if epithelioma is cured at all it is very rare. Dr. Waterfield's case could not have been a case of malignant disease. The diagnosis can only be made with the microscope. In Dr. Jones' case he thought the knife should be used and a plastic operation made to fill up the space. He had known such cases to heal after a plastic operation, but they are very likely to return.

Dr. Atchison, in closing, said the results of the caustics will extend as far as the surgeon would go with his knife, and even farther. We may say there are three circles: The first indicates where the caustic is applied; the second, where the cells had infiltrated; and the third, healthy tissue. Under ordinary circumstances the incision would never be made as far as the second ring, and the cells remaining will then cause another outbreak.

Upon report of the Judicial Council, the following members were dropped from the membership of the Society: Dr. E. E. Jones, Nashville; Dr. B. P. Keys, of Chattanooga; and Dr. E. E. Kerr, Chattanooga.

Under the title, "The Treatment of Inebriates," Dr. Heber Jones, of Memphis, presented a resolution to be offered at the next meeting of the State Legislature, providing for the admission of alcoholic patients to the pay wards of the public institutions. The following resolution was passed:

Resolved, That it is the sense of this Society that the medical profession in this State should unite in an effort to lessen as far as possible the evil effects of intemperance.

Resolved, That in the opinion of this Society this cause can be materially advanced by suitable legislation to this end. It is our belief that many otherwise hopeless inebriates may be permanently cured, if the physician is enabled to exercise proper control over them. We think this can best be secured in our public asylums. We therefore desire to ask the Tennessee Society to use every effort to secure at the next session of the Legislature the enactment of a law permitting any citizen of the State to enter any of our asylums for the treatment of confirmed inebriety. Provided, however, that this shall apply only to the pay department of these institutions.

On motion by Dr. Crockett, a committee was appointed to place the matter before the next session of the Legislature.

Adjourned until the second Tuesday in April, 1895, to meet in Nashville.

The Journal on Top.—Instead of there being an unanimous desire among the profession to do everything in its power to make the Journal of the American Medical Association the leading periodical of its kind in this country, and, if here, in the whole world, there seems to be a desire on the part of some to annoy, hamper and criticise with a view of lessening its growth and power. We are pleased with a recent editorial note under the head of "Captious Critics," in which the editor says in plain language to his adversaries, "mind your own business." The Journal never won a more complete victory than it has recently. A few weeks ago it published an article on "The Abortion of Typhoid Fever." The author of the article claimed he could abort all cases of typhoid fever, and gave a number of cases to illustrate his statement. But he did not give any reference to his methods of treatment, neither did he intimate in any way what that treatment was. This gave another large journal the opportunity to express itself in most forcible terms. The editor says the author of the paper "refuses to divulge his remedy, and it is surprising that any respectable medical journal should give publicity to his claims." But the laugh comes in just here, when the subscribers to each of these journals received their number of the Journal of the American Medical Association which contained the second article, giving the author's treatment in full, nearly a week before the editorial of the second journal arrived. In other words, before the criticism had reached the subscribers, the cause of the criticism had been removed, and the Journal came out on top, as usual. The moral of this little tale is, it is best to look before you leap.—From the May number of *Food*.

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MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues and subscription for THE JOURNAL. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above subscription the weekly JOURNAL of the Association will be forwarded regularly.

All members of the Association should send their Annual Dues to the Treasurer, RICHARD J. DUNGLISON, M.D., Lock Box 1274, Philadelphia, Pa.

SATURDAY, MAY 19, 1894.

PERMANGANATE OF POTASSIUM AS AN ANTIDOTE TO MORPHIN.

The recent advocacy of permanganate of potassium as an antidote to morphin, in cases of poisoning, recalls the treatment of snake bite and other similar applications of this therapeutic agent, and invites to the study of the chemic and physiologic considerations upon which its employment is based.

About 1885 CONDY introduced permanganate of potassium into medical practice as an agent having special power in infectious conditions. He presented it in the form of a solution, which also contained aluminum sulphate, the latter being added to increase the oxidizing effect of the permanganic acid. He asserted that he had found by experiment, that in this form and combination all the available oxygen of the permanganic acid is utilized, whereas only about 60 per cent. of this amount is obtained when the simple alkalin permanganate is used, as in the ordinary solution, which is generally called CONDY'S Fluid, and which was officinal in the "United States Pharmacopœia," edition of 1870.

It has been demonstrated by clinical observation as well as laboratory experiment, that permanganate of potassium is antidotal to infectious disease, because it is destructive to the lower forms of life. It is especially applicable where it can be brought directly in contact with the microörganisms, as in diphtheria, gonorrhea, local infective processes, suppurating wounds, etc. By its great oxidizing powers, it is able to destroy the infectious quality of septic matter, and in virtue of this it is a true disinfectant. The chief objection to its use is that in strong solutions it is caustic; even weak solutions if too freely used, excite irritation and, occasionally, inflammation of the skin and mucous membranes. Thus, in treating diseases of the middle ear, solutions stronger than 1 grain to the ounce should not be used; for the nose and mouth 3 to 5 grain solutions may be employed; and for applications to the skin ordinarily, it is not advisable to order solutions much stronger than this. From 15 grains to a drachm to the pint of warm water, is the ordinary limit for the treatment of foul ulcers, bromidrosis, etc. Twenty-four grains to the ounce is considered a saturated solution, but this is only exceptionally used, applied locally to counteract infection. That the permanganate of potassium is a germicide has been fully established by the experiments of STERNBERG. As an antiseptic, it has the great advantage over corrosive sublimate of being comparatively non-toxic and of being a prompt deodorizer.

To DR. S. WEIR MITCHELL is due the credit of suggesting the use of permanganate of potassium in snake bite, in which it has proved to be a valuable resource. In order to obtain the antidotal action, the solution is to be injected as quickly as possible after the accident, directly into the punctures made by the fangs of the snake and also in the immediate neighborhood, so as to secure the contact of the remedy with the yet unabsorbed poison. This treatment was indorsed by LACERDA, and many instances of its successful application have been reported. To cite a single communication out of many, we may refer to the paper[1] of DR. A. W. BARBER, of Cheyenne, based upon the successful treatment of nine cases of rattlesnake poisoning by means of permanganate of potassium. The method he employed is the following: A 15 per cent. solution is kneaded into free incisions made to the bottom of the wounds; it is also injected hypodermically in the vicinity, and the dressings wet with the same solution applied. Alcohol and carbonate of ammonium are also given in amounts regulated by the state of the pulse; laxatives, diuretics and diaphoretics are subsequently utilized in eliminating the poison. An important point in DR. BARBER'S method is the intermitting application of the tourniquet, by means of which only a little of the poison is permitted to enter the circulation at a time. Here the permanganate is used locally as a chemic antidote and the well-established physiologic antidotes, alcohol and ammonia, are relied upon to overcome the poison as it gradually enters the circulation, in what might be termed broken doses.

The oxidizing effect of this agent has also been utilized in the condition of phosphorus poisoning. Last year, BOKAI recommended the internal administration of a solution of one-third of 1 per cent. strength, where phosphorus in substance had been taken into the stomach. It acts by coming in contact with the poison in the stomach and converting it into ortho-phosphoric acid, which is harmless. Here again it acts only upon the excess of poison remaining in the stomach, and does not follow the toxic agent into

[1] Therapeutic Gazette for January, 1892.

the circulation. Indeed, the statement of RINGER that "the permanganate itself can not pass into the blood undecomposed," is in full harmony with the teaching of other authorities. Moreover, on account of its attraction for organic matter, the permanganate is decomposed in the stomach in a very few minutes after being swallowed.

We now come to the most recent application of permanganate of potassium, as an antidote in the treatment of morphin poisoning. Its claims rest upon the experiments and clinical trials of DR. WM. MOOR, published in the *Medical Record* of February 17 of this year. According to this observer, morphin is rapidly oxidized by the permanganate, even in the presence of peptones and albumen. By clinical experiment it was ascertained that if comparatively large doses, of from 3 to 5 grains of sulphate of morphin, are quickly followed by a solution of permanganate of potassium, no narcotic influence will result. In other words, the permanganate, by oxidizing the morphin prevents the toxic effects from being manifested. As the result of several trials, which corroborated his first experience, DR. MOOR pronounces the permanganate of potassium a reliable antidote for morphin, if given immediately after the poison has been swallowed. He gives from 10 to 15 grains, dissolved in half a pint of water, repeated at intervals of thirty minutes. It may be assumed as proven, then, that in a case of morphin poisoning the permanganate, as in the former instances cited, acts as a chemic antidote and renders inert the poison yet unabsorbed, with which it must be brought in contact. There is absolutely nothing to warrant the view that this agent can act as a systemic or physiologic antidote to morphin or any other toxic agent. Nevertheless, cases are reported, occurring in different parts of the country, in which the permanganate is employed hypodermically, the poison having been administered by the stomach. The widespread newspaper notoriety given to this new treatment, according to it prominence immensely beyond its importance, can only be accounted for on the ground that it originated in New York city, and first appeared in the daily papers which are always eager for the sensational and the marvelous, but are poor authorities in matters of science. The most recent communication on the subject appears in the *Medical News* of May 5. It is a clinical report emanating from the Homeopathic Hospital of Pittsburg, and is entitled: "Practical Applications of Potassium Permanganate as an Antidote to Laudanum."

In this communication a case is reported, in some detail, in which it is stated that about eighty cubic centimeters two and one-half fluid ounces of laudanum, of unknown strength, had been swallowed some three hours before the patient was brought to the hospital. He was then comatose with respirations only four to the minute. In addition to the usual treatment, including coffee by mouth and rectum, and hypodermic injections of atropin, artificial respiration and so on, and when the case seemed hopeless, repeated injections of a half-saturated solution of permanganate, in doses of 2 drachms, were administered at intervals of half an hour. After the third injection, improvement was first observed, and after the fifth injection the patient became conscious and tried to articulate. With the fact that recovery was delayed by abscesses of both arms, we are not immediately concerned; the main fact is that the patient recovered, as did also two other cases, which were not so marked, and in which the same treatment by hypodermic injection of permanganate was resorted to.

From what is known of the chemic nature and physiologic effect of permanganate of potassium, we must admit that the successful use of this agent administered hypodermically, in cases of laudanum poisoning is something we were not prepared for. We can understand that when morphin which is a powerful reducing agent, is brought in contact with the permanganate, which is a vigorous oxidizer, a mutually destructive reaction would ensue. But when the morphin enters the blood where the permanganate can not possibly follow, the antagonism ceases to be available. It is possible that when hypodermically administered, although decomposed in the tissues, the nerve centers may be influenced by some of its products, but even if so, it would not be permanganate *per se*, but something else which does the work. What the active agent may be in such case, it ought not to be a very difficult matter to determine. In the meantime the distinction between a chemic and physiologic antidote must be kept in view and, above all things, we should not require of a chemic antidote that it shall be also a physiologic one.

A new antidote to morphin was not urgently demanded and it could not in fact be truthfully denominated as a "long-felt want," since the treatment already in general use is very efficient and, as a rule, is successful. But even allowing some usefulness to potassium permanganate as an antidote, when swallowed immediately after morphin has been taken into the stomach, this will not warrant the assumption that in such cases its hypodermic administration will have any beneficial effect. Certainly, we are not warranted at this stage of the investigation, in abandoning our well-known physiologic antagonists in the treatment of poisoning either by morphin or by opium or its preparations. When a human life is trembling in the balance and fatal coma is threatening, it would be criminal to lose time by experimenting with therapeutic novelties, to the exclusion of the established treatment and the "rejection of the accumulated experience of the profession." Some

might be led to do so, however, were no word of protest raised against the implication that the suggested treatment is a safe and efficient substitute for the approved methods already in use.

THE STATE SOCIETIES.

By the time this number reaches the readers of the JOURNAL, nearly all the State societies will have held their annual meetings—meetings which, judging from the proceedings, seem to have been marked by great harmony, unanimity of sentiment and fraternal feeling. The chronic growler was there as usual, but either his voice was husky, or there was something in the atmosphere whiich prevented its resonance, for very little of him appears in the reports of the proceedings.

The time is ripe for professional organization, and the profession at last seems to have realized it in a largely increased attendance of most of the societies, notwithstanding the financial stringency of the times, which has reduced professional incomes very materially and made collection of earned bills extremely difficult. The attendance has been fully the average in most cases, and several of the societies have increased it. We have printed abstracts of the proceedings of some of them; others are to come, and it may fairly be said that at no time in the history of American medicine has the standard been higher, nor have the papers presented shown higher scientific value. With this awakening of the profession to a sense of its duty, there is little question that the local, State and national associations will steadily grow in usefulness for the profession, and exert a commanding influence on all public questions in which the profession as a whole are interested.

THE MEDICAL DEPARTMENT OF THE NATIONAL GUARD AND OF THE ARMY.

In the *Congressional Record* of Tuesday, May 8, 1894, we find the following: *Senate Proceedings:* The Vice-President presented a memorial of members of the Medical Department of the National Guard, remonstrating against the passage of House Bill 6373, relating to the reduction of the Medical Department of the Army, which was referred to the Committee on Military Affairs. *House Proceedings:* By the Speaker (by request): Memorial of delegates from the Medical Department of the National Guard of the States to the fourth annual meeting of the United States Military Surgeons, against reducing the Medical Department of the Army, as proposed in House Bill 6373,—to the Committee on Military Affairs.

Our National Guard brethren did well in taking prompt action in a matter of such vital importance to the efficiency of the Army Medical Department, and we trust that their protest will meet with the consideration which it merits. The surgeons of the National Guard can recognize better than most medical men the importance of having, in time of war, a thoroughly educated and disciplined medical staff. The memorialists held that to keep the Army Medical Department up to its present point of efficiency, young men must be elected from time to time, educated in practical sanitation and familiarized with military methods and discipline to take the place of those who drop out by disability, age or death. A gap of eight years in the recruiting of the Department, which would be the result of the proposed legislation, would be felt harmfully for a generation to come. We trust this will not be.

MUTUAL CONSULTATIONS ARE NOT CONFIDENTIAL.

In a murder trial where the defense is insanity and the court, upon motion of the accused, with the consent of the district attorney, appoints a physician to make an examination, and to testify on the trial, as the mental condition of the accused, the Supreme Court of Colorado holds, in the case of Nesbit v. People, decided March 7, 1894, that an examination and consultation between the accused and the physician, under such circumstances, are not confidential, and that the physician can be called by the State to testify in rebuttal, even though he has not been called by the accused. It can not be, it is said, that an accused can seek and obtain such an examination at the hands of the court, and with the consent of the prosecution, with the privilege of introducing the testimony if the result of the examination shall be favorable to him, and yet reserve to himself the power of excluding the testimony if it shall be unfavorable.

DUTY AND POWER OF THE WISCONSIN COUNTY BOARD.

The Supreme Court of Wisconsin holds, in Rider v. Ashland County, that it is, in that State, without doubt, the duty of the county board to procure and furnish all needful medical aid and attendance to persons confined in its jail, and to such poor persons as are a county charge. It may be more convenient and cheaper to engage one physician by the year than to employ one or several by the visit, and without previous engagement. Whether the employment shall be by the year or by the visit is in the discretion of the county board. It is not a question of power, but of detail, merely.

ASSUMPTIONS PERMITTED IN HYPOTHETICAL QUESTIONS.

Counsel are not confined to facts admitted or absolutely proved in propounding their hypothetical questions to experts. So declares the Supreme Court of Colorado in the case of Jordan v. People, decided March 7, 1894. They may assume, the court holds,

for the purposes of the questions, any statement of facts which the evidence tends to establish. It is the province of the jury to determine the truth or falsity of the assumed facts.

CORRESPONDENCE.

Revision of Constitution and Code.

Troy, N. Y., May 4, 1894.

To the Editor:—The adoption of the amendments to our Constitution, By-laws and Code of Ethics, as proposed by the special committee and printed in the Journal for April 7, might induce results in some directions not apparent from a cursory examination of the subject—effects it is to be hoped not intended by the gentlemen making the majority report.

The changes are in some directions so radical it would seem that probable danger of evil would be appreciated at once, even from a cursory reading of the report, but finding on inquiry that some of my friends failed to notice the *trend* of the amendments, I concluded that the length of the document, the variety and number of subjects necessarily considered, and the separation of provisions so as not to fully disclose the extent of their relations, might confuse one not on the alert, or not familiar with such subjects.

Though the proposed amendments have received able and careful consideration at the hands of several revisers in the columns of the Journal, notably by Dr. N. S. Davis, I feel that there is occasion to emphasize some of the objections which have been presented.

The title of our Association would imply an intention to have an organization on principles consonant with the governmental and social features of the nation, *i.e.*, it should be an *American* association.

The first radical and fundamental change provided for, consists in the abolishing of delegates—who at present are the voters at the meetings—and the introduction of a provision for a *general active and voting membership.* This would place the affairs of the Association in the hands of the members of the profession residing in the vicinity of the place of meeting. This amounts to an endeavor to apply the methods of the town-meeting,(invaluable in their proper spheres) to affairs having a national importance. It is consequently undemocratic, in that it would allow a small and sectional portion to act for the whole and to cite the British Association as an instance of the successful application of the proposed methods is specific and misleading, as a moment's reflection on the relative territorial extent and density of population would show.

The importance of the questions to be decided at the approaching meeting should be ample illustration of the danger which might arise in leaving the Association in the hands of the voters of a certain locality, which locality may by wily methods be selected for certain but concealed purposes, for language is said, at times, to conceal thoughts.

This radical change in the legislative methods of the Association should be considered in connection with certain other proposed amendments which are not found in direct relationship or order of verbal sequence, but are found by adding together detached but related items. Some of these disarticulated provisions give the following results:

1. It is provided that the chairman of each Section shall appoint a Nominating Committee, ("consisting, if practicable, of ex-chairmen of the Section") to nominate Section officers.

2. The Executive Committee of each Section shall consist of the chairman of the Section, and his predecessors in that office for the two years just passed.

3. The Executive Committees of the several Sections shall meet together and constitute a General Business Committee.

4. Much of the business of the Association is to be referred to this General Business Committee without debate.

5. This same Business (should we say *Busy*) Committee is to be the Nominating Committee.

If the revisers of the Constitution intended to offer provisions whereby the wishes of the whole profession, in all parts of the country, could find expression in the proceedings and acts, in the management of the affairs, and in the official *personnel* of the Association, their schemes must prove a signal failure, for a better plan for a close corporation could hardly be conceived. These provisions are in every way anachronisms, unless governmental methods are to evolute backward.

I shall not accuse the Committee of an intention to place the control of the Association in the hands of a few men, nor will I press my objections closer by urging that in this scheme the general practitioners, who still constitute the large majority of the profession, will find that they can have only a very limited share in the official work of the Association. As a matter of fact, the present organization, when contrasted with this new scheme, would illustrate a republican and representative liberty in contrast with a probable oligarchy. And all this, we were told at Milwaukee, is to be done for the interests of the Association and for the advancement of scientific medicine. *Is* it true that words are means for concealing thoughts? Let any one weigh carefully the natural tendency of the provisions for the government of the Association to which I have called attention and then consider, if it can be truthfully claimed that log-rolling has existed under our present plan of organization, what should be the estimate as to the probable evils in that direction under the new *regimé* (which would be a heptarchy, more or less).

These objections do not exhaust the subject as to the proposed Constitution, but they seem broad enough and deep enough to suffice.

And now a few words concerning the Code: I will take as my text an extract from the Milwaukee "Proem," in which they say: "The Committee deprecates all efforts to abolish, belittle, distort, ridicule, or otherwise lessen its hold upon the profession." As a matter of fact, the adoption of this *newest* Code would do each and every one of those five things, only it would come in the reverse order of their statement. It took ten years to go through a similar process in the State of New York. *Facile decensus.*

The dignified and pure English of our present Code has been the subject of frequent comment; and while wishing to avoid any mere verbal criticism of the Code reported by the Committee, I feel it is but right to state that its principal claims for credit as a composition lie in the large extracts it has received from the old Code. But, without stopping to specify such points of comparison, which though important are not of first interest, we may briefly consider a few of the radical changes from the provisions of our present Code.

In their preliminary report at Milwaukee, the Committee were at considerable pains to show that a specialist and general practitioner are not fit parties to a consultation, and the inference is that the average physician is only the guide-board to the office of the specialist, or the quasi usher for that individual.

It is submitted that no provision in a Code is necessary to show *how* a physician may relinquish the care of a patient, when the motive is purely personal, but it is proper that specialists should be kept in mind of the fact that general practitioners exist who are competent to discuss with them

questions relating to their special fields, and it should be freely conceded that there are specialists who are competent to discuss cases from the standpoint of the general physician. As a matter of common courtesy, the physician is entitled to a full consultation if he desires it, and no presumption to the contrary should be created. I believe that all well qualified and well disposed physicians and specialists will accept that proposition.

We should remember in this part of the question that the *sedilia* of infallibility abides neither with the physicians nor with the specialists, and that "honors are easy" so far as errors are concerned.

Personally, I shall insist on my right to a consultation where I am to have any professional interest in a case, though I may waive my privilege for personal reasons.

As to the provision which allows consultations with "legally qualified practitioners," the object is so apparent as to require no comment, for without the limitations made by the old Code, in most of the States it would virtually allow consultations with all the varieties of charlatans, for the *respectability* of the *licensing board* would be a matter of taste.

One word concerning patent rights and proprietary medicines. Justice is always to be honored and sought; but justice is not always to be found, particularly by a superficial consideration of a case. No honorable means for pecuniary advancement should be closed to members of the profession, but if our surgeons are to furnish a quota of itinerant venders of the latest modifications of forceps, scissors and *snares*, and specialists with stethoscopes, ophthalmoscopes, etc., or ingenious physicians with a turn for chemistry and the "main chance," should conclude to patent the latest "extract," and all be added to the hordes of non-professional representatives of business firms who now invade our offices, who is to protect the general practitioner who seems to be the natural prey of such schemes and schemers. He would need some additions to the litany of defense and deliverance.

As a matter of fact, how many instances of invention of surgical appliances can be adduced where notable pecuniary profit would naturally follow a patent, at least sufficient to justify the sorry spectacle of a scramble for success in the sale of rival inventions. There is our solution of the question, and it seems the only one, *i. e.*, if the invention is likely to be more profitable than the honors and rewards connected with strictly professional work, then let the inventor cease to practice medicine and surgery, patent his "machine," and enter upon the strictly business methods belonging to its manufacture and sale.

If we are to remain a *liberal* profession we must avoid the methods of pure commerce.

This new Code, we should remember, is practically a twentieth century code, and yet let us pause a moment, only a moment, to consider its provision relative to advertising. After following the language of the old Code so as to condemn and prohibit advertising *by the general physician*, the revisers add: "It shall not be considered a violation of the spirit of this section, however, for physicians engaged in the work of medical education, either singly or associated in colleges, or for *physicians practicing in hospitals, whether public or private, general or special, to announce the fact or allow it to be announced to the profession in the advertising pages of strictly medical journals, or for physicians devoting special attention to one of the recognized special departments of medical practice, to note the fact on their signs or private cards.*"

Who is to decide on the list of "strictly medical journals?" Let us pause and think of the deluge of that kind of literature which the postman brings almost daily. Is it not another notice to the family physician to hide his diminished and still diminishing head? Pah! The thing is offensive. The proper limitations have been fixed by long usage interpreted by the present Code, and this new provision would prove to be the thin edge of a very large wedge which would split off all that has been retained of good from the old Code in relation to the subject.

One point more and I will stop, though not for want of material for criticism—it is sadly abundant.

The Committee has stricken out all those parts of the old Code which relate to "the obligations of patients to their physicians and the public to physicians," as useless and "superfluous," according to their Milwaukee announcement. It has been the opinion of many, and the writer shares that opinion, that much good has been done, and much more might be done, by placing the Code in the hands of intelligent laymen, but the "logic of events" pursues our revisers even here, for they have devoted an Article (Article III, in Part I) to "circumstances under which physicians may properly decline to render their services," in which they refer to "reciprocal obligations of patients to their physicians." Where is the scheme or standard for their "reciprocal obligations?"

Gentlemen of the Committee: You took ample time, nearly two years, to formulate your revision of the Code, which you yourselves said should be couched "in phraseology so plain as to make it a practical, common-sense document for daily guidance in the performance of our various duties." Have you *accomplished* your work? Is your instrument philologically the equal of the one you seek to abolish? Is true liberty as loyally upheld? Have you thought that the adoption of your scheme would result in class distinctions and provide a means for class oppression? Is it possible that you contemplated a failure in the adoption of your proposed Code, but made provisions in your new Constitution which would facilitate such ethical changes in the near future? These questions are too serious for other than the most careful consideration. My own judgment is that your efforts have been misdirected and that it would have been well "had you stopped before you began."

Your obedient servant, E. D. Ferguson, M.D.

Electricity for Salpingitis.

Chicago, Ill., May 12, 1894.

To the Editor:—I always find it interesting reading the report of the proceedings of the American Electro-Therapeutic Association, and in the Journal of April 7 an article appeared read before that body by Dr. W. B. Sprague, of Detroit, on "A Contribution to the Electro-Therapeusis of Salpingitis." As this subject is of great interest, and as I have found it especially interesting, you will pardon me if I review his article.

The pathology of tubal troubles has been so recently evolved that the therapeusis is still in the embryonic stage. Many of our leading lights declare that there can be no rational therapeusis—that there can be no remedy but extirpation—as if decapitation were a cure for cephalalgia! Yet many men have a firmer faith in nature's economy, and are seeking to aid her efforts at repair by, at least so far as possible, removing the cause. Nearly all cases are accompanied by, and most of them caused by endometritis, either acute or chronic, specific or non-specific. Since this has been established, our first duty is plainly to relieve the endometritis. To this end, many forms of treatment have been advised, but Polk's revival of Sim's conception of depletion and drainage seems to be the only one which has brought satisfactory results, and the relation of parts is such that the application of this principle to the womb produces a direct as well as an indirect influence upon the tubes—it removes the cause and relieves the

chronic congestion in those cases which bear the treatment well.

Now the severity of the measure by which it is accomplished, as taught by its author and the profession at large, has limited its applicability in the hands of even its warmest advocates. Divulsion, and curetting of an inflamed womb with inflamed adnexæ has often aggravated the inflammation, making extirpation necessary. This has seemed to the surgeon good ground for the argument that extirpation should be the first and only resort.

But Apostoli has taught us that the same results may be attained by a milder and more rational means; the intrauterine application of the negative pole of the constant current of electricity is the most reliable method we have for treating endometritis to-day, the *rationale* of which is this same principle of depletion and drainage, by the cataphoretic action of the current, aided by the trophic influence and by its constriction. Goelet has shown that the influence extends to salpingitis and, if carefully and judiciously used, is the safest and best treatment yet advocated for this affection. He says that many cases of simple inflammation of the lining membrane of the tubes will subside with the endometritis, if free drainage through the uterine canal is established and maintained, and if protection is afforded against such influences as would tend to irritate the sexual organs.

My experience leads me to indorse the foregoing most heartily, but the object of this contribution is to call attention to a modification of Goelet's treatment which has been quite successful, in a few cases in my hands. At the meeting of the Michigan State Medical Society held at Grand Rapids in 1890, I reported a case as follows:

"Mrs. H., aged 32, has had one miscarriage, but for several year previously she had suffered from pain in the right iliac region, at frequent intervals. A year ago last April she began to suffer more than ever before, and she came to me for relief. She told me, in describing her symptoms, that she had an enlargement in the side, with pain. I found this enlargement to be considerable, but the abdominal muscles were strong and I could not distinctly outline it. I diagnosed an ovarian tumor, and felt that my diagnosis was confirmed as I watched its growth in after days. But one day she came to tell me that she had had a free discharge of yellow matter after a sensation as of something giving way the night before, and the swelling was subsiding. An examination proved the correctness of her statement, and I changed my diagnosis to pyosalpinx. My treatment up to this time had been merely palliative, principally faradism, to relieve the pain. She was now comfortable, and I suspended treatment a few weeks, when the tube began to fill again. I resumed the faradism, and soon after added galvanism. On June 15 I gave twenty-five milliampères, intrauterine, negative. After three intrauterine applications, the last one sixty-five milliampères, I changed to the vaginal electrode, placed against the tube, and gave sixty-five milliampères June 29. Soon after this, there was a second discharge of pus, and relief from pain. I gave twenty-one more applications similar to the last described, before March 29, 1890, when the tube had again filled and was giving considerable trouble. I now determined to try to effect an entrance. I therefore converted my graduated uterine sound into an electrode, insulating it with small rubber tubing, and passed it into the womb. I then connected it with the negative pole of the battery and turned on ten milliampères. Turning the end of my sound toward the right cornu, I exerted gentle pressure against the point that I thought to be the proximal end of the tube. Suddenly, within five minutes, my sound slipped onward about an inch. I was startled, and thought of perforation of the uterine wall, but perceiving my patient undisturbed I decided that I had really been more fortunate than I had expected, and accomplished my purpose. So I passed the electrode still further in and raised the current to twenty-five milliampères for seven minutes. There was free discharge of pus for several days following, and renewed relief from all the symptoms. I have since introduced the sound into the tube on May 12 and 25, and on June 12, the last time in the presence of Dr. Manton, who kindly came in to confirm my diagnosis. The tube seemed quite empty of pus at the last sitting. The sound has passed more readily at each subsequent sitting, and enters to a depth of more than five inches. The patient, who is a seamstress, has not lost an hour's work from treatment and her general health is much better than a year ago." (Trans. Michigan State Medical Society, 1890).

The subsequent history shows that the patient was completely cured. The author of the above paper also gives the history of several other cases that are very interesting. Further on in his valuable paper he says: "I am aware that the possibility of entering the tubes in these cases is discredited, and I have found many cases in which I have been balked in my efforts, but I have good reason to believe that I have succeeded in several cases besides these that I have reported, and have had no untoward results following my efforts in any instance."

The author ends his paper by describing the method by means of which he effects an entrance into the tubes:

"I use an insulated Simpson sound, with the normal curve a little accentuated at the extremity. As soon as I have passed the internal os uteri, I turn the point of the instrument to the side which I wish to enter and gently follow along the bottom of the fossa until I reach the os uterinum of the tube, which is indicated by the points sliding into a slight depression. I then attach the negative conductor, turning on slowly, ten to thirty milliampères, according to the nature of the case. I exert just sufficient leverage to hold the bulbous point in firm contact with the ostium. I usually notice evidence of the cataphoretic action by the oozing of fluid from the os uteri. In those cases where I have succeeded in entering the tube I have felt the point of the electrode suddenly advance, and have immediately found it fixed, as if in a narrow canal. In some instances I have then been able to advance it from one to three inches farther, and then have felt the point in the ovarian region, with the other hand, through the abdominal wall, in several instances. After the first one or more treatments the point does not always stop at the fornix, but enters the tube readily, as was the case in the instance where Dr. Manton verified my observations. I have always exercised great care to avoid force, simply guiding the electrode, with my hand supported at the forearm. With this precaution, and the low current used, I do not think the danger of perforation is as great as is sometimes represented."

In the discussion which followed, Dr. A. Lapthorn Smith said that if this paper had been read before the Philadelphia Obstetrical Society the author would be glad to escape from the room with his life. At the same time he quite agreed with the author in his statements. He felt quite sure that the tubes can be catheterized. Dr. Wallace showed him in his Liverpool hospital six cases at one time in which he had introduced a uterine sound into the tubes. Again, he had himself frequently had cases in which fluid accumulations in the tubes were discharged spontaneously. The source of the discharge had been proven by the use of clean, dry, cotton tampons. In view of these facts, why can not we empty the tubes in the natural way through the uterus?

Dr. N. W. Weber, of Detroit, also spoke in favor of the method.

Dr. Massey said that while appreciating this conservative

surgery, it should not be forgotten that this work is for experts only. In 1888 he had himself brought the subject of treating such conditions by intrauterine negative galvanism up before the Philadelphia Obstetrical Society. He succeeded at that time in emptying a number of tubes. Dr. Sarah A. Stevenson, of Chicago, said that notwithstanding the law which has been laid down that electricity is contra-indicated whenever there is pus present, she had for a long time employed it in such conditions. Dr. Sehrung remarked that as electricity is known to cause dilatation of various apertures, it would seem that this agent would greatly facilitate the catheterization of the tubes.

Now I was tempted to review considerable of the author's paper because it is of unusual interest, and because the article might be entirely overlooked, especially by those who do not use electricity, or by those gynecologists who are of opinion that the only treatment for pyosalpinx is extirpation of the tubes.

The great law of surgery—drainage—holds good here as in other conditions, and that drainage through the uterus can be effected is, according to the above testimony and to my mind, beyond a doubt. (Though there may be some exceptions where entrance into the utero-Fallopian opening can for some reason not be effected, and which would be cases for the surgeon.) I have myself treated cases of pyosalpinx, and have seen the pus ooze out of the uterus; the last case is still in my charge but is completely recovered from that trouble.

That a sound can be passed into the Fallopian tubes in the healthy state is also, I assume, an accepted fact. Dr. E. C. Dudley, Professor of Gynecology at the Chicago Medical College, several years ago, in one of his lectures remarked: "Gentlemen, having passed a sound into the uterus a number of times and having determined positively that it is—say three and one-half inches deep, and you subsequently by turning your sound a little to one side or the other, find it suddenly slips in an inch farther without force, you can conclude that you have entered the Fallopian orifice."

Now then, as pyosalpinx is a retention of pus within the Fallopian tube, and as this pus is retained because the utero-Fallopian orifice is closed, undoubtedly by an inflammatory adhesion, from the above testimony, the experiments of Bozeman and Newman with the use of negative galvanization of fibrous strictures of the urethra, and from the well-known dissolving qualities of the negative galvanic current, we are justified in giving this treatment a fair trial. We may thereby save many tubes, and keep many women from undergoing the terrible ordeal of a laparotomy.

JOHN KERCHER, M.D.

American Medical College of St. Louis.

To the Editor:—My attention has been called to an article in your JOURNAL, headed "*Stirring up the Colleges*," published in the issue of April 7. Will you do me the honor of correcting that which seems to me a great injustice to the American Medical College of St. Louis? Your informant, in speaking of the act of the Missouri State Board of Health, says, among other things, that the Dean of the American Medical College has been notified that this College does not conform to the requirements of the Board, and therefore its diplomas will not be recognized as entitling their possessors to practice in Missouri. I desire to say, that *no such notice has ever been received*, and that your article was the first information I had read on that subject. My attention was called to it by a private letter of inquiry from New York. This College has been in good standing for the last twenty years, and if an action of the kind has been taken by the Board, justice would demand that due notice be given that the College might have an opportunity to answer to the charges.

I imagine that this damage inflicted, has served as a precedent for abrupt action of other State Boards, hence the great injustice there is in it; among these the State Board of Health of Illinois, a notice of which is given in your JOURNAL of May 5. Had your correspondent in this case given the reason for their action, it would have shown more fairness. Want of proper equipment and apparatus seems to have been the basis of action with the Illinois Board. It is true that some carelessness in this regard had crept in, and when the Illinois committee visited us they came abruptly and gave us no opportunity to supply what might seem to them a deficiency. This College has been taught a lesson and has now undergone a thorough change and has equipped itself. When Boards of Health will give us their standard in these matters they will find the American Medical College perfectly willing to conform to their wishes.

Respectfully,

C. YOUNKIN, Dean.

Reply to Dr. Worcester.

RICHMOND, VA. April 25, 1894.

To the Editor:—Allow me a few lines in reply to the "open" and "sweet-spirited letter" of your fair correspondent, O. E. Worcester, M.D., of Florida, in your issue of April 21:

1. The age of legal consent in Virginia is 14 years.

2. Twenty years ago I organized a Magdalen Home and have been its President ever since.

Your account of "a domestic chloroformed in a physician's office" must be taken with a "grain of allowance." I have learned to have little faith in the excuses for women's fall told by themselves. It is the old story.

3. The dishonorable doctor spoken of was not worthy of belief. Bad men always believe others as bad as themselves. This man is a slanderer of his brethren. But as I have sent your correspondent my pamphlet on "Woman's Place," where woman's power of self-protection is fully discussed, I need say no more on this subject here.

My advice to young girls going out from the Magdalen Home is to hold their persons sacred and let no man put his hand upon them. If lynching followed lying and betrayal or assault, it might be better.

4. Nine-tenths of the doctors in this city will not disobey the law you refer to. There are always "men of the baser sort," as Paul says, in every city. But I can not discuss this subject with a lady. Though an M.D. married thirty years, with ten children, yet there are some questions I would not think of discussing with my wife, from respect to her finer feelings. I claim and have proven that women are "*four times*" better and purer than men. The shrinking, instinctive modesty in woman which causes her to shun man's gaze and veil her eyes, I hope never to see removed. It is the golden shield that God has given her. No union do I want to see between the sexes, but that of holy matrimony. Familiarity is dangerous. The women at the North who expect and demand that men shall be as pure as women, don't know what they are talking about. There is no excuse for the unfaithfulness of married men. But I did not expect to say so much. Respectfully,

W. W. PARKER, M.D.

Colorado State Medical Society.

DENVER, COLO., May 11, 1894.

To the Editor:—As notice has, by some misunderstanding, appeared in the JOURNAL, that the Colorado State Medical Society would entertain the delegates to the AMERICAN MEDICAL ASSOCIATION on their way to San Francisco on May 30,

it is to be regretted that, the State Society not being in session at that time, and no committee having power to take any such action, the Society will be unable to give any such entertainment.

Members and officers of the Society residing in Denver will, however, be glad to meet members of the AMERICAN MEDICAL ASSOCIATION as they pass through Colorado, and the latter are again cordially invited to become the guests of the Colorado State Society during its session, June 19 to 21, on their return from the Coast.

Yours very truly,
J. N. HALL, Chairman Executive Committee,
Colorado State Medical Society.

ASSOCIATION NEWS.

The Association Train will leave Chicago Monday, May 28, via Santa Fe R. R., Rio Grande Western, and Southern Pacific, for San Francisco via Denver, Colorado Springs, Leadville, Manitou, Glenwood Springs, Salt Lake, Ogden, Truckee and Sacramento. Returning, after the meeting, the train will pass through Sacramento and Northern California to Portland, thence east by way of the Northern Pacific R. R. to St. Paul. C. M. & St. P. R. St. Paul to Chicago. A stop over at Yellowstone National Park for those who desire it has been arranged, and it has been understood that at several places on the journey there will be short stops. President Hibberd's party in a special car join the train at Chicago, and the St. Louis party are expected to join at Kansas City. From all points east and south, concentrating on this train should be effected at Chicago and St. Louis. For all information relating to this train, fares, etc., address J. M. Connell, 212 Clark st., Chicago, or any agent of Santa Fe line in other cities. Rates promised are the lowest excursion rates at time of departure.

This is the only route on which arrangements have been perfected by the Trustees.

Program for Section on State Medicine.—The Prevention of Diphtheria, from the standpoint of the Health Officer, U. O. B. Wingate, Milwaukee, Wis.

Diphtheria, Andrew W. Imrie, Detroit, Mich.

On the Principles of Sanitary Science, the Chief Obstacles to their Practical Application, and the most Efficient Means for the Removal of such Obstacles, N. S. Davis, Chicago, Ill.

A Study of Impure Air in the Causation of Inebriety, T. D. Crothers, Hartford, Conn.

State Medicine in the United States, What is it? P. C. Remondino, San Diego, Cal.

State Medicine, its Relation to Patent Medicine, Sam'l. P. Duffield, Detroit, Mich.

The Physician and State, Chas. E. Winslow, Albuquerque, N. M.

Leprosy, H. S. Orme, Los Angeles, Cal.

Restriction of Tuberculosis, J. H. Davison, Los Angeles, Cal.

Consumption and its Prevention, Winslow Anderson, San Francisco, Cal.

Cleanliness as the Chief Antiseptic, C. F. Ulrich, Wheeling, W. Va.

The Bath in Modern Medicine, Chas. H. Shepard, Brooklyn, N. Y.

Drinking Water, Hal C. Wyman, Detroit, Mich.

Transportation Companies as Disseminators of Contagion, S. S. Herrick, San Francisco, Cal.

Vaccination and Re-Vaccination, Ezra M. Hunt, Trenton, N. J.

To be announced, Walter Wyman, Surg.-Gen. M.H.S.

To be announced, J. H. Kellogg, Battle Creek, Mich.

To be announced, Lawrence Flick, Philadelphia, Pa.

To be announced, Jas. A. Steuart, Baltimore, Md.

To be announced, F. H. De Vaux, Valley City, N. D.

Section on Obstetrics and Diseases of Women.—Dr. Joseph Eastman, Chairman of the Section, will deliver the Annual Address. The following papers will be presented:

Treatment of Fibroid Tumors of the Uterus, Franklin H. Martin, Chicago, Ill.

The Pedicle in Abdominal Hysterectomy, A. H. Cordier, Kansas City, Mo.

Removal of Fibroid Tumors through the Abdomen, E. E. Montgomery, Philadelphia, Pa.

Placenta Prævia, Llewellyn Eliot, Washington, D. C.

The Influence of Gestation upon Chronic Diseases of the Kidney, T. Ridgeway Barker, Philadelphia, Pa.

Tetanus Puerperarum, Allison Maxwell, Indianapolis, Ind.

Some of the Uses of Strychnia in Obstetric Practice, John Milton Duff, Pittsburg, Pa.

Status of the Means to Banish the Pain in Parturition, William B. Dewees, Salina, Kan.

Symphyseotomy, with Case, W. Winterberg, San Francisco, Cal.

Recto-Vaginal Fistula, its Etiology and Surgical Treatment, Augustus P. Clarke, Cambridge, Mass.

Suspension of the Uterus in Extreme Anterior Displacements, H. R. Holmes, Portland, Oregon.

A Plea for Thorough Training in Obstetrics and General Medicine on Part of the Gynecologist, Henry Parker Newman, Chicago, Ill.

A Case of Didelphic Uterus, Unilateral Hematometra, Hemasalpinx and Hematocolpos, X. O. Werder, Pittsburg, Pa.

A Case of Gangrene of the Mammary Glands, J. Schneck, Mt. Carmel, Ill.

Emmett's Inside Operation, Joseph Price, Philadelphia, Pa.

What Causes Relate to the Unsatisfactory Results following the Removal of Diseased Uterine Appendages. Hugo O. Pantzer, Indianapolis, Ind.

Ovarian Pain, O. B. Will, Peoria, Ill.

SOCIETY NEWS.

New York State Medical Association.—The Fifth District Branch of the New York State Medical Association will hold its tenth annual meeting in Wurzler's Building, 315 Washington Street (near City Hall Square), Brooklyn, on Tuesday, May 22, 1894.

The morning session will be called to order at 11 A.M., and will be devoted to the President's Address, On the Prevention of the Disagreeable and Dangerous Symptoms produced by Ether as a General Anesthetic.

Biographical sketches of the late Dr. W. T. White, by John Shrady; Dr. John Young, by C. M. Kittredge; Dr. Wm. Govan, by I. D. LeRoy; Dr. M. K. Hogan, by Wm. O'Meagher; Dr. A. L. Carroll, by E. S. F. Arnold, J. W. S. Gouley, G. T. Harrison, C. A. Leale, A. Lukens, Stephen Smith, J. G. Truax, W. C. Walser.

A scientific paper on the Dietetic Treatment of Consumption, will be read by Dr. T. J. McGillicuddy.

The afternoon session will be called to order at 2 P.M., and will be devoted to the remaining scientific papers:

The Treatment of Chronic Oöphoritis by Electricity, Edward Sanders. Discussion opened by L. G. Baldwin, of Brooklyn.

Report of a Case of Chronic Peritonitis with Intestinal Fistula. Celiotomy. Enterorrhaphy. Recovery, Frederick Holme Wiggin.

General Discussion of Vaccination. Opened by F. A. Jewett, S. E. Jelliffe and H. H. Morton, of Brooklyn.

The Nominating Committee will then make its report on members of the Executive Committee for the ensuing year.

Association of American Physicians.—The ninth annual meeting of the Association of American Physicians will be held in connection with the third Congress of American Physicians and Surgeons, at Washington, D. C., May 29, 30 and 31, and June 1.

President's Address, Reginald H. Fitz, Boston.

The Treatment of Certain Symptoms of Croupous Pneumonia, particularly in Adults, Beverly Robinson, New York.

A Treatment of Typhoid Fever, Samuel A. Fisk, Denver.

Six Cases of Traumatic Headache, C. F. Folsom, Boston.

Clinical Report of Two Cases of Raynaud's Disease, Frederick P. Henry, Philadelphia.

Dr. S. C. Martin's Researches on the Bacteria of Vaccinia, Harold C. Ernst, Boston

Morphology as a Factor in the Study of Disease, Opened with a paper by Harrison Allen, Professor of Compara-

tive Anatomy in the University of Pennsylvania, and discussed by Thomas Dwight, Professor of Anatomy in the Harvard Medical School, Dr. Frederic H. Gerrish, Professor of Anatomy in Bowdoin College, Dr. Frank Baker, Professor of Anatomy in the University of Georgetown, and Burt C. Wilder, Professor of Physiology, Comparative Anatomy and Zoölogy in Cornell University.

Modification, Temporary and Permanent, of Physiological Characters of Bacteria in Mixed Cultures, Theobald Smith, Washington.

The Effect of Various Metals on the Growth of Pathogenic Bacteria, Meade Bolton, Baltimore.

Note on the Observation of Malarial Organisms in Connection with Typhoid Fever, W. Gilman Thompson, New York.

Experiments in Artificial Melanosis, George Dock, Ann Arbor.

Stomatitis Neurotica, A. Jacobi, New York.

Tetany in America, J. P. Crozer Griffith, Philadelphia.

Sewer Gas, The Bacteriology, by Alexander C. Abbott, First Assistant in the Laboratory of Hygiene, University of Pennsylvania; As a Cause of Disease, by Abraham Jacobi, Professor of Diseases of Children in the College of Physicians and Surgeons in New York City.

The Distribution and Control of Leprosy in the United States: The Distribution. Opened with a paper by J. Nevins Hyde, Chicago, and discussed by Wm. C. Haraway, St. Louis, and James E. Graham, Toronto. The Prophylaxis and Treatment, opened with a paper by Jas. C. White, and discussed by George H. Fox, New York City, W. C. Wyman, U. S. M. H. Service, and Joseph D. Bryant, New York City.

Lead Palsy in Children, Wharton Sinkler, Philadelphia.

A Study of the Temperature in Cerebral Apoplexy, Charles L. Dana, New York.

The Mild Character and Diminished Prevalence of Syphilis and the Infrequency of Visceral Syphilis, John H. Musser, Philadelphia.

Some Remarks on the Significance of Albumin and Casts, especially in those past Middle Life, Frederick C. Shattuck, Boston.

Experimental Phthisis in the Rabbit with Formation of Cavities: A Demonstration, T. M. Prudden, New York.

A Report of the Ultimate Results obtained on Experimental Eye Tuberculosis by Tuberculin Treatment and Anti-Tubercular Inoculation, E. L. Trudeau, Saranac Lake.

Nephritis in its Surgical Aspects: Opened by a paper by Edward L. Keyes, of New York City, followed by a paper from George M. Sternberg, Surgeon-General U. S. Army, on the Bacteriology of Nephritis, and discussed by George Chismore, of San Francisco, Cal., L. Bolton Bangs, New York City, Francis S. Watson, Boston, Mass., and W. N. Wishard, of Indianapolis, Ind.

The Conservative Surgery of the Female Pelvic Organs. Papers will be read by Wm. M. Polk, of New York, and Wm. Goodell, of Philadelphia.

Address by the President of the Congress, Alfred L. Loomis, on the Influence of Animal Experimentation on Medical Science.

Some of the Chemical and Bacteriological Characteristics of Milk, Thomas M. Rotch, Boston.

The Chemical Products of the Anerobic Putrefaction of Pancreatic and Hepatic Tissues, and their Effects upon the Tests for Morphia, Victor C. Vaughan, Ann Arbor

Gastro-Enteric Rheumatism, H. M. Lyman, Chicago.

A Case of Osteomalacia, George Dock, Ann Arbor.

A Case of Calculous Pyelitis with Invasion by the Bacillus Lactis Erogenes, J. H. Musser, Philadelphia.

The Surgery of the Accessory Sinuses of the Nose: To be discussed by J. Solis-Cohen, Philadelphia. F. I. Knight, Harvard, George M. Lefferts, New York City, F. H. Bosworth, Dr. William C. Glasgow, of St. Louis, and E. Fletcher Ingals, of Chicago.

The Influence of Infectious Processes on the Nervous System: Pathology and Etiology, Jas. J. Putnam. The Relation to General Nervous Diseases, E. C. Seguin, of New York; the Relation to Mental Disease, by Charles K. Mills; the Therapeutics, by F. X. Dercum, of Philadelphia.

PUBLIC HEALTH.

A Leper Hospital.—At the request of the Senators and Representatives from Louisiana, the Secretary of War has given New Orleans and the State the right to use the Government military reservation at Fort Pike for a hospital for lepers and contagious disease patients.

Quarantine on the Great Lakes.—Ohio, Indiana, Michigan, Wisconsin and Illinois, through the executive officers of their respective State Boards of Health, have adopted the following:

Resolved, That no vessel plying on the lakes should be allowed to enter any port within the boundaries of our respective States without having on board, subject to inspection, a bill of health, duly signed by an officer of the United States Marine-Hospital Service.

Yellow Fever Precautions.—A State disinfecting station has been ordered by the Florida State Board of Health to be established at Fernandina, Fla., similar to that at Mullet Key. Port physicians are on duty at Fernandina, Mayport, Key West, Punta Rossa, Punta Gordo, Port Tampa, Apalachicola and Pensacola, and strict inspection of all vessels is enforced. The Jacksonville Sanitary Association reports a balance of yellow fever funds in its treasury amounting to $26,545.33, drawing 4 per cent. interest. It contributed $2,000 to the relief funds of Brunswick, Ga., and other places last year.

"Membranous Croup" vs. Diphtheria. — Dr. H. M. Biggs, the bacteriologist of the New York City Board of Health, has been led, as a result of his recent examinations, to recommend that so-called membranous croup be included in the list of contagious diseases. In the bacteriologic examinations of 286 cases reported as "membranous croup," 229—or about 80 per cent—were proved to be true diphtheria by the existence of the Klebs-Löffler bacillus. Of the remaining 57 cases, 40, or only 14 per cent. of the total number, were clearly not true diphtheria, and 17, or 6 per cent., were doubtful.

Cholera in Europe.—It is not even "cholerine" now in Lisbon, according to late cable dispatches; what was so reported at first and subsequently was pronounced by Medical Director Montaldo of Madrid, after a personal investigation, to be Asiatic cholera, it is now asserted, on the authority of the Austrian Consul-General at Lisbon and the Portuguese Minister at Washington, is only diarrhea and "absolutely dangerless." Meanwhile, from time to time, there continues to be received more or less definite reports of the westward extension of the disease from Russia and Turkey through Austria to the Iberian peninsula and to France.

Smallpox in Chicago.—Chicago continues to be the center of interest with respect to smallpox. Contrary to expectation the milder weather has caused no diminution in the number of new cases reported daily; there was an increase of 17.3 per cent. in the second, as compared with the first, week of May, and of 37.5 per cent. in these two weeks as compared with the month of April. The total number of cases reported between January 1 and May 14 is 1,559. The growth of the epidemic during this period is shown in the following figures—to which are added, for purposes of comparison, the figures for the corresponding period in the epidemic of 1881-83.

	1894.	1881.
Daily average of new cases in January	4.1	2.6
" " " " February	8.3	3.5
" " " " March	9.8	3.2
" " " " April	18.1	4.4
" " " " May	24.9	2.7

Percentage of increase or decrease:

	1894. Increase.	1881. Increase.	Decrease.
February as to January	102.6	34.6	. .
March as to February	18.	. .	8.5
April as to March	82.6	37.5	. .
May as to April	37.5	. .	38.6

Increase of May over January, 1894, 507.3 per cent.
" " " " 1881, 4.6 "

As heretofore remarked, the result of this comparison is

not reassuring—especially in view of the fact that the epidemic of 1881–83 did not reach its height until January, 1882, when there were 1,038 cases, and did not finally die out until September, 1883, with a tale of 6,786 cases, 2,518 deaths, an actual money cost of $940,948.80, reported and a constructive cost of $5,528,122.66, exclusive of the aggregate of misery, suffering and loss of life. Chicago is now three times larger than then and can well afford to spend whatever sum is necessary to prevent a repetition of that experience. The municipal authorities have at last awakened to a comprehension of the gravity of the situation and have given the Health Commissioner, Dr. A. R. Reynolds, plenary authority and resources, hitherto wanting. On the 13th a proclamation was issued ordering the vaccination of "all persons within ten days from this date;" there has been a large increase of the vaccinating corps and of the quarantine police force; hospital accommodations have been enlarged, so that every case of smallpox may be removed at once; the "sweat shop" district has been put under the direct supervision of the State Board of Health; and the U. S. Marine-Hospital Service of the port, under charge of Dr. Hamilton, inspects every vessel before it leaves the harbor.

The following is the form of the bill of health furnished:

BILL OF HEALTH.—Marine-Hospital Service. District of the Great Lakes. Surgeon's Office, Port of Chicago, Illinois.——189.

To Whom it May Concern: This is to certify that I have this day carefully inspected the——of——whereof Captain——is Master, and have inspected the passengers and crew. The crew have been vaccinated.

I further certify that the vessel and its cargo are in good sanitary condition, and that none of the passengers or crew are suffering from any contagious disease. JOHN B. HAMILTON, Surgeon U. S. M.-H. S.

By——Surgeon U. S. M.-H. S., Inspector

No. of crew——No. of passengers——No. of officers——.

BOOK NOTICES.

Essentials of Practice of Pharmacy. Arranged in the form of questions and answers, prepared specially for pharmaceutical students. Second edition, revised by Lucy C. Sayre, Ph.G., Professor of Pharmacy and Materia Medica, University of Kansas. Philadelphia: W. P. Saunders, 1894. Price $1.00. An excellent book of its class.

Manual of Practical Obstetrics. By EDWARD P. DAVIS, A.M. M.D., Professor of Obstetrics and Diseases of Infancy in the Philadelphia Polyclinic, etc. Second edition, revised and enlarged with 134 illustrations. Philadelphia: P. Blakiston, Son & Company, 1894. Chicago: E. H. Colgrove & Co. Price $2.50.

When the first edition of this book appeared we commended it as being a concise summary of obstetrical knowledge. The illustrations are good and the teachings fully abreast of the time. We note that the author lays less stress on antiseptic treatment of the cord than modern teachings would seem to indicate. With the exception of this slight omission there is nothing to criticize.

An Aid to Materia Medica. By ROBERT H. M. DAWBARN, M.D. Professor of Operative Surgery and Surgical Anatomy, New York Policlinic. Third edition, revised and enlarged by Woolsey Hopkins, M.D. New York: G. P. Putnam & Sons. 1894.

The preface to this book states that "this revision of the book was made necessary by the changes in the last United States Pharmacopœia. The book aims to present in a brief space in tabular form all the drugs and preparations recognized by the Pharmacopœia. It is interleaved for the convenience of the physician. It contains the doses and the decimal system, as well as the old English form, with samples of prescription writing in the metric system. The little book will be found extremely useful.

Seventh Annual Report of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania, 1891. Harrisburg. Paper, pp. 1,044. The same, 1892, pp. 785.

The work of our State Boards of Health is an index of the general intelligence of the community. Great praise is due to the manifest zeal and wisdom in action of this Board, yet we can but feel that the thousands of intelligent citizens of the great State of Pennsylvania, and especially the members of the medical profession, have failed in their duty to the State by not insisting upon an appropriation that would have a moderate relation to the needs of the community. As it is, any emergency finds the Board wellnigh helpless.

We find much of present interest and of permanent value in these pages. Every practitioner should regard himself as an assistant of the Board of Health, and nowhere so well as in these records can he read the lessons taught by loss of life due to lack of cleanliness and of care for infectious disease.

The reports of proceedings of the American Public Health Association, of the Section on State Medicine of the AMERICAN MEDICAL ASSOCIATION, and of the Pennsylvania State Sanitary Convention, and a Compendium of the laws of Pennsylvania relating to Public Health and Safety find a place in these volumes, and enhance their permanent value.

The first volume contains the report of the Secretary of the Board and minutes of meetings, and twelve appendices comprising reports of standing committees, of inspections, annual reports of cities, reports of conferences and conventions, articles on quarantine, disinfection, epidemics and special sources of disease, circulars issued by the Board, a compendium of laws relating to public health and safety, etc.

The second volume contains the report of the Secretary for 1892, minutes of meetings and appendices including reports of committees, of inspections, articles on quarantine, disinfection, epidemics and special sources of disease, reports of conferences and conventions, circulars issued by the Board, annual reports of cities, etc.

NECROLOGY.

BEN. DAVIS, M.D., New Holland, Washington, April 25.——M. G. Osborn, M.D., Delmar, Iowa, April 23.——T. T. Dorwin, M.D., Decatur, Ind. He had been retired from practice for some time and for the last ten years had been President of the Decatur National Bank.——M. L. Malory, M.D., of Rochester, N. Y., April 28.——W. H. Carruthers, M.D., of Northfield, Minn., May 1.

WM. V. KEATING, M.D., died suddenly at St. Joseph's Hospital, Philadelphia, immediately after making a brief address to the graduating class of trained nurses. At a special meeting of the Hospital Staff, April 20, the following action was taken:

It was with peculiarly painful, tender and reverent feeling that the Medical Staff of St. Joseph's Hospital assembled to pass resolutions in memory of their most distinguished colleague and beloved President, Dr. William V. Keating, who for nearly fifty years has faithfully served the Hospital, with no recompense except the approval of his own conscience and the gratitude of those whose hearts were in the service of the same Divine Master.

Dr. Keating was interested in the Hospital even prior to its foundation, securing funds by personal effort and his own generosity, and since by his professional eminence aiding, and always giving unsparingly of his time, effort and wisdom.

To him the Sisters of the Hospital went freely, always sure of wise counsel in perplexity and sympathetic assistance in every effort to advance the Hospital in the efficiency of its charitable work. He was alive to every professional advance, and in singleness of heart he labored to place those institutions with which he was connected always abreast of the times.

That his ripe wisdom and his last strength and hour should be expended in the service of that institution to which he gave freely his youthful vigor, has in it an impressive example of duty performed to the end.

"Dr. Keating died shortly after addressing a few encouraging words to the class of nurses in training, making his remarks brief because of the illness he felt suddenly overwhelming him.

To the gentle Sisters was given the opportunity to render the last services to their old friend and benefactor of years—moments pitifully brief, yet not without their consolation.

The Staff passed the following resolutions:

Resolved, That in the death of Dr. William V. Keating the medical profession has lost a man of most distinguished ability, who has reflected honor upon the profession alike by his attainments, his spotless integrity and loftiness of character.

Resolved, That St Joseph's Hospital has lost a friend whose labor and far reaching influence will long be felt.

Resolved, That we, as a Staff, have lost a true friend, whose example of professional culture, high bred and delightful courtesy, untiring devotion to duty, kindness and purity of heart we will hold in reverent memory.

Resolved, That the Sisters of Charity and all friends of the sick poor have lost an efficient and sympathizing helper.

Resolved, That we publish and communicate to the family of the deceased the sentiment and resolutions of this meeting.

MISCELLANY.

Change of Address.—Dr. W. L. Schenck, of Kansas, to New Castle, Colo. Dr. E. J. Doering to Hotel Metropole, Chicago.

Gladstonian Nerve.—The anecdotes regarding the Grand Old Man are beginning to pile up, now, in suitable commemoration of his marvelous public career that is now drawing to a close. Mr. Smalley, the well-known correspondent of the New York *Tribune*, stands sponsor for the following medical narrative of a man who never knew what fear meant:

"Mr. Gladstone is now staying at Biarritz. The day before he left he called on Dr. Granger, who has succeeded Sir Andrew Clark as the Premier's physician, and who is also an oculist. He told Mr. Gladstone that a cataract had obliterated the sight of one eye and that another cataract had begun to form on the other. The Prime Minister reflected a moment, and said: 'I wish you to remove the cataract at once.' The physician replied that it was not yet far enough advanced for an operation. 'You do not understand me,' answered the Premier; 'it is the old cataract I wish removed. If that is out of the way, I shall still have one good eye when the new cataract impairs the sight of the other.' As the physician still hesitated, Mr. Gladstone continued: 'You still seem not to understand me. I want you to perform the operation here and now, while I am sitting in this chair.' 'But it might not be successful,' said Dr. Granger. 'That is a risk I accept,' was the instant reply."

Ambroise Pare Accused of Poisoning his King.—Lately there has appeared in Paris an admirable medico-historical sketch of the diseases and death of Francis II, of France, by Dr. Albert Potiquet. The King was sickly from infancy, but he was sufficiently robust to pass successfully through an attack of variola when four or five years of age. His death was probably caused by the extension of mid-ear trouble to the brain. Among his surgical attendants was Ambroise Paré, who was present when a consultation was held for the purpose of determining the question of trephining the King's cranium. The operation was adjudged to be unnecessary.

Very soon after the King's demise certain partisans began to insinuate that that event had been brought about by poison. A writer in the *Lancet-Clinic* gives the following statement of the way in which the name of the great Paré came to be brought into the matter:

"Writers more inspired by passion than by love of truth sought to accredit the death to poisoning. They went so far as to affirm that Ambroise Paré, the illustrious and irreproachable surgeon, was the principal factor in the monstrous crime. But it was not necessary to seek so far for an explanation when we read Dr. Potiquet's work, for we find that Francis II not only died poisoned but lived poisoned; he had septic fever, and the pus, finding no exit without, naturally went in. The death was only the epilogue of this suppuration, left to itself, and not let out. As if he feared a doubt might remain in some minds, Dr. Potiquet asked if any other diagnosis than that of *adenoid vegetations* can be found. Had it been from syphilis or fetid rhinitis these affections would have been revealed by symptoms that could not have passed unperceived. Could the malady have arisen from nasal polypi? A polypus of the nose is apt to project and be perceptible at the exterior, and is, besides, a rare thing in an infant. Adenoid vegetations, on the contrary, are more frequent in the first childhood than even later. It is, then, highly probable that at this distance we can affirm with certainty that Francis II died of meningo-encephalitis, consecutive to a suppurating inflammation of the left ear connected with adenoid vegetations. This diagnosis, disengaged from all contiguities, reposes on a rigorous scientfic basis. Moreover, in deficiency of the truth, it presents all the attributes of likelihood. We should, then, be easily dissatisfied were we not to agree with Dr. Potiquet."

An Epileptic Colony for New York.—The Legislature of New York has passed, and the Governor signed the bill establishing a colony for epileptics in that State. The colony is named after the late Oscar Craig, President for some years of the State Board of Charities. The bill provides for the purchase of a tract of 1,875 acres of beautiful land in the Genesee Valley, near Mount Morris, in Livingston County. This tract is all in one piece, well watered by brooks, and consisting of fine fields, woodland and orchards, and already provided with picturesquely-grouped buildings to the number of thirty-five. It has been a colony of the Christian Believers for twenty or thirty years, and is, therefore, perfectly adapted to its new use.

The law requires that all of the buildings put up should be on the village plan. A board of five managers is provided for, and these have already been appointed.

The Governor appointed as the Board of Managers: Dr. Frederick Peterson, of New York; Mrs. C. F. Wadsworth, of Geneseo; Geo. M. Shull, of Mount Morris; Dr. Chas. E. Jones, of Albany, and W. H. Cuddeback, of Buffalo.

An important provision in the bill is that the Managers may accept any bequests of persons interested in the welfare of epileptics, and it is believed that many charitable wealthy people will build cottages upon the splendid sites on the tract to bear their names and exist as lasting memorials to their desire to serve humanity in this wise.

A medical superintendent, steward, matron, pathologist, nurses, school-teachers, teachers of various industries and arts, and so on, are to be appointed as needed; but the colony will not be ready probably to receive patients before the autumn of 1895.

It is thought that the colony will ultimately number 1,500 to 2,000 members. As soon as possible the 600 epileptics in the county almshouses will be taken in charge. Later, private patients will be received at prices corresponding to the accommodations asked for. It is sure to become self-supporting in the course of time, and to grow into an industrial and agricultural village that will more than rival the similar and famous colony at Bielefield, Germany, upon which this is, to a certain extent, modeled.

At their organization, in Albany, on May 3, the Board of Managers made Dr. Frederick Peterson, of New York, President, and George M. Shull, of Mount Morris, N. Y., Secretary of the Board.

Washington Notes.

Miss Roberta M. West, Superintendent of the Emergency Hospital, formerly of the Philadelphia Hospital, has been appointed editor of the "American Text-book of Nursing."

The New Law in the District of Columbia requires druggists to sell whisky or other liquors only on physicians' prescriptions. Forgeries for obtaining drinks are becoming very frequent.

Columbia Medical College.—The commencement exercises of the Columbia Medical College followed by Faculty dinner took place May 3. General prize of $50 awarded to Gottlieb Werhle; clinical medicine to W. S. Washburn; clinical surgery, Miss C. Kiefe.

Association of Military Surgeons.—The fourth annual meeting of the Association of Military Surgeons of the United States was held May 3 (proceedings published in last week's Journal), and was a grand success. To Dr. George Henderson, of Washington, Chairman of Committee of Arrangements, and Dr. Henry A. Robbins, of Washington, Chairman Committee of Finance, is due this grand success. Transactions are to be printed and sent to members. The addresses by President Cleveland, Commissioner Ross and Dr. Senn were the features of the first day's session.

THE COXEY CAMP still appears to be exempt from the sanitary laws here in vogue. The manure is being turned up and removed and the underlying ground saturated therefrom is being covered with ashes. No disinfectives have been used so far. Neighboring vacant houses and the ground in the camp enclosure will not be much longer used for privy purposes as a permit has been taken out to make sewer connections. Alternations of rain and hot sun have the usual effect upon the health of the men, who wear the same clothing day and night and sleep on straw, wet and soiled, on the ground. There is no water in the enclosure and the supply, depending on the manual labor of the men, is naturally very limited. The bath is unknown. The burning and scalding of clothes together with incessant scratching of the body is very suggestive. The men are very quiet and well disposed, being of a very low intellectual capacity, and appear to be entirely satisfied with their lot (wet straw bedding, bad food and bad emanations). Speeches at night by the officers of the army serve to attract a large number of persons to the unhealthy enclosure and surroundings. There is also a constant throng of visitors during the day. The valuable horses have been removed to healthy quarters though the work horses still remain. The men were entirely wet by the severe rain last night and had to stand or walk about until this morning. The hardships from this pest hole can not be imagined, and ordinary charity should suggest their removal to some healthy place. Many of the men are sick and complaining, and there is every indication of an epidemic which may extend, through the visitors, to the entire city.

Philadelphia Notes.

DR. WM. H. PARISH has been appointed Medical Director of St. Agnes Hospital, in place of Dr. Wm. Keating recently deceased.

THE CITY BOARD OF HEALTH has begun a house-to-house inspection in order to prepare in time for a possible invasion of cholera next summer. Circulars of information regarding tuberculosis have been printed for free distribution, in which especial attention is directed to the infectious character of the disease, and the importance of destroying or disinfecting the sputa. Although there are only four or five cases of smallpox in the whole city, the Board has ordered all the school children to be vaccinated.

THE SEMI-ANNUAL CONVERSATIONAL MEETING of the Philadelphia Pathological Society was held on the 26th ult., when Dr. Simon Flexner, Associate in Pathology in Johns Hopkins University, delivered an address entitled: "An Experimental Study of the Nature and Action of certain so-called Tox-albumins," which was most interesting and instructive. After the meeting a reception was tendered Dr. Flexner at the University Club.

THE SECTION ON GENERAL SURGERY of the College of Physicians had a very interesting program at its meeting on the 11th inst. Dr. J. Wm. White read a paper on "Appendicitis," the surgical discussion being opened by Dr. Robert F. Weir, of New York, the medical side being opened by Dr. William Pepper. A general debate followed. Dr. Joseph Leidy reported two cases of appendicitis complicated by glycosuria, and Dr. Thomas G. Morton also reported a case of appendicitis with glycosuria. "Gunshot Wounds of the Brain" was presented by Dr. Jos. Hearn and two cases reported, illustrating treatment. Dr. Thomas G. Morton presented an improved aseptic ward carriage, for hospital use.

THE ATTENTION of the Board of Education having been directed to the possible spread of contagious diseases among the younger school children from the clay used in modeling in kindergarten work, the subject was referred to the Committee on Hygiene, of the Board. This Committee has just reported that they had been unable to discover an instance of the communication of skin diseases or infection in the schools of this district; that clay itself is antiseptic, and that with ordinary care the same clay can be used over and over again, almost indefinitely, without any risk of communicating infectious disease. They insist, however, as a matter of cleanliness, that children shall be forbidden to put the clay to their mouths or use spittle to moisten it; freshly boiled water only should be used for this purpose.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from May 5, 1894, to May 11, 1894.

Major William E. WATERS, Surgeon U. S. A., is granted leave of absence for two months, to take effect on or about July 1, 1894.

Capt. WILLIAM G. SPENCER, Asst. Surgeon, will report in person to the President of the Army Retiring Board at Omaha, Neb., at such time as he may designate, for examination by the Board.

First Lieut. JOHN S. KULP, Asst. Surgeon, is relieved from duty at Ft. Sheridan, Ill., and ordered to Ft. Spokane, Washington, for duty.

First Lieut. GEORGE M. WELLS, Asst. Surgeon, will proceed to Ft. Bowie, A. T., and report for temporary duty, not later than the 15th instant, during the absence on leave of Capt. JEFFERSON D. POINDEXTER, Asst. Surgeon.

Major JOSEPH R. GIBSON, Surgeon, is granted leave of absence for twenty days, to take effect on being relieved from duty at David's Island, N. Y.

First Lieut. BENJAMIN L. TEN EYCK, now on temporary duty at Ft. Clark, Texas, is assigned to duty at that post.

First Lieut. WILLIAM F. LIPPITT, JR., Asst. Surgeon, is relieved from duty at Camp Eagle Pass, Texas, and ordered to Ft. Leavenworth, Kan., for duty.

Captains GEORGE H. TORNEY and LOUIS W. CRAMPTON, Asst. Surgeons, will report in person to Col. CHARLES H. ALDEN, Asst. Surgeon-General, President of the examining board appointed to meet at the office of the Surgeon-General U. S. A., on Tuesday, May 8, 1894, at such time as they may be required by the board, for examination as to their fitness for promotion.

First Lieut. HARLAN E. MCVAY, Asst. Surgeon, par. 2, S. O. 86, A. G. O., April 12, 1894, assigning him to station at Angel Island, Cal., is revoked. He will be relieved from duty at Ft. Huachuca, Ariz., and will report for duty at the Presidio of San Francisco, Cal., relieving First Lieut. CHARLES WILLCOX, Asst. Surgeon, who, on being thus relieved, will report for duty at Angel Island, Cal.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending May 12, 1894.

Surgeon R. A. MARMION, hold himself to relieve Medical Inspector G. A. BRIGHT, on the U. S. S. "Newark."

Surgeon G. E. H. HARMON, to the U. S. S. "Monongahela," June 15, 1894.

Asst. Surgeon W. M. BARNUM, to the U. S. S. "Monongahela," June 1, 1894.

Surgeon J. M. STEELE, from the U. S. S. "St. Louis," and to League Island Navy Yard.

Surgeon H. G. BEYER, from Naval Academy, and to the "Bancroft."

P. A. Surgeon CLEMENT BIDDLE, from League Island Navy Yard, and to Marine Rendezvous, Philadelphia, Pa.

Asst. Surgeon J. F. LEYS, granted one month's leave, with permission to go abroad.

LETTERS RECEIVED.

(A) Andrews, B. J., Burlington, Vt.; American Druggist Pub. Co., New York City.

(B) Beman, W. W., Ann Arbor, Mich.; Boise, Eugene, Grand Rapids, Mich.; Bernd, H. & Co., St. Louis, Mo; Baker, Jas. B., Charlottesville, Va.; Bennett, T. J., Austin, Texas; Buechner, W. H., Youngstown, Ohio.

(C) Coffin, Lawrence, Brooklyn, N. Y.; Carhart, J. W., La Grange, Texas; Cutter, E. and J. A., New York City.

(E) Elmere, J. H., Osage City, Kan.; Eastman, Joseph, Indianapolis, Ind.

(G) Graham, D. W., Chicago, Ill.; Green, Mrs. C. R., Wonewoc, Wis.; Grafton, J. J., Chicago, Ill.; Gnild, Wm. H. & Co., Boston, Mass.

(H) Hummel, A. L., Philadelphia, Pa., 2; Hibberd, J. F., Richmond, Ind.; Herald-Despatch, Decatur, Ill.

(J) Jett, E. G., Fredericksburg, Va.; Juire, C. E. Lynnville, Iowa.

(K) Kirkbride, M. Frank, Spring Lake Beach, N. J.; Keating, J. William, Ann Arbor, Mich.; Kirkley, C. A., Toledo, Ohio; Kales, J. D., Chicago, Ill.

(L) Leaning, J. K., Cooperstown, N, Y.; Longfellow, P. C., Cincinnati, Ohio; Loeb, H. W., St. Louis, Mo.

(M) Millard, P. H., St. Paul, Minn.; Montgomery, E. E., Philadelphia, Pa.; McDonald, Dr., Grafton, N. Dak.; Mellier Drug Co., St. Louis, Mo.

(N) North American Phonograph Co., Chicago, Ill.; Nelson, D. E., Chattanooga, Tenn.

(P) Parsons, Frank S., Philadelphia, Pa.; Pettyjohn, E. S., Alma, Mich.; Pratt, John W., Boston, Mass.; Post-Graduate Medical School, New York City; Parkinson, J. H., Sacramento, Cal.

(R) Ryan, L. R., Galesburg, Ill.

(S) Sauer, F. N., Racine, Wis.; Smith, Mrs. Mary, New York City; Schenck, W. L., New Castle, Col.; Smith, Chas. A., Darlington, Wis.; Senn, Emanuel J., Chicago, Ill.; Shepard, Chas. H., Brooklyn, N. Y.; Souchon, Ed., New Orleans, La.; Schulze-Berge & Koechl, New York City.

(T) Trowbridge, L. S., Detroit, Mich.; The Toledo Medical Compend, Toledo, Ohio; The Sanitarium, Battle Creek, Mich.

(W) Woodbury, Frank, Philadelphia, Pa.; Woodburn, F. C., Indianapolis, Ind.

PAMPHLETS RECEIVED.

Bulletin Health Dept., Bureau Vital Statistics. Chicago.

Cholera. Its Prevention and Treatment. Typhoid Fever. Treatment. By Elmer Lee, A.M., M.D., Ph.D.

Zur Behandlung der Epilepsie. By Konrad Alt.

The New Orleans Sewerage System commenced with Inaugural Ceremonies. April 18, 1894.

Memoir of Alfred Ludlow Carroll, M.D.

The Therapeutic Uses of the Salts of Cesium and Rubidium. By T. W. Schaeffer, M.D.

Blennorrhea. By J. T. Jelks, M.D.

Etiology and Treatment of Pneumonia. By J. T. Jelks, M.D.

Some Effects of Blennorrhea in Women. By J. T. Jelks, M.D.

Address on Medical Education. By J. T. Jelks, M.D.

The Prevention of Venereal Diseases. By J. T. Jelks, M.D.

Report of a Case of Gunshot Wound of the Liver and Stomach. Laparotomy. Recovery. By J. T. Jelks, M.D.

Comparative Value of Mercury and the Iodids in Treatment of Syphilis. By J. T. Jelks, M.D.

Tumor of the Brain Simulating a Vascular Lesion. By J. T. Eskridge, M.D.

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ORIGINAL ARTICLES.

PNEUMONIC FEVER—ITS SYMPTOMATOLOGY.

BY EDWARD F. WELLS, M.D.
CHICAGO.

SKIN.

The skin, in ordinary cases, is dry and hot—often pungently so—until the exudative stage is completed, whereupon a gentle perspiration appears. When sweating occurs it is usually first noticeable upon the head and parts of the body which are warmly covered, and is most abundant at night.[1] In weakly and anemic patients the perspiration usually comes on earlier than in others.[2] The appearance of moderate sweating after the height of the fever has been attained is generally followed by considerable relief to some of the most distressing symptoms and is of good import.[3]

Sturges[4] has never been able to satisfy himself that sweating was either of good or evil augury. Dietl[5] was of the opinion that no relief was afforded by early perspiration or by those induced by sudorifics, but in this view I can not coincide.

It is true that some of the most severe cases pass on to recovery with no indication of moisture of the skin, and that most of the fatal cases have sweated profusely, yet I think that the almost universal experience of the profession confirms the opinion that moderate perspiration is welcomed by both patient and physician. Some cases are remarkable for the excessive diaphoresis attending them. This usually denotes a dangerous case, and may be in itself an element of peril.

A very common picture of the latter end of a fatal case is as follows: There is dyspnea, cough without expectoration, tracheal râles, profound prostration, a weak and rapid pulse, coldness of the surface and extremities, blueness of the nails and a cyanosed skin from which a cold and clammy sweat is literally streaming. Such perspirations were noticed in the Plymouth[6] and other epidemics.

Sudamina may appear[7] in connection with profuse sweating. They are scattered over the entire surface, but are most abundant on the trunk. They are not peculiar to pneumonic fever.[8]

Other exceptions, *e. g.*, erythema,[9] vibices,[10] petechia,[11] purpura,[12] pustules, abscesses,[13] erysipelas,[14] etc., have also been observed.[15] Rose spots resembling those of typhoid fever are occasionally encountered.[16]

In Andral's thirty-seventh case[17] there was "an eruption of small miliary, transparent vesicles, surmounting a very small red patch, which was succeeded in three days by desquamation. The eruption covered the chest and abdomen and appeared on the twelfth day." In the Cincinnati epidemic of 1874 an eruption resembling lichen—with papules of a dull red color but without pruritis—was observed in many cases.[18]

Petechia are harbingers of death.[19]

When pneumonic fever complicates any of the acute exanthemata, the cutaneous eruption sometimes disappears upon the advent of the pulmonary symptoms.[20]

An herpetic eruption frequently appears upon the lips and borders of the nostrils, and occasionally upon the chin, about the eyes,[21] ears, anus, genitalia[22] and other parts of the surface. The vesicles[23] may, rarely, be seen in the prodromal stage,[24] but usually in from two to five days after the beginning of the attack. It has been stated[25] that the eruption is invariably preceded by rigor, but this has not been my experience, although in one of my cases successive crops of vesicles followed recurrent chills. In the case referred to there was no indication of a malarial taint, although I believe herpes is oftener encountered in pneumonic patients who are the subjects of malarial infection. It has been supposed that herpes was due to a disordered state of the blood,[26] but I think it quite clear that the nervous system is primarily at fault.[27]

Herpes was present in 43 per cent. of Bleuler's[28] cases; in 40 per cent. of Drasch's[29] cases; in 13 per cent of Folkmann's[30] cases; in 43 per cent. of Geisler's[31] 421 cases; in 36 of 220 cases reported by Hawkins[31]x; in 20 per cent. of Hermann's[32] 40 cases; in 34 per cent. of Rall's[33] cases; in all of Kissel's[34] cases in the Oberlahnstein epidemic of 1847; in 13 per cent of Lebert's[35] cases; in 20 per cent. of Scheef's[36] 44 cases; in 18 per cent. of Speck's[37] 50 cases; in 29 per cent. of Schapira's[38] 173 cases; in 20 per cent. of Stort's[39] 286 cases; in 7 per cent. of Townsend's[40] cases; in 47 per cent. of Waller's[41] 81 cases; in 50 per cent. of Wunderlich's[42] 50 cases; in 50 per cent. of Ziemssen's[43] cases, and in 26 per cent. of my 498 cases.

The appearance of herpes is of good import,[44] although some consider it of little or no prognostic value.[45]

Herpes zoster occasionally occurs in connection with pneumonic fever.[46]

This occurred in three of my cases. One of these presents some unusual features: A farmer, aged 74, the subject of subacute rheumatism and chronic bronchitis, suffered for a long time, in 1881, with lassitude and widely distributed pains in the muscles, bones, joints, stomach, etc., terminating in an abundant eruption of herpetic vesicles at the base of the chest on the left side, with relief to all his other symptoms. The eruption disappeared after a few weeks, leaving whitish spots of the size of a split pea and resembling scars following a superficial burn. A year later there was a recurrence of the herpes zoster in the same locality, with similar but less severe prodromata. In this instance instead of obtaining relief upon the appearance of the eruption, he suffered an attack of pneumonic fever, locally affecting the base of the left lung. There was severe pain, elevation of temperature, an acceleration of pulse and respiration, cough, expectoration of characteristic sputa, etc. There was dullness on percussion and auscultation revealed fine crackling, tubular breathing and moist râles. There was also present considerable cardiac irritability due to a moderate amount of aortic stenosis. Recovery ensued in due time, but similar attacks occurred in December, 1883, and February and August, 1884.

Bedsores on the sacrum may form in this disease,[47] but they must be very rare. They appeared in none of my cases.

A male, aged 24 was admitted into the U. S. Marine-Hospital, Cincinnati, March 6, 1889, with well-marked pneumonic

fever, and died five days later. Patient stated that he had felt perfectly well until the day before admission, when he had a severe chill. This was followed by nausea, headache, pain in the chest and limbs and cough. The day preceding death a large bedsore developed over the sacrum. Necropsy revealed hepatization of entire right lung.

Furunculosis has been noticed in isolated cases[49] and as a feature of some epidemics.[50]

In pneumonic fever the odor exhaled by the patient presents nothing peculiar except in typhoid[51] or fatal cases. So long ago as 1850, Skoda[52] was wont to point out a peculiar odor—an *odor mortis*—as a sure precursor of death in his pnuemonic patients. If this smell of death is of the same character as that referred to by Isham[53] as having been frequently noticed by himself since 1863, it is of a moschiferous nature, very peculiar, and having been once experienced is ever afterwards easily recognizable.[54] An odor of this kind I have encountered in a number of cases.

The peculiar and disagreeable odor noticed by Copland[55] in disease of the suprarenal capsules, the ammoniacal odor noticed by Badgley[56] and Drake[57] as emanating from emigrant fever patients, and that observed by Thompson[58] in phthisical patients are probably of different natures.

The color of the skin varies with the stage and character of the disease and constitutional peculiarities of the patient. In the early stages, in the plethoric, well nourished and thin-skinned it will be brightly flushed;[59] while in the pale, cachectic, thick and dark-skinned, and at a later stage of the disease, it will be pale and sallow.[60] At a late stage of the disease in grave and fatal cases the color of the skin often resembles the pale-yellowishness of carcinoma.[61] An ashen[62] or leaden hue is of very bad augury, patients usually surviving its appearance only a few hours, or at most one or two days.

A flushing or circumscribed redness of one or both cheeks is a very marked and a very common symptom.[63] The redness is usually of a brighter hue than that of the dusky cheeks of typhoid fever, although this distinction may not apply to the very worst forms of pneumonic fever. It is not so bright as the hectic flush of phthisis. Its margins are generally—not always—more sharply defined than are those of the typhoidal duskiness. It was formerly supposed that this redness of the cheeks, as well as that of the hand sometimes noticed in this disease, was always of the same side as the affected lung.[64] This is, however, by no means always the case. In a considerable number of cases in which I particularly observed this symptom it was noted that the flushed cheek was usually the one most applied to the pillow, and I believe that local pressure often locates the redness. The flushing is often migratory,[65] passing from one cheek to the other, and often appearing on the chin. It usually comes on early and may even precede the other symptoms.

Jaccoud[66] in his own person experienced a local flush on one cheek—which happened to be on the side opposite the ensuing pneumonic inflammation—twenty-four hours before the initial chill and whilst in apparent health. He has noticed the same phenomenon in five other cases.

The redness of the cheeks is due to a localized dilatation of the capillaries.

Mann[67] noticed as a common symptom in the New England epidemic of 1815 "a remarkable pink-colored suffusion over the whole face, distinct from the usual febrile redness of the cheeks—the face becoming, at the same time, puffed and bloated." This appearance was most conspicuous in individuals of a light complexion, and in some instances it was also extended to the body.

During an attack of pneumonic fever, nutrition is interfered with and the measure of this is very graphically portrayed in the depression in the nails and constriction in the hairs grown during the febrile period. Owing to the short duration of this period the phenomena referred to are less marked than in typhoid fever, yet they are distinctly noticeable. The depression in the nails is most marked in those of the thumbs. It is from one-twentieth to one-tenth of an inch broad, with an abrupt declivity at the distal margin, but rising gradually out of the depression to the full thickness of the nail on the proximal side. It becomes visible in about a month after the beginning of the illness, is thrust gradually forward as the nail grows and disappears in about five months.[68] The constriction of the hairs can only be thoroughly appreciated by a microscopic examination.

NUTRITION.

From the inception of the disease to the close of the attack there is a constant preponderance of waste over repair, with, consequently a steady loss of weight until about the end of the first week of convalescence. The loss of weight ranges from three to twenty-four ounces daily, on an average, according to the age and size of the patient.[69] The ordinary weight is rapidly regained during convalescence and it not infrequently increases to much above the former standard of health.[70]

PROSTRATION.

The degree of prostration is variable but it is always considerable and often great. The patient is almost always confined to his bed, although in some cases he may only be compelled to keep his room, and in yet other and rarer cases he may even walk about. Although usually confined to his bed, yet the patient can as a rule, arise to evacuate his bowels and bladder, and can sit up in bed to eat and drink. In some exceptional cases, however, he may be so weak as to be unable to raise his hand from the bed or to speak aloud, while in other, and even graver cases, prostration may be so slight as to attract but little notice. The degree of prostration is usually a correct measure of the gravity of the general disease, but bears no relation to the extent and character of the local lesions.

As an illustration of the slight weakness which occasionally attends severe or even fatal cases I may instance the case of a farmer, aged 33, whom I saw March 28, 1877. He had already been ill nine days, and the entire left lung was consolidated. The pulse was 140, respirations 60, temperature 106, face dusky, lips and tongue dry, teeth covered with sordes, urine retained and skin streaming with perspiration. His mind was perfectly clear. He was evidently moribund, yet, upon my entering his chamber he arose from the chair upon which he was sitting and, without aid, walked across the room—showing no indication of any great muscular weakness or that he was to die within a few hours, as was his fate.

The same fact was very forcibly impressed upon my mind by the case of an Irish ditcher who came to my office in 1874, complaining of an oppression of the chest and an inability to continue his work because of shortness of breath. His entire right lung was hepatized, yet he was not confined to his bed, had come to town a distance of three miles and had even essayed to work. He recovered promptly.[71]

On the contrary, the muscular weakness may be of the most pronounced character, with but a mild fever and slight local affection.

In the winter of 1878 I was called to see a large and very powerful man, 30 years of age, sick with pneumonic fever. He was most profoundly prostrated and barely escaped with his life, yet the fever was insignificant and a most searching

examination revealed the presence of only a trifling consolidation at the base of the left lung.

With convalescence, prostration usually gives place to rapidly returning strength, although the patient usually remains weak and easily exhausted for a long time.[72]

Muscular tremor sometimes occurs irrespective of previous addiction of the patient to the excessive use of alcohol, and when it appears it should be viewed with grave apprehensions. Incontinence of feces and retention of urine are not infrequently associated with profound prostration.

Subsultus tendinum is occasionally,[73] but rarely,[74] met with in this disease. I have encountered it in three fatal cases.[75] In these it was not so clearly marked as is usual in typhoid fever, yet it was perfectly distinct.

PHYSIOGNOMY.

Pneumonic fever is sometimes quite clearly portrayed in the patient's features and attitude, although not so frequently or unequivocally as in typhoid fever, obstructive heart disease, chronic Bright's disease, etc. Nevertheless in a certain proportion of cases the aspect is sufficiently characteristic to be of diagnostic importance.[76]

The face is flushed,[77] the lips dry and parched and the expression fixed and anxious.[78] Respiration is quick, catching and restrained and the patient speaks in short and broken sentences.[79] At the first view the beholder is impressed with the fact that he is in the presence of one who is laboring under a very grave disease which affects every fiber of his body.

As convalescence approaches the expression becomes suddenly and wonderfully changed. The patient breathes easier, his complaints cease, his mind and actions are quickened, the anxious expression vanishes and becomes restful, he experiences a sensation of relief which is mirrored in his face, he rejoices in a new lease of life and congratulates himself upon his escape from a great and imminent danger.

The positions assumed by the patient while lying in bed are so various as to defy description. Very often he can not lie upon the affected side because of the pain produced by the pressure, yet he as often lies upon this side[80] in order that the dyspnea may be relieved by free expansion of the sound side. Again, and this is most common, he is unable to lie upon either side and must maintain the dorsal position. He often lies upon the back, inclined to one or the other side. Some evince a propensity for slipping toward the foot of the bed, and when replaced are soon found to be again slipping down. This symptom is of evil import. As first pointed out by Aretæus,[81] some patients can not assume the recumbent position,[82] and must be propped up in bed or sit in a chair.[83] When the malady has nearly pursued its course an ability to lie upon either side, or a realization of a slipping down in bed, or from off the pillow, is an indication—often one of the earliest—of improvement.

Children sometimes assume a "gun-hammer" position,[84] with the face turned from the light or persons about the couch,[85] and evince a strong desire to be let alone.

TERMINATIONS.

Pneumonic fever ends in either recovery, invalidism or death. When the issue is successful the acute manifestations of the disease are either suddenly or gradually ended—termination by *crisis* or by *lysis*.

CRISIS.

Ordinarily pneumonic fever terminates by crisis, as has been the observation of physicians from the earliest days of medicine.[86] Whether or no crisis will be the termination may depend upon a variety of circumstances, *e. g.*, the extent and nature of the local lesions, amount and consistence of the pleuritic effusion, the recuperative powers of the patient and the character of the epidemic influences. If the local morbid action does not spread after the first brunt of the attack, all portions of the exudate will be ready for softening and removal at about the same time and crisis will be the most probable termination.

The physical signs of beginning resolution and crisis do not always run parallel. The former generally first appear in from twenty-four to forty-eight hours after crisis.[87]

Of 192 cases analyzed by Grisolle,[88] crisis antedated the stethoscopic signs by one or several days in 72; in 92 they were coeval and in 26 the auscultatory changes first appeared.

The shorter the duration of the attack the more certain it is that crisis will be the termination. Crisis is rare in cases continuing longer than nine days[89] and is uncommon after seven days.

Crisis may be marked by the occurrence of peculiar phenomena, *e. g.*, profuse perspiration, diarrhea, copious discharge of urine, epistaxis, collapse, hepatic eruptions, profound and prolonged sleep, etc.[90] The duration of crisis varies from one to several hours, as shown in the following table:[91]

TABLE VII.—SHOWING DURATION OF CRISIS.

	Bleuler.	Thomas.	Kocher.	Author.
0 to 6 hours	25.3%	1.9%	14.2%	7.8%
6 to 12 "		13.7%	34.6%	28.2%
12 to 24 "	21.6%	37.2%	30.3%	35.0%
24 to 36 "	29.4%	21.5%	8.1%	18.5%
Over 36 "	23.3%	25.4%	12.2%	10.5%

LYSIS.

A gradual defervescence — termination by lysis, occurs oftener than is supposed by many. Termination by lysis occurred oftener than by crisis in the 1,080 cases analyzed by the Collective Investigating Committee of the British Medical Association.[92] It is the usual ending of cases with a duration of more than eight or nine days. With such a termination it is often difficult to say precisely, where disease ends and convalescence begins.

DURATION.

Pneumonic fever is a disease having a pretty definite duration. Dating the commencement of the attack from the initial chill or other marked first symptom, and the beginning of convalescence at the time of permanent defervescence, the duration is usually from five to ten days, with an average of about one week.

Chomel[93] gives the duration of the disease as from seven to twenty-one days. Pasadski[94] analyzed forty-eight cases with an average duration of 7.6 days. Barthez[95] states that the duration is from four to eight days, and Lebert[96] five to seven days. Huss[97] found the duration usually from five to nine—often seven—days, and Lépine[98] six to nine days. The average duration of Folkmann's[99] 125 cases was twenty-two days. Auenbrugger[100] says that it is generally four days, rarely earlier, but often later. Tanner[101] places it at ten days, as do also Andral,[102] Bouillaud,[103] Watson,[104] Gerhardt[105] and others. Doubleday,[106] in 252 cases, found the average duration 12.5 days. Of thirty-two cases analyzed by Scheef[107]

the average duration was 5.5 days. In ninety cases reported in the U. S. Naval Reports[108] the average was 17.8 days, and of 366 cases analyzed by Hermann[109] it was thirty-two days.[110] It was 7.8 days in thirty cases analyzed by Satterthwaite.[111] Swett[112] says the duration is about two weeks, counting to the time the patient is able to sit up most of the time. Schuyler[113] says that the duration is from five to nine days, but it may be much longer.[114] Dietl[115] places the duration as follows: In a very few cases, three days; in many, five or six days; in most, seven to nine days; and in a few eleven to thirteen days. Flint[116] makes it eleven days. A number of observers have given the exact duration of their cases as shown in the following table:

Table VIII.—Showing Duration of Pneumonic Fever.

	1	2	3	4	5	6	7	8	9	10	11	12	Total.	
Andral [117]	..	..	..	3	2	6	23	2	4	11	13	29	112	
Bleuler [118]	..	..	6	13	22	26	32	24	12	6	1	4	..	
Donbleday [119]	..	..	..	..	..	6	6	6	3	..	5	5	..	
Fox [120]	..	..	..	1	..	..	..	..	1	..	2	9	..	
Fricke [121]	..	1	6	13	22	26	24	23	18	5	5	8	162	
Gerhard [122]	..	..	..	..	..	..	..	2	..	..	4	12	..	
Kocher [123]	..	4	2	4	11	10	13	3	6	..	1	..	..	
Penkert [124]	1	3	3	9	3	8	11	2	2	..	..	..	42	
Rufz [125]	..	..	..	..	..	..	..	..	1	..	2	10	..	
Satterthwaite [126]	1	..	1	..	4	4	6	2	4	3	..	5	..	
Scheef [127]	..	2	4	5	9	3	2	5	..	..	..	1	..	
Schwarz [128]	..	6	44	69	144	127	212	122	88	41	37	38	933	
Thomas [129]	..	2	6	6	11	5	10	4	..	2	..	..	505	
Wltte [130]	3	8	72	20	86	38	102	31	37	11	11	13	672	
Wunderlich [131]	..	..	..	10	11	14	14	19	4	3	..	..	..	..
Townsend and Coolidge [132]	..	..	..	..	15	35	55	116	119	88	79	46	119	..
Ziemssen [133]	..	..	9	3	31	5	35	4	9	..	8	3	..	
Author	4	10	14	28	56	50	78	48	32	34	16	74	..	

Various circumstances may tend to materially contract or widen the bounds as above mentioned, yet the vast majority of cases will be found to fall within these limits. Thus, in certain states of the system, or from innocuity of the disease, or from the action of appropriate remedies, convalescence may begin at any time.[134]

Very rapid recoveries are denied by some,[135] but I am not only prepared to admit their occurrence, but several such are recorded in my case book.

On the contrary, unfavorable conditions of the patient, severity of the morbid processes or various complications may cause the attack to be protracted far beyond the extreme limits mentioned. Thus, cases are by no means rare in which convalescence is delayed for several weeks. The duration is increased if the patient is cachectic, dissipated, aged or of the female sex.[136] Also in apical and double cases.[137]

It has been thought that convalescence began oftener on odd than on even days, but I know of no facts to support the view.[138]

RESOLUTION.

Resolution of the local inflammation usually begins immediately, or soon after the decline of the fever, and proceeds with more or less rapidity until the exudate is completely removed. This may proceed with such rapidity that the physical signs may disappear in a few hours[139] or it may be greatly retarded.

In twenty-four cases analyzed by Stokes[140] the physical signs disappeared in one week in nine; in from one to two weeks in nine; in from two to three weeks in five, and in from three to four weeks in one. In twenty-six cases reported by Fox[141] they disappeared in two days in one; two to three days in three; on the fourth, fifth, and sixth days in one each; on the seventh day in three; on the ninth day in one; in from ten to fifteen days in nine; in from twenty to twenty-five days in five, and in from twenty-five to thirty days in one. In 150 cases analyzed by Bleuler[142] they disappeared on the first day in five; on the second day in two; on the third day in four; on the fourth day in two; on the fifth day in twenty-one; on the sixth day in thirty; on the seventh day in thirteen; on the eighth day in eleven; on the ninth day in five; in from ten to fifteen days in nineteen; in from fifteen to twenty days in six, and beyond twenty days in seven. In my own cases it was practicable to obtain information on the point in only 151 cases, and in these the physical signs were no longer recognizable after the first day in two; second day in two; third day in five; fourth day in nineteen; fifth day in twenty-four; sixth day in thirty-one; seventh day in fourteen; eighth day in ten; ninth day in seven; tenth to fifteenth day in sixteen; fifteenth to twentieth day in six, and after the twentieth day in seventeen.

In a certain small proportion of cases the local morbid action is of a fleeting nature and the inflammatory products are removed with remarkable rapidity. In this evanescent form the disease is not infrequently aborted[143]—the local inflammation being checked in any part of its course, with a precipitous disappearance of the physical signs. This may be due to the impress made upon the local morbid action or upon the general constitution by the rheumatic, gouty, scorbutic, typhus, typhoid or other poisons circulating in the blood, or by epidemic or medicinal influence.

In the epidemic of typhus fever which raged in Ireland in 1854–55, pulmonary complications were very common. The symptoms and signs of the first stage of pneumonic inflammation were suddenly developed, continued but a short time and subsided again with singular rapidity. Silently, rapidly and spontaneously was the disease developed, and equally as silently, rapidly and spontaneously did it disappear—flitting like a shadow across the path of the original disease, and leaving as little evidence of its presence.[144]

In some instances there may be a rapid and complete removal of the inflammation in a portion of the affected lung, while in the remainder it pursues an ordinary course.

A farmer, aged 37, twenty-two days ill with typhoid fever, was taken, Nov. 30, 1880, with pneumonic engorgement of the entire right lung. He had a frequent cough, moderate pain and distressing dyspnea. There was comparative dullness over the entire right side of the chest, and in this region the crepitant râle was everywhere heard. There was, in addition, active delirium, a dry and furred tongue, sordes, tympanitis, iliac gurgling, ochre diarrhea, subsultus tendinum, and a moist skin. He passed his urine in bed and was continually picking at the bed clothes. His pulse was 100, respirations 30 and temperature 101.5 degrees. After thirty hours the respiratory murmur and percussion note over the upper and lower lobes of the affected lung were almost, if not quite normal, while the middle lobe was completely hepatized—with dullness and tubular breathing. He expectorated characteristic pneumonic sputæ. Recovery ensued.[145]

This case illustrates the occurrence in the deeper organs of the body of conditions which are frequently seen upon the exterior.

Thus a patient presents himself with all the signs and symptoms of acute inflammation of the integument and subcutaneous areolar tissue of the entire fore-arm. There is pain, heat, redness, swelling and disordered function. On the morrow there is a decided change. In the central parts all the symptoms are present in increased severity and an elevated spot indicates the place where the abscess will point, while elsewhere the symptoms have almost disappeared. On the next day the abscess will have pointed, and will be surrounded by an areola of inflammation, while all the other parts have regained their normal condition. Such pictures have, no doubt, been often seen by every practitioner of medicine, but only too generally passed by as being a morbid process of too commonplace a nature to be worthy of a second thought. To the thoughtful student of nature, however, such phenomena illustrate in a graphic manner one of the most interesting and important problems in pathology with which the physician has to deal.

If inflammatory action may be aborted and inflammatory effusions be dispersed, as if by magic, in the superficial parts of the body, is it not reasonable to conclude that the same may take place in the deeper seated structures as well?

The "wandering" form of the disease, in which the morbid

action leaps from point to point is a curious feature which may be mentioned in this connection.[146]

Pneumonic fever as it is sometimes associated with rheumatism[147] is often of a very fugitive nature.

Trousseau[148] records two interesting cases of this form of the disease. The first was a young man who was admitted into the Hotel Dieu with all the symptoms of pneumonic fever. By the following day all traces of the malady had disappeared and there was developed rheumatism of the left foot. The second was that of a young woman with fever, redness and swelling of the left leg and foot, and severe pain in the entire left side of the body. The left side of the chest was especially painful, but no abnormal respiratory sounds were audible. During the night cough came on, and on the following day the signs of pneumonic inflammation were manifest and two or three pneumonic sputæ were expelled. On the next day the pulmonary symptoms had vanished.[149]

One of my cases is as follows: A girl, 6 years of age, was taken with rheumatism, locally affecting in turn almost every organ of the body. After the first fortnight, hemorrhage from various organs, as *e.g.*, the nose, mouth, eyes, stomach, intestines, kidneys, vagina, etc., and purpuric patches in the skin, together with spongy gums, gave the case a scorbutic character. On the eighth day pneumonic inflammation of the right lung set in, with the most distressing symptoms, which disappeared completely in thirty-six hours. Recovery eventually ensued.

In some cases convalescence is protracted over a prolonged period, because of delayed resolution of the pneumonic exudate.[150] This event is neither so rare nor so frequent as has been supposed by many writers. These cases vary infinitely in their severity, course and termination. In the mildest cases the acute symptoms subside almost entirely at the usual time, but, from some peculiarity of the exudation material, or of the local circulatory or absorbent systems, or from some unfavorable state of the general system, the products of inflammation remain for a longer or shorter time quiescent, to be finally removed in the ordinary manner. In other cases absorption begins promptly and proceeds continuously but because of the above conditions the process is very slow and an unusual length of time is required before the lung regains its normal state. The duration of these cases varies from a few weeks to several years.[151] They terminate in complete and permanent recovery.

A large, fleshy woman, aged 54, was taken Dec. 20, 1880, with an eighth attack of pneumonic fever. There was a severe rigor at night, followed by accelerated respiration, considerable dyspnea, incessant coughing, dark expectoration, fever, sleeplessness, delirium, diarrhea and involuntary passage of feces and urine, together with an assemblage of other symptoms usually recognized as indicating a very severe case. The local manifestations began at the base of the right lung and gradually advanced upward until the entire lung was involved. After the ninth day the acute symptoms gradually declined, yet frequent breathing, dyspnea upon slightest exertion, cough, scanty expectoration and weakness persisted. Resolution began promptly in the upper and middle lobes and was here soon completed, but at the base the evidence of consolidation remained unaltered for six weeks, after which the exudation was slowly, but gradually and completely removed in the course of a month. The entire duration of the attack was three months, with recovery. During the entire course of the disease, subsequent to the decline of the acute symptoms, the temperature was normal, and, after the first three weeks the appetite was good and the patient progressively gained in strength. The pulse, however, was always about 90, and would leap to 120 upon slight exertion or excitement. The respirations usually numbered 30, but ascending a flight of stairs would cause them to be 45 or 50, with marked oppression. Cough would appear upon awakening from sleep, after eating, deep breathing, changing position or exertion, was severe and convulsive and was accompanied by slight expectoration.

Even in childhood, resolution may be long delayed.

A little girl, aged 6, was taken Dec. 1, 1886, with pneumonic fever, locally affecting the lower two-thirds of the right lung. There was fever, pain referred to the epigastrium, cough, earache, epistaxis, restlessness, delirium, etc. After a week she improved somewhat, but three weeks later there was still slight fever, prostration, a troublesome cough, etc. The right side was almost motionless during respiration, with dullness as high as the third rib, bronchophony, tubular breathing and moist râles. She gradually improved but resolution was not completed until in March, 1887.

In the severer cases the picture must be cast quite differently. In these, as the stage approaches in which convalescence is usually declared, a decided improvement may take place, but the fever never entirely ceases. The cough continues and the pulse and respiration remain accelerated. The patient has no appetite, his digestion is impaired and he becomes progressively more and more cachectic, emaciated and prostrated. The fever takes on a hectic form, with diarrhea, night-sweats and perhaps dropsy, and the patient, worn out by the persistent cough, copious expectoration and terrible oppression, after a gradual decline, dies, or rarely, after passing fearfully near the brink of the grave, a change for the better takes place and he lapses into a condition of chronic invalidism, or astonishes every one by recovering.

A young man aged 21, was taken March 20, 1880, with pneumonic fever, locally affecting the base of the right lung. The case ran an ordinary, although severe course until the fourth day when the entire left lung became involved. On the tenth day he was much improved, almost free from fever, but his cough and expectoration continued. Subsequently he quit his bed and walked about, but continued weak and the pneumonic deposit was not absorbed. He emaciated so rapidly that his weight declined in four months from 160 to 115 pounds. In August he had complete obstruction of the bowels for twelve days, followed by alternating attacks of diarrhea and constipation, with a decline in weight to 108 pounds, but by December he weighed 120 pounds. During the following summer and winter his cough continued, the respirations increased to 60 or 80 per minute and he gradually lost weight, strength and hope, and only awaited death. There was extraordinary contraction of the thoracic walls, causing considerable lengthening of the chest. Over its greatest extent there was dullness, tubular breathing, bronchophony and increased vocal fremitus. At various places the resonance was tympanitic and the respiratory sounds loud and harsh. For three weeks before death, which occurred March 4, 1882, he suffered terribly from want of sleep, not being able to obtain more than a very few minutes at a time, when he would be awakened with a start and the most distressing dyspnea. At the autopsy both lungs were found very much contracted and universally adherent to the chest walls. In both apices the air vesicles and bronchi were dilated, while in the lower parts the lung tissue was light colored, hard, condensed and gristly, bearing but slight resemblance to healthy pulmonary tissue.[152]

A seaman, aged 40, exposed to cold winds while overheated, was attacked with pneumonic fever, locally affecting the whole of the right lung. On the tenth day a violent and uncontrollable diarrhea set in which continued for ten days. During this time there was a profuse perspiration which was greasy to the touch and offensive to the smell. The pulse was weak, temperature about 102 degrees, respirations 40 and noisy, tongue dry and coated with a thick dark fur and the teeth covered with sordes. The cough was frequent and there was expectorated without much effort an abundance of thick, dark and tenacious matter. He became very weak and the muscles were tremulous. After eight weeks the lung, which had changed in condition but little, began to gradually clear up, the cough moderated, the expectoration diminished, the hectic disappeared and he finally completely recovered.[153]

Occasionally this tendency toward a protracted course is a feature of entire epidemics. Not only this, but the type of the disease may be peculiar, both clinically and anatomically.[154]

Subsequent attacks of pneumonic fever may occur in a patient suffering from a cirrhotic condition of the lung due to a former attack.[155]

Bouillaud[158] relates a case in which a patient, after a second attack of pneumonic fever, remained dyspneaic, with dullness on percussion, until he was again attacked five years later. During the last attack there was much dyspnea, the respirations were 52, the alæ nasi dilated with each inspiration and there was a jerking resonance of the voice.

If the apex is the portion of lung affected it is often difficult, clinically, with an imperfect history of the course previously pursued by the malady, to decide whether the case be one of chronic pneumonic consolidation or phthisis, into which many of these cases eventuate.[157]

With the normal progress of resolution, cough and expectoration gradually decline and cease with the removal of the offending materials from the lungs.[158] When the patient is at rest respiratiou is easy and regular and but slightly if at all accelerated; but if active exercise is attempted there is noticeable oppression and a hurried, panting breathing. This gradually diminishes until it quite disappears.[159] The appetite gradually returns and all the digestive functions are properly performed, and with a preponderance of assimilation over waste, the heart rapidly regains its tone.

At the beginning of convalescence the patient is very weak, although as he lies in bed in moderate comfort he does not realize or appreciate the fact. It is only when he attempts any unusual exertion that he realizes the extent of his weakness. After a few days, however, his strength rapidly returns and in the majority of instances he will have fully regained his lost ground in from a fortnight to a month.

The patient sleeps much and his repose is quiet, restful and exhilarating. His mind is at ease and after a few days becomes remarkably clear and penetrating. He is not given to day dreaming or aërial castle building, but he perceives new possibilities all along the old lines of thought and effort, and, with complete recovery he proposes to again wage battle upon his chosen field of labor with renewed courage, energy and vigor.

While an extension of the local inflammation in pneumonic fever is of comparatively frequent occurrence a relapse[160]—recurrence of acute local and general symptoms during convalescence is a rare event.

Baginsky[161] never saw a case of relapse in this malady, although in two patients second attacks occurred very soon after convalescence was completed. Bourman[162] has reported a single case. Briquet[163] saw relapses in one-fifth of his cases. Binz[164] reports one case. Clark[165] and Carroll[166] each report cases as does also Edbohls.[167] Fismer[168] saw one case. Flint[169] never saw a case, while Fox[170] and Grimshaw[171] do not consider them very infrequent. Grisolle[172] met with relapses in 35 per cent. of his cases and Jacobi[173] considers them frequent in children. Kœttnitz[174] saw one case. Lépine,[175] Monthius,[170] Neumann[177] and Oulmont[178] report cases while Orton[179] never saw one and does not believe in their occurrence. Schuyler[180] says they are rare. Strong[181] reports a case. Walshe[182] thinks relapses rare, while Ziemssen[183] considers them not infrequent.[184] Relapses occurred in five —1 per cent.—of my cases.[185]

1 See also Chomel, Pneumonie, Leipzig, 1841, S. 138.
2 It not infrequently appears in the first stage. See also Huss, Lungenentzündüng, Leipzig, 1861, S. 42;—et al.
3 See also Andral, Med. Clin., Phila., 1843, Vol. ii, p. 130-198.
4 Nat. Hist. Pneumonia, London, 1876, p. 52.
5 Lungenentzündung, Wien, 1849, S. 33.
6 Huxham, Epidem. Diseases, London, 1748, Vol. ii, p. 59.
7 See also Fox, Reynolds' Syst. Med. Phila., 1880, Vol. ii, p. 175;—Louis, Fiev. Typh., T. ii, p.111.
8 See Myrtle, London Lancet, 1887, Vol. ii, p. 1107.
9 See Chomel, op. cit., S. 167;—Fox, op. cit., p. 181;—Huss, op. cit.;—Rilliet et Barthez, Mal. des Eofants, Paria, 1838, p. 576;—Stortz, Inaug. Dissert., Würzb., 1884, S. 60;—et al. It was initial in the case reported by Arnaud, Rev. d. Mal. de la Enfant. 1893.
10 Murphy, Cincinnati Lancet and Observer, Nov. 1862, p. 663.
11 Huxham, op. cit., p. 59;—Holfelder, Inaug. Dissert.;—Heiss, Inaug. Dissert., München, 1857, S. 17;—Tüb., 1884, S. 5;—et al.
12 Lepecq de la Cloture, Mal. Epidem., Paris, 1776.
13 Chomel, op. cit., S. 249.
14 Carroll, Cincinnati Lancet and Observer, Aug. 1863, p. 473;—Frank, De Cur. Hom. Morb., 1792;—Grisolle, Traité de la Pneumonie, Paria, 1864;—et al.
15 See Baginsky, Pneumonie u. Pleuritia, Würzb., 1880, S. 100;—Heiss, Inaug. Diss., München, 1857, S. 17;—Huebner, Arch. f. k. Med., Bd. xxxi.
16 Chomel, op. cit., S. 139;—Louis, Fiev. Typhoide;—et al.
17 Op. cit., p. 162.
18 Davis, Cincinnati Lancet and Clinic, June 7, 1879, p. 444.
19 See Huxham, op. cit., p. 59;—Murphy, op. cit., p. 663;—et al.
20 Andral, op. cit., p. 183.
21 Battermann, Inaug. Dissert., Griefswald, 1882, S. 22.
22 Oftenest after recent genital irritation, or after coitiou, menstruation, etc.
23 The contents of the vesicles may be sanguinolent, as in the case reported by Holfelder, Inaug. Disaert., Tübingen, 1884, S. 6.
24 See also Waller, Inaug. Disa., Erlangen, 1877, S. 4.
25 See Ohio Med. Recorder, Jan. 1880, p. 365.
26 Schuyler, N. Y. Med. Jour., Sept. 1, 1883, p. 234.
27 See also Gerhardt, Volkmann's Vorträge, Nr. 91, S. 724.
28 Inaug. Disa., Zurich, 1865.
29 Caustatt's Jahresb, 1860, Bd. iii, S. 207.
30 Inaug. Dissert., Erlangen, 1847, S. 17.
31 Arch. d. Heilkunde, 1861, S. 115.
31x Lancet, April 1, 1893, p. 726.
32 Lungenentzündung, München, 1880, S. 36.
33 Pneumonie, Eulenberg, 1852, S. 159.
34 Klinik d. Brustkrankheiten, Tübingen, Bd. i.
35 Inaug. Diss., Erlangen, 1887, S. 33.
36 Inaug. Disa., Tübingen, 1882, S. 38.
37 Inaug. Diss., Marburg, 1870, S. 30.
38 Inaug. Diss.' Würzb., 1877.
39 Inaug. Diss., Würzb., 1884, S. 58.
40 Jour. Am. Med. Assoc., Dec. 1, 1888, p. 789.
41 Op. cit., S. 4.
42 Inaug. Diss., Tüb., 1858, S. 29.
43 Pleuritis u. Pneumonie, Berlin, 1862;—Boyd, Jour. Am. Med. Asso., Nov. 16, 1889;—Batterman, Inaug. Dissert., Griefswald, 1882, S. 17;—Eulenberg, Berliner Klin. Wochenshr Nr. 18, 1867;—Gerhardt, Jenaisch, Zeitschr, Bd. ii, S. 349;—Hebra, Virchow, Spec. Path. u. Therap.
44 Beddoe, London Lancet, 1875;—Drasche, Canstatt'a Jahresb., 1860, Bd. III, S. 207;—Fox, op. cit., p. 176;—Geisler, op. cit.;—Greisinger, Arch. d. Heilk., 1860, Bd. 1;—Lépine, Pneumonie, Wien., 1883, S. 165;—Moore, N. Y., Med. Rec., Sept. 10, 1887, p. 314;—Pause, Luugenentzünd., Leipzig, 1861, S. 13;—Raven, London Prac., Vol. xxxi, p. 39;—See, quoted by Lépine, op. cit., S. 165;—Thomas, Memorabilien, 1874, Nr. 9;—Waller, op. cit., S. 4;—It is considered of bad import by Hardy, Gaz. des hôp., June, 1878.
45 Folkmann, Inaug. Diss., Erlangeu, 1847, S. 17;—Schapira, op. cit. S. 30.
46 See Jackson, London Lancet, 1887, Vol. 2, p. 1222;—Kaposi, Wiener Med. Presse, Nov. 14, 1875;—Kœttnitz, Inaug. Dissert., Halle, 1882, S. 230.
47 Andral, op. cit., p. 142;—Gibbon, London Lancet, N. Y., 1856, Vol. II, p. 521;—Homburger, Inaug. Dissert., Strassb., 1879, S. 39;—U. S. Marine Hosp. Rpts., 1889, p. 371;—Wilbrandt, Inaug. Diss., Rostock, 1862, S. 29.
48 U. S. Marine Hospt. Rpts., 1889, S. 371.
49 See Holt, N. Y. Med. Rec., Feb. 21, 1885, p. 202.
50 Chomel, op. cit., S. 249;—Haller, Opusc. Path., Lausaannæ, 1755;—et al.
51 La Roche, Pneumonie, Phila., 1854, p. 370.
52 Quoted by Althaus, London Lancet, N. Y., 1881, Vol. ii, p. 102.
53 Cincinnati Lancet and Clinic, Sept. 4. 1875, and Am. Jour. Med. Sci., April, 1881, p. 430.
54 See also Graves and Stokes, Dublin Hosp. Rpts., Vol. iv, and Am. Jour. Med. Sci., Vol. i, p. 195. Hodgkin noticed an odor between a vinous and liiaceous before death.
55 Med. Dic. N. Y., 1855, Vol. iii, p. 1571.
56 Brit. Am. Jour. Vol. iv, p. 88.
57 Dis. Int. Valley of N. A., Phila., 1854, Vol. ii, p. 438.
58 London Lancet, N. Y., 1858, Vol. I, p. 185.
59 See Aretæus, Caus. et Sig. Morb.;—Cœlius Aurelianus, Morb. Acut. et Chron;—Fox, op. cit., p. 176;—Rilliet et Barthez, Mal. des Eufants, Paris, 1838, T. I, p. 522;—et al.
60 See Lepecq de la Cloture, op. cit.;—et al.
61 Heiss, Inaug Diss., Müuchen, 1857, S. 17;—Chomel, op. cit., S. 144;—Gerhardt, Auscult. u. Percusa., Tüb., 1866, S. 10.
62 Baginsky, Pneumonie u. Pleuritis, Würzb., 1880, S. 100.
63 Even so late as 1859 Mayer—Jahrb. f. Kinderheilk., 1859, S. 30, asaerted that the redness of the cheek indicated the side affected.
64 See Chomel, op. cit., S. 145;—Copland, op. cit., Vol. ii, p. 880;—Guhler, L'Union méd., 1857;—Lépine, op. cit., S. 77;—et al.
65 See also Rilliet et Barthez, op. cit., p. 575;—Tanner, Clin. Med., Phila., 1871, p. 24;—Ziemasen, Pleuritis und Pneumonie, Berlin, 1862, S. 227;—et al.
66 Pathol. Intern. Paris, 1870, T. i, p. 28.
67 Medical Sketches, Dedham, 1816, p. 308.
68 See Wilks, London Lancet, Jan. 2, 1869, on this phenomenon in another connection.
69 Herahey—Phila. Med. News, July 18, 1891, p. 65, reports the case of a man who lost 23½ pounds in weight in ten daya.
70 For further information consult Baginsky, Pneumonie u. Pleuritis, Würzb., 1880, S. 49;—Fox, Reynold's Syst. Med., Phila., 1880, Vol. ii, p. 183;—Lépine, Pneumonie, Wien, 1883, S. 75;—Reissell u. Huppert, Arch. d. Heilk., 1869;—Wachamuth, ibid., 1865, S. 236;—Ziemsaen, Jour. Am. Med. Assoc., Aug. 28, 1887, p. 258;—et al.
71 Dakeman—N. Y. Med. Rec., Aug. 3, 1889, p. 122, reports the case of a young man who worked at street paving during the first six days of an attack of pneumonic fever and did not subsequently take his bed. He recovered, although the entire right lung was consolidated.
72 For further information see Fox, op. cit., p. 163;—Kühn, Arch. f. k. Med., Bd. xvi;—Juergensen, London Lancet, 1884, Vol. ii, p. 27.
73 Fox, op. cit., p. 164.
74 Chomel, op. cit., S. 149.
75 See also U. S. Marine-Hospt. Rpts., 1887, p. 249.
76 Gerhard, Dis. Chest., Phila., 1860, p. 202, "diagnosed casea in the wards of the hospital by their physiognomy."
77 Sometimes dusky or earthy. See Fox, op. cit., p. 163.
78 May be dull and heavy. Fox, op. cit., p. 163, or distressed and appealing.
79 He is not apt to volunteer information, and replies to questions by direct answers and in the fewest possible words.

[80] Cœlius Aurelianus, op. cit;—Heiss, op. cit., S. 11;—Laennec, Dis. Chest, N. Y., 1830, p. 220;—Schuyler, N. Y. Med. Jour., Oct. 13, 1893, p. 401.
[81] Op. cit.
[82] Copland, Med. Dic., Vol. iii, p. 1059.
[83] Generally under these circumstances there are extensive pleuritic or pericardial effusions, valvular heart disease or cardiac thrombosis. See Sturges, Pneumonia, London, 1876, p. 82.
[84] Starr, Trans. Int. Med. Cong., Wash., 1887;—Jenner, ibid.
[85] Baginsky, op. cit., S. 17.
[86] Auenbrugger, Inventum Novum, etc., Vien., 1761, sec. 22;—Baglivi, Prax. Med., Luyd., 1699;—Boerbaave, Aphorism, Luyd., 1721;—Chomel, Pneumonie, Leipzig, 1841, S. 157;—Cleghorn, Epidem. Dis. Minorica, London, 1762;—De Haen, Rat. Med., Vindob., 1757;—Doubleday, N. Y. Med. Rec., March 28, 1885, p. 343;—Galen, Opera Omnia, Venet., 1541;—Hippocrates, Opera Omnia, Venet., 1737;—Hofmann, Opera, 1759;—Huss, Lungenentzündung, Leipzig, 1861, S. 27;—Huxham, Epidem. Diseases, London, 1745;—Lebert, Berliner k. Wochenschr., Sept. 4, 1871;—Raveu, Practitioner, Vol. xxxi, p. 32;—Stahl, Obsv. Clin. Prac., Leipzig, 1735;—Sydenham, Opera Omnia, Amstl, 1683;—et al.
[87] Reynolds' Syst. Med., Phila., 1880, Vol. ii, p. 182.
[88] Traité de la Pneumonie, Paris, 1864, p. 300 et p. 311.
[89] See Sturges, Pneumonia, London, 1876, p. 53.
[90] See Cleghorn, op. cit.;—Grisolle, op. cit., p. 234;—Martin, Phila. Med. World, 1888, p. 65;—Scheef, Inaug. Diss., Tüb., S. 32;—Traube, Krisen u. kritische Tagen;—et al.
[91] Compiled from the statistics of Blenler, Inaug. Diss., Zürich, 1865;—Kocher, Pneumonie, u. s. w., Würzb., 1866, S. 31;—Thomas, Arch. d. Heilkunde, 1865, and the author.
[92] Collective Investigation Record, Vol. iii, London, 1884.
[93] Pneumonie, Leipzig, 1841, S. 153.
[94] Ieshenedjelnaja klin., Gaz. Nr. 30, 1885.
[95] Cincinnati Lancet and Observer, November, 1862, p. 669.
[96] Berliner k. Wochenschr., Sept. 4, 1871.
[97] Lungenentzündung, Leipzig, 1861, S. 28.
[98] Pneumonie, Wien., 1883, S. 39.
[99] Inaug. Diss., Erlangen, 1847, S. 12.
[100] Inventum Novum, Vien., 1761, sec. 62.
[101] Clin. Med., Phila., 1871, p. 246.
[102] Med. Clin., Phila., 1843, Vol. ii, p. 200.
[103] Dic. Méd. Prat., Paris.
[104] Prac. Physic, Phila., 1845, p. 583.
[105] Diseases of the Chest, Phila., 1860, p. 203.
[106] New York Med. Rec., March 28, 1885, p. 343.
[107] Inaug. Diss., Tübingen, 1882, S. 40.
[108] For 1881 and 1882, Washington.
[109] Lungenentzündung, München, 1880, S. 22.
[110] Most probably duration of hospital residence.
[111] Phila. Med. News, Jan. 5, 1889, p. 6.
[112] Diseases of the Chest, N. Y., 1854, p. 85.
[113] N. Y. Med. Jour., May 14, 1887, p. 542.
[114] See also N. Y. Med. Jour., Aug. 25, 1883, p. 206.
[115] Lungenentzündung, Wien., 1849, S. 71. See also edit., 1853, S. 20.
[116] N. Y. Med. Rec., July 14, 1877.
[117] Clin. Med., Vol. i, p. 200.
[118] Inaug. Diss., Zürich, 1865.
[119] Op. cit., p. 343.
[120] Reynolds' Syst. Med., Vol. ii, p. 175.
[121] Inaug. Dissert., Gött., 1886, S. 21.
[122] Am. Jour. Med. Sci., Vol. xlv, p. 328.
[123] Op. cit.
[124] Berliner k. Wochenschr., Oct. 3 and 10, 1880.
[125] Am. Jour. Med. Sci., Vol. xlv, p. 328.
[126] Op. cit., p. 6.
[127] Op. cit., S. 40.
[128] Inaug Dissert., Erlangen, 1879, S. 4.
[129] Op. cit.
[130] Inaug. Dissert., Berlin, 1887, S. 41.
[131] Trans. Am. Climat. Assoc., 1889.
[132] Spec. Path. u. Therap., Bd. ii, S. 334.
[133] Pleuritis u Pneumonie, Berlin, 1862, S. 174.
[134] Cowan, Louis on Phthisis, Boston, 1836, p. xlij;—Juergensen, op. cit., S. 36.
[135] Dietl, op. cit.;—Peacock, Brit. Med. Jour., Nov. 19, 1881;—Waters, Dis. Chest, London.
[136] Fox, op. cit., p. 205;—Huss, op. cit., S. 121.
[137] Barthez, op. cit., p. 669;—Collec. Inv. Rec., Vol. ii;—Ziemssen, op. cit., S. 177.
[138] Traube, krisen u. kritische Tagen;—et al.
[139] See Fox, Reynold's Syst. Med., Phila., 1880, Vol. ii, p. 182.
[140] Diseases of the Chest, Dublin.
[141] Op. cit., p. 182.
[142] Inaug. Diss., Zürich, 1865.
[143] Baginsky, Pneumonie, Würzb., 1880, S. 17;—Bernheim, Rev. méd. de l'Est., 1877;—Black, London Lancet, N. Y., 1883, Vol. ii, p. 458;—Charcot, Comp. Rend. de la Soc. des Hôp., 1864;—Copland, Med. Dic., N. Y., 1855, Vol. ii, p. 882;—Counsell, Lond. Lancet, 1889, Vol. i, p. 730;—Drake, Dis. Int. Valley N. A., Phil., 1854, p. 858;—Eberle, Prac. Med., Phila., 1831, Vol. ii, p. 293;—Flint, Prac. Med. Phila., 1868, p. 164;—Geuder, Inaug. Dissert., Erlangen, 1886, S. 11;—Holt, N.Y., Med. Rec., Feb., 14, 1885, p. 174;—Kœttnitz, Inaug. Diasert., Halle, 1882, S. 32;—Juergensen, Ziemssen's Handb., Bd. v, S. 144;—Laennec, Dis. Chest., N. Y., 1830;—Lépiné, Pneumonie, Wein, 1883, S. 80; Leube, Thüringer Correspondzb., 1877, und Berliner k. Wochenschr., 1877, S. 299;—Leyden, Ausgänge d. Pneumonie, 1879; Nicot, Thèse de Paris, 1829, No. 96, p. 23;—Lebert, Klinik. d. Brustkrankh., Bd. i, 1874;—Richter, Opus. Med.;—Rokitansky, Path. Anat., Phila., 1855, Vol. iv, p. 69;—Scheffels, Inaug. Dissert., Würzb., 1886;—Sieveking, Brit. Med. Jour., Feb. 22, 1868;—Sisley, London Lancet, 1889, Vol. i, p. 843;—Stokes, Med. Times and Gaz., May 26, 1855;—Todd, ibid., Dec. 18, 1852, p. 611;—Tronsseau, ibid., June 16, 1865;—Wells, N. Y. Med. Jour., Mar. 9, 1889; Weil, Berliner k. Wochenschr., 1879;—Woillez, Mal. d. Organ Resp., Paris, 1872;—Wunderlich, Handb., d. Path., u. Therap. Bd. iii;—et al.
[144] See Stokes, Med. Times and Gaz., May 26, 1855;—Wells, Jour. Am. Med. Assoc., Feb. 23, 1889, p. 263.
[145] See also Wells, Cincinnati Lancet and Clinic, June 10, 1882.
[146] See also Andral, Med. Clin., Phila. 1843, Vol. ii, p. 168;—Bruzelius, Hygeia, 1873;—Fischl, Vierteljahre., f. d. Prak. Heilk., Bd. cxiv, S. 113;—Friederich, Volkmann, k. Vortrage, Nr. 75;—Baginsky, op. cit., S. 20;—Heiss, Inaug. Diss., München, 1857, S. 2;—Homburger, Inaug. Dissert., Kiel, 1886, S. 9;—Juergensen, Ziemssen's Handb., Bd. v, S. 125; Kees, Inaug. Dissert., Tüb. 1882, S. 13;—Knuze, Lehrb. prak. Med., Bd. ii, S. 150;—Lebert, Klin. d. Brustk., 1874, Bd. i, S. 488;—Kleimann, Pester, Med. Chir. Presse, 1876, Nr. 45;—Niemeyer, Path. u. Therap., Bd. i, S. 183; Lépine, Pneumonie, Wien, 1883, S. 86;—Raven, Pract., Vol. xxxi, p. 36;—Selbert, N. Y. Med. Rec. April 6, 1889, p. 385;—Weigand, Berliner, k. Wochenschr., 1870, Nr. 41, 1872, Nr. 1;—Waldenburg, Berliner, k. Wochenschr, 1870, Nr. 41;—Wunderlich, Path. u. Therap., 1865, Bd. iii, S. 351.
[147] Andral, op. cit., p. 118;—Buckler, Phila. Med. News, June 17, 1882;—Burrows, Lond. Lancet, July 26, 1845;—Chomel, Pneumonie, Leipzig, 1841, S. 329;—Davis, Prac. Med., Chicago, 1884;—Latham, Clin. Med. Vol. i;—Lithgow, London Lancet, N. Y., 1884, Vol. i, p. 101;—Loomis, Phys. Diag., N. Y., 1878, p. 60;—Peacock, London Lancet, N. Y, 1851, Vol. ii, p. 259;—Roupell, ibid, p. 218;—Reamey, Cin. Clinic, 1872, p. 258;—Sieveking, op. cit.,—Sturges, Pneumonia, London, 1876, p. 70;—Schoenlein, Med. Chir. Rev., Oct. 1845;—Trousseau, Clin. Med., Phila., 1873, Vol. ii, p. 186;—Grisolle, Traité de la Pneumonie, p. 426;—et al.
[148] Med. Times and Gaz., June 16, 1855.
[149] For further information see Black, London Lancet, N. Y., 1883, Vol. ii, p. 458;—Fox, op. cit., p. 161;—Latham, Dis. Heart, Vol. i, p. 161;—Taylor, Med. Chir. Trans., 1845, p. 565;—et al.
[150] See also Andral, Med. Clin., Phila., 1843, Vol. ii, p. 201 et p. 365;—Addison, Works, p. 44;—Anenbrugger, Inventum Novum, Wien, 1761;—Auld, Lancet, 1890, Vol. i, p. 792;—Barset, Bull. de la Soc. de l'Anat., T. xxx;—Barth, ibid, T. xxix;—et Weln. Soc. Méd. Obsv., 1856, p. 501;—Bayle, Rech, sur la Phthisie, Paris, 1816;—Bartels, Virchow's Archiv., Bd. xxi, S. 144;—Baziere, Pneum. Chron., 1819;—Barlow, Guy's Hospt. Rpts., 1847;—Bennett, London Path. Soc. Trans., Vol. xiii;—Bouillaud, Am. Jour. Med. Sci., Vol. xiii, p. 244;—Bouchet, Mal. des Nouv. Nez., 1852, p. 386;—Biermer, Virchow's Handb;—Bastian, Lond. Path. Soc. Repts., Vol. xx; Brown, U. S. Naval Rpts., 1881, p. 562; Achard, Thèse de Paris, 1875;—Broussais, Phlegmas;—Charnal, Bull. Soc. Anat., T. xxx;—Cotton, Med. Times and Gaz., 1855, Vol. i;—Coats, London Lancet, 1884, Vol. i, p. 665;—Charcot, Thèse, de l'Aggreg., Paris, 1860;—Copland, Med. Dic., N. Y., 1855, Vol. ii, p. 900;—Chomel, op. cit., S. 252;—Cruvielhier, Anat. Path.;—Corrigan, Dublin Jour. Med. Sci., 1838, and Dublin Hospt. Gaz., 1857;—Clark, Trans. Clin. Soc.;—Dickinson, Path. Soc. Trans., Vol. xiii;—Flint, Prac. Med. Phila., 1868, p. 193;—Durand, Fardel, Mal. des Vieillards;—Fagge, Path. Soc. Trans., Vol. xx;—Fox, op. cit., p. 268; Forbes, Laennec on the Chest, N. Y., 1830;—Foote, Dublin Jour. Med. Sci., 1866;—Grisolle, op. cit;—Green, Quain's Dic. Med., N. Y., 1884, p. 891 and Path. Anat., p. 267;—Green, Dublin Jour., Med. Sci., 1846;—Hanan, Zeitschr. f. k. Med., Bd. xii;—Hasse, Path. Anat;—Hope, Morb. Anat.;—Heschl, Präger Vierteljahrschr, 1856;—Herard et Cornil, Phthisie pulmon., p. 167;—Hardy et Behier, Anat. Path;—Hyvernat, Thése de Lyon, 1882;—Houghton, Jour. Am. Med. Asso., Vol. v, p. 506;—Gabalda, Bull. de la Soc. de l'Anat. T. xvii;—Heitler, Wiener Med. Woch., 1884 u 1886;—Juergensen, op. cit., S. 301;—Jaccoud, Clin. Méd., p. 82;—Jennings, Dublin Jour. Med. Sci., 1866;—Kidd, London Lancet, 1890, Vol. i, p. 740;—Lattencur, Thése de Paris, 1811;—Lorain et Robin, Comp. Rend de la Soc. Biol., 1854, p. 62;—Loomis, Pepper's Syst. Med., Phila., 1885, Vol. iii, p. 110;—Lebert, Phys. Path.;—Law, Dublin Jour. Med. Sci., 1818;—Legendre, Mal de l'Enfance;—Laennec, Dis. Chest, N. Y., 1830;—Lépine, op. cit., S. 118;—Leyden, Berliner, k. Wochenschr., 1879;—Lancereaux, Gaz., méd. de Paris, 1862;—McDowell, Dublin Jour. Med. Sci., 1856;—Macquet, Bull. Soc. Anat., T. xxii;—Mayne, Dublin Hospt. Gaz., 1857 and 1860;—McManus, N. Y. Med. Rec., Sept. 8, 1888, p. 261;—Pal, Fortschr., d. Med., 1888;—Peacock, Edinb. Med. and Surg. Jour., 1855;—Powell, Trans. Clin. Soc., Vol. ii;—Rat, Thèse de Paris, 1845;—Rokitansky, Path. Anat., Phila., 1855, Vol. iv;—Raimbert, Jour. méd. de Brux.;—Reinholdt, Charité Ann., Bd. i;—Rilliet et Barthez, Mal. de l'Enf., Paris, 1838;—Rayer, Gaz. méd. de Paris, 1846;—Raimond, Thèse de Paris, 1842;—Swett, Dis. Chest, N. Y., 1856, p. 107;—Sutton, Med.-Chir. Trans., 1865;—Steiner u. Neuretter, Präger Vierteljahrschr., 1864, S. 22;—Sutton and Barlow, Lond. Path. Soc. Trans., Vol. xvi;—Schmidt, Inaug. Diss., Erlangen, 1863;—Steffen, Klinik d. Kinderkrankh.;—Stokes, Dis. Chest, p. 150;—Talma, Fortschr. d. med., Bd. x;—Traube, Deutsche Klinik, 1859; Tonnelle, Jour. Hebdom., T. v, p. 160;—Wagner, Zeitschr. f. prak. Med., 1877, S. 469;—Williams, London Lancet, N. Y., 1862, Vol. ii, p. 3;—Wittich, Pneumonie, Erlangen, 1850, S. 9;—Williams, Dis. Chest, 1840, p. 99;—Walshe, Dis. Lungs, Phila., 1860, p. 306;—Weber, Path. Anat. d. Neugeborn., Bd ii, S. 58;—Wilson, On Fevera, N. Y., 1881, p. 182;—Wilks, Path. Soc. Trans., Vol. viii;—Ziemssen, Pleuritis u. Pneumonie, Berlin, 1862, S. 257;—et al.
[151] Bennett's, op. cit., case continued four, and Williams', Lancet, N. Y., 1862, Vol. ii, p. 7, fourteen years.
[152] Taylor, U. S. Naval Rpts., 1881, p. 559. See another case in U. S. Marine Hospt. Rpts., 1887, p. 225.
[153] See other cases and remarks by author in Chicago Med. Recorder, Jan., 1894, p. 54.
[154] See Cotton, op cit., p. 150.
[155] Chomel, op. cit., s. 328.
[156] Am. Jour. Med. Sci., Vol. xlii, p. 244.
[157] This feature will not be discussed, but see Chomel, op. cit., p. 289;—Flint, op. cit., 278;—Williams, London Lancet, 1862, Vol. ii, p. 3;—et al.
[158] At first the cough may be very severe and convulsive, but after a few days it becomes so slight as to scarcely attract the attention of the patient.
[159] In a few instances the patients find themselves "short of breath" upon attempting any unusual exertion for a long time after all other symptoms of the disease have disappeared.
[160] See Niemeyer Seitz, Spec. Path., u. Therap.;—Stortz, Mettbolungen aus d. Würzb. med. Klinik;—Tordeus, Jour. de Méd, et de Chir. de Brux., Juin, 1877;—Thomas, Gerhardt's Handb. d. Kinderkrankh.;—et al.
[161] Pneumonie u Pleuritis, Würzb., 1880, S. 62.
[162] Jour. Am. Med. Assoc., Aug. 25, 1888, p. 268.
[163] Quoted by Walshe, Dis. Lungs, Phila., 1850, p. 294.
[164] Quoted by Lépine, Pneumonie, Wien, 1883, S. 126, and Beob. zur Innern Krankh. Bonn, 1864.
[165] N. Y. Med. Rec., Jan. 17, 1885, p. 80.
[166] Cincinnati Lancet and Obsv., Aug., 1862, p. 475.
[167] N. Y. Med. Rec., Jan. 26, 1884, p. 95.
[168] Deutsche Arch. f. k. Med., 1873, S. 443.
[169] Phila. Med. News, Nov. 28, 1885, p. 605.
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[178] Prog. Méd., 1877, No. 30. [179] Jour. Am. Med. Assoc., Nov. 28, 1885, p. 615. [180] Ibid., Dec. 17, 1887, p. 779. [181] N. Y. Med. Jour., Aug. 25, 1883, p. 208. [182] Op. cit., p. 294. [183] Pleuritis u. Pneumonie, Berlin, 1862, S. 186. [184] See also Leudet, Clin. Méd., Paris, 1874, p. 599.
[185] See also Brieger, Charité Ann., Bd. x;—Hanot, Pneumonie Aigue;—Henoch, Berliner k. Wochenschr., 1886;—Hoerschelmann, Berliner k. Wochenschr., 1884;—Homburger, Inaug. Dissert., Strassl., 1879;—Knœveruagel, Deutsch. Militarärz, Zeitschr., 1883;—Kovanyi, Eulenberg's Encyk.;—Landsberger, Inaug. Diss., Berlin, 1877;—Mœllmann, Berliner k. Woch., 1870;—et al.

CEREBRAL SIGNS AND SIMULATIONS IN PNEUMONIA.

Read before the Forty-eighth Annual Session Wisconsin State Medical Society.

BY J. R. BARNETT, M.D.

NEENAH, WIS.

It is probable that the various papers on the different inflammatory diseases of the lungs, to be presented by this Committee, will take into account the cerebral complications and counterfeits often present, as well as other more frequent, if less serious, complications; and perhaps so fully that anything more would be superfluous. Still, the relative frequency and importance of these cerebral manifestations, grown more frequent and more important since the Russian influenza added its baleful quota to the list of human ills, gives good reason for something of repetition. Indeed, when different writers discuss the subdivisions of lung inflammations practically, that is from the standpoint of bedside observation, there will be much of repetition all through, for at the bedside we find few of those distinct entities which the text-books delight to photograph and catalogue, but instead, a mixture of conditions which baffle rather than invite either delineation or classification.

Again, contrary to what was first confidently expected from the disclosures of bacteriology, the discovery of the specific germ of pneumonia, far from conferring upon that disease well-defined and easily known boundaries, actually added to their vagueness and uncertainty, so that what the culture tube and microscope might determine to be a pneumonia might nevertheless be proven by the stethoscope and percussion hammer to be a pleuritis or a pericarditis or, perhaps, all three.

The co-existence of these or other lesions as the result of pneumonic infection is always of great clinical interest, but its discovery is not always of vital importance, judged by its practical application to treatment. When, however, this infection invades cerebral or meningeal structures, or, originating there, invades later the lung, the case is different, for now it is of vital concern to make out the graver condition, to the end that appropriate changes in treatment may be made, and in time.

What determines this invasion of regions anatomically so remote and dissimilar? So far the question does not seem to have been definitely answered. Fränkel, Weichselbaum and others have found the diplococcus of pneumonia within the membranes and ventricles of the brain coincidently with an attack of pneumonia, and also when that disease was not present. Similarly the influenza bacillus of Pfeiffer and the pneumococcus of Friedlander have been found in those situations, and, to further illustrate the neighborly relations in misfortune of the brain and lungs, cerebro-spinal meningitis is often followed by pneumonitis, the specific germ of the former being found in the lungs.

Perhaps, however, it should be said that the common germ of both is found in the lungs after the previous invasion of the membranes of the brain or spinal cord, since it looks the same, whether found in one inflammation or the other. So, also, the same mixed infections may be present when these inflammations coexist, as by any of the pyococci.

Bacteriology has thus thrown a flood of light upon what was formerly looked upon as the strangest coincidence of distinct diseases, and reduced to law the most erratic vagaries of morbid processes. Now we expect that with every epidemic of cerebro-spinal fever, some—few or many—cases of lung complications will occur, and, *vice versa*, that a generally prevalent pneumonic fever will have its quota of brain cases, and that each, in epidemic or endemic form, will be haunted by the independent presence of the other.

The existence, then, of these mutual relations being known, it would be naturally inferred that they could be promptly recognized when present, but actual experience shows that this is not always easy to do. With young children especially, some of the most striking symptoms are common to both, nor are they necessarily different in character or degree. This is particularly true of fever, headache, vomiting and delirium, and it will often be true of the pulse, respiration and certain nervous signs, like the contracted or dilated pupil, regional hyperesthesias, and the like. As for temperature, while it would be expected to run higher in meningeal inflammations, it is not uncommon for it to remain relatively low throughout. Thus, the temperature of uncomplicated pneumonia often reaches 105 degrees or higher, while a case complicated by meningitis may show no higher range than 102 or 103. Nor will sudden variations make the discrimination any easier, for a rapid rise from 102 to 105 degrees may, and usually does, come from those still mysterious factors in the production and dissipation of heat supplied by the specific toxinaemia of the pneumonic inflammation, or, again, from the septic effects of pyogenic bacteria. Since the same chronic causes are operative in cerebral complications it follows that a feeble toxinaemia would be attended by a moderate temperature, always excepting the direct irritating effects of an inflammation involving heat centers, or pressure effects of large effusions upon the medulla.

Headache is often a prominent symptom in pneumonia with or without complication, but I have seen no case where it afforded help in making a discriminating diagnosis. Sometimes the restlessness and violence of the patient will be attributed to intense headache, but it is very rarely that he complains specifically of this, as is often done in cerebro spinal fever. It has seemed to me that other regional neuralgias and hyperesthesias have more diagnostic value than this, but they also have their perplexities, for, occurring in the chest, they may be explained by the presence of the existing inflammation, and it is only when this last is deep-seated in the insensitive region of the interior of the lung, that it can be eliminated as a cause of pain. Occurring in the extremities they are far more significant, and when is superadded tonic of clonic spasm it is made tolerably certain that the membranes of the cord, at least, are involved in the morbid process, although it must not be forgotten that these, too, are sometimes present when, at most, a meningitis can be only suspected.

As an early symptom in pneumonia, vomiting is present in from 30 to 60 per cent. of cases, according to the experience of different observers. Exceptionally it continues throughout the disease. By itself, therefore, it is only in such cases that it could justly arouse the suspicion of meningeal complications. There is a peculiar explosive vomiting, or a

passive regurgitation, without previous or attendant nausea, which is believed to come from a central irritation through the vagus; but this, too, may be seen when the cerebral structures are intact, so far as can be judged by attending symptoms. Correspondingly, the nausea and vomiting characteristic of gastric irritation as commonly observed may be the stomach symptom of a well-marked menengitis.

Certain forms of delirium, particularly the violent kind occurring before the last days of the disease, or the half-stupor which seems to observe without taking cognizance of the sights and sounds of the sick-room, afford a strong presumption of brain trouble, but they are not proof of this, since they occur fairly often without it. But with it the delirium may be quiet and unalarming till it verges to stupor and unconsciousness.

By itself, the pulse does not afford a criterion by which to judge, unless extreme rapidity be replaced by abnormal slowness. This would be fairly pathognomonic of intracranial pressure, unless it could be explained by some cardiac depressant administered in treatment. But it goes without saying that the significance of all symptoms present should be read in full remembrance of remedies employed and their natural results.

A rapid, more or less cordy pulse, characteristic of serous inflammations is apt to be present, but the pulse of resistance that goes with parenchymatous inflammations may not always be easily known from it. In general, it may be said that, with the exception noted, the pulse gives but little aid in making a discriminating diagnosis.

Usually the respiration has greater significance than the signs and symptoms already mentioned. It may be alike rapid and fairly even in both simple and complicated pneumonia, but irregularity, particularly of the Cheyne-Stokes character, and abnormal slowness, or both, point strongly to a crippled medulla, and a sudden cessation of breathing, from a basal pressure, may all too late give the first positive evidence of a brain complication.

For me the pupillary signs are the most positive, excepting, possibly, the muscular, afforded in the whole history of the case. Exceptionally, without cerebral lesion the little patient's eyes may be bright and glistening, intolerant of light, irregular of pupil—which may be contracted or widely dilated, and as some affirm, the eyes may be distinctly squinted; but such an array of signs should point to the brain, and if the pupils be of unequal size, or insensitive to light, or momentarily contracting to dilate widely in the presence of strong light, then, in my opinion, the evidence should be considered as well-nigh complete.

Reverting to muscular signs, it should be stated that clonic spasms early in the sickness are usually not indicative of nervous lesions. They are regarded by the older writers as having a like significance to the chill in older patients. Now, however, it would be more rational to attribute them to the irritating effects of microbic toxins upon the appropriate motor centers. When we remember how mixed the pulmonary infection may be, how Pfeiffer's bacillus of influenza may reinforce Fränkel's or Friedlander's pneumococcus, or both, and how one or more of the pyococci may join this coalition against the health and life of the little patient, it is not strange that this mixed intoxication should have varied and alarming effects upon the sensitive brain and cord, nor is it strange that they should not always be easy of analysis. Tonic rigidity of the nuchal muscles and those of the back and extremities has long been regarded as significant of meningeal inflammation, and it would be well to regard it as a positive sign. But if to this be added the eye symptoms already spoken of, or the characteristic vomiting without nausea, the diagnosis would admit of no doubt whatever.

Auditory symptoms will sometimes be available when others are absent or few. There may be a hypersensitive hearing, or impairment or loss of this sense. In the few cases I have seen where either of these has been present it has been the former. It should probably have the lesser diagnostic meaning, as it may doubtless occur when neither the center of hearing nor the auditory nerve in any portion of its course is affected.

The middle ear, as an *atrium infectionis*, should not be lost sight of. Especially in the broncho-pneumonia of influenza, though other forms do not always leave the tube and middle ear inviolate, the danger of tympanic inflammation is very great; and, once present, it involves all the risks to adjacent structures which are known to attend such diseases from commoner causes. A resulting thrombo-phlebitis and following abscess might show focal signs according to its location and the extent of pressure.

Focal symptoms might also supervene upon the occurrence of embolism, depending upon the region made anemic by the arterial plug. Remembering the hyperinosis usually present in croupous pneumonia, and that clot is not an infrequent incident, should a local paralysis suddenly occur it would be safe to assume that the corresponding cerebral circulation had been occluded by clot. This is all the more certain if, as usual, it happens before the decline of the inflammation, for the brain sequels of middle ear diseases are of later origin.

In my experience, meningitis is more apt to recur as a complication in endemic than in epidemic or sporadic pneumonia; but this is limited, being based upon only two instances. In the first, of three cases occurring in one family two died of meningitis, well-marked symptoms presenting after more or less extensive lobar exudation. In another family, living but a few rods away, out of two cases, one died of meningitis. All of these, and some dozen more of simple pneumonia in the same neighborhood, were nearly cotemporaneous. Neighboring towns had few or no cases.

Four or five years ago, also, Neenah had a visitation of mild pneumonia, and out of the cases I saw two had most of the signs characteristic of meningitis, and two or three others many of them. No deaths occurred, but in the two I could not avoid a diagnosis of brain complication.

This experience is much too limited to generalize from, but it will lead me to look for like coincidences in future endemics, and, if nothing more, to greater alertness in the discovery and comprehension of early cerebral signs.

From what has been said, a further point of practical interest might be inferred, but it will not be amiss to speak of it. Not only the simulations, but the signs likewise, of pneumonic fever, will sometimes mislead; for as it happens not seldom that a distinct limited exudation may be positively made out

one day to be positively and forever lost the next, so it may happen that slight pulmonary sounds may be attended by alarming cerebral signs, and all replaced in a day or two by evidences of the most extensive lobar exudation. In such cases it is well for the attending physician if the consultant see them before the miraculous transformation, if at all, for he will thereby be saved some mortification of spirit, although the latter will miss the glory of finding out, or seeming to find out, what his colleague had blindly overlooked.

IS MEMBRANOUS CROUP DIPHTHERIA?

Read before the Indiana State Medical Society at Indianapolis, May 17, 1894.

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Notwithstanding the investigations which this question has provoked during the last decade, there is still quite a diversity of opinion concerning the identity of these two affections, and considerable time must yet elapse ere a positive answer may be given to the query which forms the title of this paper.

The desire of the writer is to stimulate an interest upon this subject in the Society, and to bring about a thorough discussion upon it, believing, as he does, that a free interchange of ideas and experiences is one method by which an elucidation of the problem may be brought about.

In the past few years the bacteriologist and microscopist have stepped prominently to the foreground, and to their indefatigable labors and their valuable investigations and experimentation are we indebted for the marvelously rapid strides forward which medical science has taken. Our ideas of the etiology of disease have radically changed, and in consequence of our increased knowledge in this direction our methods of preventing and treating disease have become much more effective.

Through these bacteriologic investigations the discussion has arisen concerning the identity of membranous croup and diphtheria, and although the investigations in this matter may be said to be yet in their infancy, they have proceeded sufficiently far to convince many of the workers that the two diseases are one and the same, viewed from an etiologic standpoint.

As I stated, however, these investigations have but recently been commenced, and in this controversy I fear that we have depended too largely upon the statements of our friends, the bacteriologists, and paid insufficient attention to those men who see disease at the bedside as well as in the laboratory. The opinions of intelligent men who are daily in contact with the clinical manifestations of disease are certainly of great importance.

In treating this subject, I shall commence with the consideration of the etiology of diphtheria, as it is generally accepted at the present time. Without burdening you with a discussion of the predisposing causes, with which you are all familiar, I will proceed at once to the exciting cause which is contagion.

The disease is now known to be transmitted by a specific organism, and this is known as the Klebs-Löffler bacillus, which was first described by Klebs and afterwards more extensively studied by Löffler. The production of the false membrane is the primary or local result, while the secondary or constitutional symptoms are due to the absorption of the poison generated by the Klebs-Löffler bacillus.

In the examination of the diphtheritic membrane, however, it has not uncommonly occurred that the characteristic bacillus was absent, and only streptococci, staphylococci, and at times other cocci were present.

The streptococcus, staphylococus, etc., were also found in those cases, wherein the Klebs-Löffler bacillus existed, and in these cases the attacks were almost invariably more severe than when these cocci were absent. This fact has been accounted for by the supposition that these cocci penetrated parts that the Klebs-Löffler bacillus did not reach, it being confined entirely to the membrane.

Baginsky, in a paper recently read before the Berlin Medical Society gave the following statistics: Out of 154 cases of diphtheria he obtained cultures of the Klebs-Löffler bacillus in 118 instances. In the remaining thirty-six cases the streptococcus and staphylococcus alone were found; of this latter class, thirty-two of the cases terminated in complete recovery, unhindered by any complications.

From these observations, Baginsky is strongly inclined to the opinion that there occur two separate and distinct forms of diphtheria; a true diphtheria having for its cause the Klebs-Löffler bacillus; and a pseudo-diphtheria, in which streptococci and other cocci are the etiologic factors. Dr. T. M. Prudden, of New York, publishes an account of his investigations, which comprises twenty-four cases. A vast majority of these cases occurred as a complication or sequel to scarlatina, and in none was he able to demonstrate the presence of the Klebs-Löffler bacillus. Martin publishes an account of the examination of 200 cases, in 79 of which the characteristic bacillus was absent, and in this latter class the mortality was very markedly lower than in those cases characterized by the presence of this bacillus.

Dr. Wm. H. Park, of New York, states that in 127 cases in which the Klebs-Löffler bacillus was found to be present, the mortality was 34.2 per cent. while in 79 cases in which it was absent, the mortality was but 4.3 per cent. Park also says:[1] "The inflammation caused by the streptococci and to a less extent by other cocci, differ greatly. They may be conveniently divided into:

1. Pseudo-membranous angina.
2. Pseudo-membranous laryngitis.
3. Croupous tonsillitis.
4. Follicular tonsillitis.
5. Acute pharyngitis and tonsillitis without exudate.
6. Cases similar to all the preceding, but complicating infectious diseases."

From the above facts I would glean the following points, the correctness of which is accepted by many.

1. That those cases which we have heretofore diagnosed as diphtheria are divided into two classes, one of which constitutes true diphtheria, the etiologic factor of which is the Klebs-Löffler bacillus, while the other class consists of cases of exudative tonsillitis or pharyngitis, caused by the presence of streptococci, staphylococci, etc.

2. That true diphtheria is a disease attended with a very high death rate, the severity of the affection

[1] Annual of the Universal Medical Sciences, 1893, Vol. 1.

being caused by the absorption of a toxalbumin, which is generated by the Klebs-Löffler bacillus, and which produces septicemia, paralysis, albuminuria, ganglionic engorgements, etc.

3. That uncomplicated exudative pharyngitis or tonsillitis (so-called pseudo-diphtheria) is followed in a vast majority of cases by complete recovery.

4. That only the true diphtheria is contagious.

I will next briefly consider the etiology of that affection known as membranous croup. The exciting causes of this affection were until recently supposed to be exposure to cold and moisture, and the infectious diseases, contagion having no etiologic importance.

It is now claimed by many writers of authority that the disease is produced by the Klebs-Löffler bacillus, and is in consequence diphtheria.

Frankel records four cases of idiopathic membranous laryngitis, in none of which was there any membrane found in the fauces either before or after death; but in all four of these cases pure cultures of the Klebs-Löffler bacillus were obtained; and he concludes as a result of his investigations that idiopathic membranous laryngitis and diphtheria are etiologically identical.

Other investigators whose opinions are also worthy of respect and consideration have arrived at practically the same conclusion.

It should be remembered, however, that the examinations of the membrane of croup have been comparatively few, and, although we have proof positive that many cases of croup are in reality true diphtheria, the investigations have not as yet proceeded sufficiently far to admit of the opinion that all cases are produced by the characteristic diphtheria bacillus, or to make such opinions of any great value.

If, however, this is the case, then membranous croup must of necessity be a highly contagious disease, and right here is the stumbling block in the pathway of the advocates of this theory.

In studying the literature of the subject I have been unable to obtain any tangible evidence of the contagiousness of this affection. On the contrary, I find abundant testimony to the effect that the possibility of communication from one to another does not exist.

Osler, in his recent work on the "Practice of Medicine," states that he has twice observed cases of membranous croup in the Infants' Home in Baltimore where the conditions favorable to the spread of the disease existed, yet no other cases occurred. Other authorities agree with this opinion.

It has been my own misfortune to have had in my charge, at various times, four cases which I believed to be idiopathic membranous laryngitis, the last one occurring about one year ago.

At the time of my attendance upon these cases I gave little or no thought to the possibility of contagion, especially as there was no exudate visible on the fauces. Consequently no precautionary measures whatsoever were taken. The patients were not isolated, other children being allowed the freedom of the sick chamber.

In each of these cases there were other children in the family, of an age rendering them susceptible to contagion. In one other family there were four other children under the age of twelve years. Neighbor children were also allowed by the family in and out of the room and were frequently in close contact to patient. This occurred in two cases. In not one of these four families did there develop a case of diphtheria, neither was there an appearance of the disease in any of these neighborhoods. It seems to me that these cases would have formed excellent nuclei for an epidemic had the trouble been true diphtheria.

Such experiences have occurred, I have no doubt, to nearly every one within the sound of my voice. What would be the result if we were to handle a case of diphtheria in this fashion? We would undoubtedly have a nest of diphtheria to pay for our negligence. It may be said in answer to this, that in the majority of cases we have but one patient in the family, the disease not extending to other members. This is true, but the precaution every physician takes to prevent the spread of the disease is the reason for it. How many physicians five years ago took these same precautionary measures in membranous croup?

In further support of the view that many cases of membranous laryngitis are due to causes other than diphtheria, permit me to briefly present some statistical facts.[2] From 1775 to 1850, diphtheria was almost or quite unknown in this country and in Great Britain, but many cases of non-contagious membranous laryngitis occurred during this period.

In Philadelphia from 1846 to 1849 the annual mortality from croup was from 111 to 312. No deaths from diphtheria are recorded during this period. From 1860 to 1879 the annual mortality from croup ranged from 185 to 455, while from diphtheria it was from 110 to 708.

Previous to 1859, when diphtheria made its appearance in Philadelphia, there had occurred altogether 3,078 deaths from croup, during which period no diphtheria was encountered so far as is known.

In New York City previous to 1858, but three deaths from diphtheria occurred during the present century, while croup had been more or less prevalent.

From 1858 to 1875 the annual death rate from croup ranged from 338 to 758, while that from diphtheria was from 5 to 2, 329. Dr. Lewis Smith, in this connection makes the following observation: "It is evident that most of the cases of croup occurring in New York prior to 1858 were due to other causes than diphtheria. It seems hardly probable that so many cases occurring in the hands of hundreds of skilled practitioners should have presented none of those symptoms which we now recognize as characteristic of diphtheria, especially septicemia. It is probably an acute, non-contagious, non-infectious inflammation of the larynx, local in character. But there is also a true diphtheria (laryngeal), and this is the more common form at the present time."

The two diseases present some differences in their clinical aspects. In diphtheria the initial symptoms are slight chilliness, fever, aching in back and limbs, etc. In croup the first symptoms are slight hoarseness accompanied by a rough cough, while there is little or no elevation of temperature.

In diphtheria, the temperature gradually rises, generally reaching 108 or higher, while in croup the temperature is ordinarily much lower than this and not infrequently it remains normal. In diphtheria the first indication of local trouble is slight redness of the fauces and more or less difficulty in deglutition. In croup we have in addition to the cough and hoarseness, which gradually increase in severity,

[2] Reference, Handbook of Medical Sciences.

dyspnea, which gradually becomes more and more intense.

In diphtheria, the exudate in the vast majority of cases makes its initial appearance upon the tonsils, later extending to the pillars of the fauces, the uvula and even to the posterior pharyngeal wall; later, in some cases extending into the posterior nares or downward into the larynx, trachea and bronchi. In croup, the membrane invariably first appears in the larynx, from this point extending upward or downward or both. In diphtheria, we generally have a characteristic glandular swelling, which is absent in croup. Constitutional symptoms are prominent in the former disease and absent in the latter. In croup, all the symptoms are rapidly increased in severity, the dyspnea becoming intense. Cyanosis soon appears, and death generally closes the scene.

Should the diphtheria be laryngeal in character, there would not be such a wide divergence in the symptoms. Still the fever would be higher than in croup, glandular swelling would occur and the constitutional symptoms be marked.

Two of the cases of croup in my own practice, to which I referred, had absolutely no rise of temperature at any time, and in all four of the cases no glandular swelling existed and no symptoms characteristic of diphtheria were present.

In the earlier portion of this paper we have seen that there occurs a true diphtheria, highly contagious and very fatal; and a so-called pseudo diphtheria not contagious and much less fatal than the former affection. We have seen that the etiology of these two diseases is very different.

Is it not possible, nay, even probable, that these same conditions prevail with reference to the laryngeal mucous membrane? I would answer the question affirmatively, and would further strengthen this opinion by studying the history of diphtheria and croup as they occurred in this country during the present century, and to a certain extent by the study of the clinical manifestations of the two affections.

The conclusions, then, which I have reached are as follows:

1. That there are two forms of membranous laryngitis; one a true diphtheria, produced by the Klebs-Löffler bacillus and the other non-contagious membranous laryngitis, produced, if you please, by streptococci, staphylococci, etc.; and that both of these types are very fatal.

2 That membranous croup as we have heretofore understood it, is a disease of much less frequency than was formerly supposed.

3. That it being impracticable to make a bacteriologic examination of the membrane in many cases, and as this is the only method by which we may be absolutely positive of our diagnosis, the same precautionary measures should be taken to prevent a possible spread of the disease as would be adopted in a case known to be diphtheria.

Those who believe that a non-contagious membranous croup does not exist will hardly be favorably impressed with the idea of carding the house, isolating the child, and causing any other children who may be members of the family, to remain from school for several weeks, but in the light of our present knowledge upon the subject it is the only safe method to pursue, unless a careful microscopic examination by a competent bacteriologist has demonstrated the absence of the Klebs-Löffler bacillus.

ON LOCAL ANESTHESIA PRODUCED BY INTRACUTANEOUS INJECTIONS.

BY DR. CHOLEWA.
BERLIN, GERMANY.

[The following paper was sent to me by the writer, my old friend, the well-known aurist of Berlin, Germany, with the request that I look it over and have it published here. He was induced to write the essay, not only because he found the method described of great value in the practice of his own specialty, but out of gratitude to Dr. Schleich (the originator of it), who performed an operation upon him that under ordinary circumstances would have required a general anesthetic. This otherwise very painful surgical procedure was carried out with perfect comfort to the patient, by employing the local "infiltration-anesthesia" method, which he describes.—Casey A. Wood.]

In the winter of 1891, a young surgeon gave a discourse on infiltration-anesthesia before the Berlin Medical Society which excited great interest. That is saying a great deal, since this Society, the greatest and most famous in Germany, consists mostly of professors in the University as well as the heads of the great hospitals in almost equal numbers. He who aspires to address this scientific body must be very sure of his subject, for he will have to suffer a most merciless criticism.

Prof. Virchow is the President of this Society, and who does not know the sharp tongue and the caustic wit of this gentleman, who has so often promoted as well as humiliated scientific efforts? But this young physician *was* master of his subject. A numerous array of cured patients surrounded him and were introduced to the audience by him, in order that his colleagues might with their own eyes see, and with their own ears hear, and investigate. He did not discuss the ability to operate without pain in the various branches of minor surgery only, but asserted that capital operations could be done by his method. For example, he exhibited one case in which an ovarian tumor weighing many pounds was removed and the woman did not faint once during the long operation. An old man showed scars on his thigh which were left by a carbuncle extending from the trochanter of the femur to the bend of the knee, and yet this old man had in this case undergone a very severe operation without the use of one single drop of chloroform! The applause, the enthusiasm, especially among the younger members of our profession, was general; it rose to rapture when a young colleague showed the assembly his finger, to which a short time previously this method had been applied by the author, after which a deep but painless incision was made into a well developed whitlow.

How many since this never-to-be-forgotten evening have been treated with this method; how many have been freed from the danger of chloroform and from their own dread of employing it! Over and over again this method of infiltration-anesthesia has been employed in hundreds of cases, simply because surgeons prefer infiltration-anesthesia to the anxiety of a chloroform-narcosis, the dangers of which stand in no proportion to the importance of the operation.

In what respect does this method differ from other local anesthesiæ?

Inasmuch as the description of the first reception of this method by the medical world was witnessed by myself, in explaining it I beg permission to use the words of the master who discovered it. In the spring of 1892, Dr. Schleich took the opportunity, at the annual meeting of the Head Surgeons at the Langen-

beck Haus, to lay before the assembled colleagues the management of his method in the following words:

INFILTRATION-ANESTHESIA AND ITS RELATION TO GENERAL ANESTHESIA.

The efforts hitherto made to perform painless operations by means of local anesthesia have not been very successful. To all the methods of local anesthesia hitherto employed, was opposed a danger in one or another direction. Anesthesia produced by vaporization of ether, or mixtures of ether, brought with it the danger of gangrene of the frozen tissues, to which was added great pain, especially of the inflamed parts during the freezing, thus considerably diminishing the advantages of the process. The dangers of poison were opposed to the general use of cocain, that most excellent of all local anesthetics. To this must be added that the pricking with the Pravaz needle and the act of injection itself, especially into the inflamed parts, was so painful that the procedure was considerably robbed of its value. By the employment of the ether-spray as a preliminary to anesthesia by means of cocain injections, I succeeded to some degree in avoiding this evil. The surface of the skin above the part to be made anesthetic became sufficiently insensible by the ether-vaporization to render painless the introduction of the needle. The contents of the syringe entered first into the skin (intracutaneous), and not under the skin (subcutaneous). If I am not mistaken, it was our colleague, H. Schmidt (of Stettin), who first suggested the necessity of these primary intracutaneous injections. I have for many years very frequently performed operations by this species of cocain anesthesia, and have reported several cases. Nevertheless, after the application of solutions from 1 to 5 per cent., as soon as a maximum dose of 0.005 cocain had been reached, frequently even below this point, the most serious symptoms of intoxication have taken place. This occurred even after the application of from two to five small syringefuls, and even when, by previous compression with Esmarch's bandage, the circulation was stopped as long as the narcosis lasted. Medical periodicals are full of reports of cocain intoxication, a large percentage of which have had a fatal issue. Owing to this state of things, it was impossible that local anesthesia could successfully compete with "general" narcosis.

I have, therefore, undertaken the task, in a series of trials on myself, on my assistants and the attendants of my clinic, to settle where precisely lay the limit of the efficacy of cocain. These and the experiments following, the results of which I had the honor of laying before the Medical Society of Berlin last November (1891), were all performed in such a manner that the real question, whether a given fluid be an anesthetic one or not, was decided within the intracutaneous limits of the skin. We made the punctures as parallel as possible to the surface of the skin immediately under the papillæ, until a white and slightly elevated blotch rose, resembling the sting of a gnat. The reason that the investigations of this subject, so carefully made by Liebreich and his pupils, as well as by Levin and Kanewsky, did not immediately lead to the discovery of any new facts, was that the aforesaid authors applied the fluid under examination *subcutaneously*.

We tried these experiments first on ourselves; those authors experimented chiefly on the skin or the mucous membrane of animals. During these "intracutaneous" trials of the various solutions of cocain, first appeared the surprising fact that solutions of 1–5000 in water were able, within the limits of the infiltration, to produce a complete anesthesia, so that punctures, cutting, scratching and scraping could be done absolutely without pain. Henceforth this fact may be justly considered as indisputable, after my having proved it in several hundreds of operations. After the discovery of this fact it was a natural inference that the cocain could be altogether left out of the fluid, and the same results were obtainable with pure water and solutions of salt. We found, indeed, that pure distilled water is able to produce perfectly anesthetic blotches. But here an essential difference appeared, namely, the process of injecting water into the substance of the skin itself with the formation of water blotches is painful, and that to no slight degree. Not until from a half to a minute after the injection does pure anesthesia take place, and then is quite as perfect as after the injection of cocain of from 1–5000, or in stronger solutions. The result was that distilled water, according to the meaning of Liebreich, is an "anesthesia dolorosa;" that is, the commencement of anesthesia (the paralysis of the nervous substance), is preceded by a stage of pain, a hyperesthesia of the nerves. This hyperesthesia was an obstacle to the use of pure water for operating purposes, although the refrigerating of the water to zero (Cels.), as well as the use of the ether-spray, employed in the above-mentioned way, reduced this stage of irritation to a minimum, so that I was several times enabled to perform with pure distilled water, such operations as opening furuncles or carbuncles, removal of small ganglia, etc.

Further experiments revealed that a number of substances were practically available as anesthetics without producing irritation. First, as strong a solution of common salt as 0.6 per cent. produces no anesthetic effects worth mentioning. On the contrary, it was found that a further diluted solution of common salt, namely, a 0.2 per cent. solution, by itself, especially in lower degrees of temperature, produces a perfectly prompt anesthesia in the region of the infiltration. I may here, perhaps, remark that what is true of the skin also refers to other tissues of the body; for instance to the subcutaneous layers, the muscular layers and the periosteum. The 0.2 per cent. solution of common salt produces not only anesthesia, an effect which it possesses in common with water, but the process of injection is painless. This proves that it is the infiltration itself that produces the anesthesia.

The anesthetizing fluid need not be itself anesthetic. The proportion of common salt in a solution is important, as witness the following experiment: The smallest effective dose of cocain—weaker injections caused pain—was 0.2–100, or 1–5000. This watery solution of cocain produces anesthesia and makes other injections painless. The same dose of cocain containing 0.6 per cent of common salt is painful and is not able to produce anesthesia, while the same solution wherein the amount of common salt is not greater than 0.2 per cent. again affords perfect anesthesia; indeed one gram of cocain in ten liters of a 0.2 per cent. solution of common salt is capable of producing complete anesthesia, or in other words,

I may use half a liter of my anesthetic solution before the maximum dose of 0.05 cocain is reached.

Now, when you consider that for most operations, as for example the amputation of the breast, about fifty to eighty grams of the solution are employed, you will agree with me, that there can be absolutely no question of danger of poisoning from this method of anesthesia, especially as the dose is never administered all at once, but is extended over the time occupied by the whole operation. If I may be permitted to suggest a theory to explain the incontestable fact of anesthesia by the thoroughly penetrating infiltration of "indifferent" fluids, I must not omit to say that cocain, common salt and water are not the only materials that are able in this way to produce anesthesia. You will obtain as complete a state of anesthesia by using a solution of 3 per cent. sugar or of 0.1 per cent morphia or of 3 per cent. potassic bromid, or of 1 per cent. methyl-violet, or of 2 per cent. caffein, and so on. I may mention that the efficacy of all of these materials, to which may certainly be added a great many others, will be increased by dissolving them, not in water, but in a 0.2 per cent. solution of common salt.

How is this fact to be explained? I assume that the physiologic solution of common salt of 0 6 per cent. on account of its similarity with the composition of blood serum is highly irritating when presented in excess to the sensitive nervous tissues.

Water, on the other hand, is sufficiently different with respect to the lining tissues and its normal fluid to modify the nervous substance; it first produces irritation, and afterwards paralysis of the nerves and anesthesia. I surmised that between these two effects, the indifferent one of the 0.6 per cent. solution of common salt and of the distilled water (differing from the composition of the fluid of the lining tissues) there must be a territory within which a weaker solution of common salt would be able to produce anesthesia without the irritation to nervous tissues resulting from the use of both stronger and weaker solutions. This border land was found in a 0.2 per cent solution of common salt in distilled water. This is the very anesthetic fluid which I employ in my operations; the addition of 1 gram of cocain to 10,000 or 5,000 grams of this solution facilitates the practical application of the solution without entailing even a shadow of danger. One gram of this solution contains only 0.0001, that is a tenth of a milligram, of cocain. The maximum dose of cocain is not reached till 500 grams of the solution have been used. It must be remembered, also, that during the operation more than half of the fluid employed runs out again or is wiped off.

In minor operations I make use of a solution of 1–5000 grams, and for dressings recommend the employment of a solution from 1–1000 grams.

I advise two "stock" solutions: One of 1 gram of cocain to a 1000 grams of water (Solution A) and the second of 2 grams of common salt to a 1000 of water (Solution B). Parts of solution A are mixed for use with five or ten times as much of fluid B. Both fluids are easily sterilized.

The cause of anesthesia by infiltration is not a simple one; several factors are at work; first the pressure of the injected fluid and the removal of the blood from the infiltrated tissues. After a properly performed injection, they appear perfectly white. That is, instead of the tissue juices the foreign mixture is incorporated in all the lymph vessels and the areolar spaces, while the blood is gradually forced into the neighboring vessels. But besides this pressure and anemia of the tissues, temperature plays a prominent part. The proof of this is very simple. All my solutions of common salt of from 1–1000 to 10,000 have the best effect at zero, Celsus.

Every edema of the skin would produce anesthesia of the parts, every swollen limb would become insensible, did not the injected fluid, which causes this pathologic edema, contain the same amount of common salt (0.6 per cent.) as the serum of the nervous fluid. If one produces an artificial edema with other fluids—with or without a little common salt—the whole region of the artificial swelling will become insensible and will enable one to operate without causing pain. This is briefly the principle of infiltration–anesthesia, which in practice has gained such a widespread application. This proceeding is, in the first place, beneficent to the patient, for whom the danger of the operation is diminished in the same degree as we are able to spare him the general narcosis.

The danger of an operation, in so far as loss of blood is concerned, scarcely exists, thanks to the advanced progress of our operative technique, for which we are indebted chiefly to our great masters of the pre-antiseptic era, and not the least to him whose immortal name has been given to this house. Lister has enabled us to make the dangers of infection depend upon our sense of duty and our carefulness; the danger of poisoning by the use of antiseptics we have banished by our efforts to reveal the laws of asepsis. What remains, then, to be done? To diminish the dangers of narcosis. What is wanted is sufficiently shown by the ever recurring recommendation of new and improved inhalation-anesthetics, such as ether, ethyl-bromid, pental, etc. Among these, local anesthesia claims the first rank.

For operations of medium importance, in which I include simple uncomplicated laparotomy without extensive adhesions, amputations of the breast, and removal of large tumors from other situations, there can now be no question of the efficacy of infiltration-anesthesia. It will be the task of the future to render this matter of proceeding, in principle unassailable, practical for surgical purposes in still more serious and extensive operations. I have so far operated upon 521 patients painlessly and without a sign of danger. Among these I might mention such operations as nephrotomy, herniotomy, removal of sequestra, amputations of the mammæ, removing glands from axilla, and laparotomies. It must never be forgotten that chloroform narcosis increases the danger of the operation. This danger is incalculable. Even the most circumstantial statistics can not tell us anything definite as to whether the danger be great or small for the individual. But how many dangerous cases of asphyxia of this or that kind, even of the deaths happening hours or days after the use of chloroform come to our knowledge, but are never in our statistics!

"General narcosis" is not the ideal method for the patient or for the physician; if I operate upon one part, why should I deprive the individual wholly of his consciousness and force him to give himself helplessly into my hands? especially if, as frequently happens, I am obliged to deprive him of consciousness not in the form of a quiet, delightful sleep, but too

often only after a struggle followed by anxiety about the eventual danger of the narcosis.

Of 537 operations, I have used chloroform in only 16 instances, and then in cases where an especial exigency demanded it as, for instance, insurmountable fear, hysteria, the personally expressed wish of the patient and failure of local anesthesia.

I now consider myself no longer justified in making use of general narcosis in my operations, unless the method of infiltration-anesthesia has been previously tried. To perform operations under chloroform or other narcosis, when they are certainly practicable with one or other form of local anesthesia, I must, from the standpoint of humanity, denounce as absolutely unjustifiable.

Königgrätzer Strasse. 47.

ARTIFICIAL HYPEREMIA IN THE TREATMENT OF DELAYED UNION.

Read before the Mahoning County Medical Society, April 9, 1894.

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In 1875, Nicoladoni[1] published an article upon Dumreicher's method of treating threatened pseudarthrosis. The underlying principle of the method was the production of hyperemia at the seat of fracture by means of compression above and below that point. The method demanded the use of graduated compresses, extra splints, etc., and was quite complicated. It does not seem to have come into general use, as Bruns[2] says he only knows of five cases where it was successfully employed. H. O. Thomas,[3] of Liverpool, recommends a similar method, combining with it, percussion. He endeavors to produce severe irritation at the seat of fracture by vigorous percussion—sometimes in anesthesia. After this he seeks to retain the congestion by elastic constriction above and below the part percussed.

In a paper read before the German Surgical Society in 1887, Helferich[4] proposed to employ artificial hyperemia, produced by elastic constriction, in the treatment not only of delayed union, but in that of bone cavities produced by operative procedures, and in cases of infantile paralysis, congenital dislocation of the hip, and other conditions in children where an increased growth in the length of the bone is desired. I have had no experience with this method in other cases than those of delayed union. The object of this paper is to once more bring this comparatively unknown but very efficient method before the profession, and to report my experience with it in a limited number of cases.

Helferich proves, by citing cases where an increased blood supply, caused by some pathologic condition produces a thickening of bone in adults, and a lengthening, or thickening or both in children, that hyperemia plays a prominent part in the formation of new bone. He gives warning, however, that it will not cause the production of callus but will only increase it when started by some other natural or artificial means.

To illustrate the technique of his method, Helferich takes a fracture of the humerus for an example. He first applies a flannel bandage from the fingers to a point about an inch and a half below the fracture; at the same distance (an inch and a half) above the fracture he applies a piece of rubber bandage or tubing tightly enough to retard the return of the venous blood but not to interfere with the arterial circulation. This produces a marked congestion in the parts surrounding the fracture and left uncovered by the bandages. At first the constriction is only allowed to remain a short time, but the duration of its application is rapidly increased until it is soon left on day and night. I have found its almost continuous application for a period of ten days sufficient in the cases in which it has effected a cure.

During the use of this method, the fracture should be properly immobilized. In the case of the upper extremity, this is easily accomplished by the use of splints. In fractures of the leg, a plaster-of-paris dressing is employed and the constrictor applied at its upper margin. To admit of the swelling and congestion at the desired point the plaster dressing is applied quite snugly, the part where the congestion is desired being either heavily padded with cotton or large fenestræ being cut in the dressing. In fractures of the femur the Buck extension is used, the flannel bandage and constrictor being applied as in the case of the humerus.

This method may be employed alone in cases of delayed union, but is only of use in the treatment of pseudarthrosis subsequent to some operative procedure. The time of its application after an operation depends upon the condition of the wound. As a rule it should not be applied until union of the soft parts has taken place, still small granulating spots offer no contra-indication for its use.

This method should not be used where there is any tendency to a varicose condition of the veins. Helferich says it will not produce this condition in normal vessels.

Helferich reports eight cases "in which at the time a fracture is usually healed there was very little or no callus." Six were fractures of the leg and two of the thigh. By the use of this method alone he accomplished a cure in each case in a few weeks. He also reports four cases—three of the leg and one of the forearm—in which it was employed subsequent to the nailing together of the fragments. All resulted in cures.

Six cases which were treated by this method have come under my observation. Four of these occurred in Volkmann's clinic at Halle, Germany, during my connection with that institution, and two in my own practice. Of the four hospital cases three were of the humerus and one of the radius. The fractures of the humerus were all healed, that of the radius was not benefited. One of the cases of fracture of the humerus was of particular interest in showing the utility of the method. The patient, a man about 40 years of age, had two years before sustained a compound fracture of the humerus which resulted in pseudarthrosis. Six months subsequently the ends of the fragments were resected and the bones wired together. His condition was not improved and in another six months the operation was repeated. He derived no benefit from the second operation, and at the end of a year returned to the hospital where, for the third time, the resection and wiring was done. As soon as the incision had healed the elastic constriction, as described here, was applied. In ten days a marked callus could be felt and a few weeks later he was discharged with the fracture firmly united.

A subsequent operation upon the case of fracture of the radius, mentioned above, revealed the fact

that there was a loss of substance of the radius and an interposition of muscle between the fragments. My own two cases were fractures of the upper third of the humerus. In the first, a young lady of 25, the constriction was applied four weeks after the injury. It resulted in no benefit. The case then drifted into other hands and I am unable to state the present condition of the arm. My second case was a youth of 20. Four weeks after the accident no callus could be felt. After a week of the above described treatment an abundant callus had formed and a month later he was discharged, cured.

These cases, together with those reported by Nicoladoni, Thomas and Jones,[5] where methods involving the same principle were used, indicate that in constriction and the resulting hyperemia we have a valuable adjunct to the better known methods of treatment in delayed union and pseudarthrosis.

1 Wiener medicinische Wochenschrift. 1875, p. 81.
2 P. Bruns, Die Lehre von den Knockenbrüchen, 1886, p. 597.
3 The Principles of the Treatment of Fractures and Dislocations, by H. O. Thomas, London, 1886.
4 Verhandlung der Deutschen Gesellschaft für Chirurgie, 1887, part II, p. 249.
5 Lancet, Oct. 28, 1882.

LOCAL TREATMENT OF PSORIASIS.

Read in the Section on Dermatology at the Forty-fourth Annual Meeting of the American Medical Association.

BY R. C. LONGFELLOW, M.D.
CINCINNATI.

Psoriasis stands in the front rank of those skin diseases whose course and duration is often chronic, accompanied by frequent relapses. This disease is one that often exhausts the medical man's storehouse of remedies, as well as his ability to keep the patient satisfied with his condition and treatment prescribed. One of the obstacles to proper local treatment is the usual objection of the patient to the remedies employed, their odor, staining qualities or ointment consistence. The essayist has no lauded specifics to offer, whose perfume or color charm the patient's nose or eyes, but desires to call out discussion on the few remedies which have been of any special value. Can these few remedies, whose objectionable features have been a vexed question, be dressed in new clothes that will give a less objectionable treatment to the patient? Can we use more agreeable remedies than the ones referred to, and hope to secure any favorable results or permanent cure? While this question is of lesser importance in hospital practice, to treat this disease successfully in private patients and yet not render them obnoxious to themselves or friends, is an important question. Some patients can bear with the scales,and keep from their friends the knowledge of their infirmity, yet the remedies prescribed by their medical adviser render them an object of inquiry. The object of local treatment is to macerate the scales, produce desquamation, and thus bring to the surface the hyperemic and diseased skin. In simple cases this can be done by hot baths—plain or medicated,—gentle friction, bland oils, or ointments rubbed in daily. These applications are allowed to remain for a few days, and then the skin is washed in a hot bath, with very mild friction by a cloth or brush. If the scales and patches are not large or extensive, they will yield to simple treatment, with free use of diaphoretics, covering the patches with oiled paper, and the maceration and desquamation will be sufficient. In the simple cases, the essayist has had excellent results with the daily use of a hot bath—a toilet soap composed of green soap, 75 parts; washed sulphur, 25 parts; oil rosemary, 1 part. It lathers freely, and gives a very cleansing and refreshing bath, exerting the desired effect on the scales. One of the obstacles to satisfactory local treatment is to get the patient to remain the proper length of time in the hot bath, which is invaluable in softening and removing the scales. The vaunted springs that have been supposed to be specific in psoriasis can exert no special effect on the disease itself, but the regulation of diet, beverages, food, exercise, long baths, copious drinking of the water produces the improvement ascribed to the springs. If the patient at home would follow his physician's orders as faithfully and willingly as he does the printed rules of the springs, his reward would be greater improvement and more permanent results. No better method of removing the scales in chronic or severe cases exists than green soap thoroughly rubbed on each infected patch, and allowed to remain and dry. Such applications should be made every morning for a week; if possible, keep the patient well covered in bed during these applications, and give diaphoretics. In three to five days considerable desquamation will occur; after a week the patient should receive a hot bath, gentle friction being used; the remaining scales will be removed, exposing the hyperemic skin beneath. When the patient will not submit to going to bed,or is compelled to be at daily duties, and we can not use green soap as indicated, a 10 per cent. solution of green soap in collodion can be painted on the patches twice daily. Such a solution can be made by first rendering the green soap anhydrous, dissolving in smallest quantity of absolute alcohol, then adding the collodion. This method is more agreeable to patients, being a trifle less active than when soap alone is used, but the same result is accomplished. This method of using green soap prevents it from being rubbed off or soiling the linen, as the patient engages in his daily occupation. The collodion gives relief from itching, nor does the crust produce itching when several layers have been painted on and hardened. The irritation that green soap produces on some tender skins is overcome by the collodion. These applications are made twice daily for a week; then the loose, dry crusts are removed, the remaining ones loosening and coming off by the hot soap bath, gentle friction being used by cloth or hands. When the scales have been removed, the hyperemic skin must be treated by a remedy that will have a curative effect. Many remedies have been suggested and used without any special degree of satisfaction. During the few minutes allotted to this subject, only the three remedies will be mentioned which have been of real service and most used at the present time namely, pix liquida, chrysarobin, and acidum pyrogallicum. These are disagreeable agents in the matter of odor, staining qualities and ointment consistence when prescribed in the usual way. In some patients the use of tar produces a febrile condition, the skin is irritated and looks as though a dermatitis would supervene. The method of using tar which is least objectionable the essayist has found, is to make a 15 per cent. solution in collodion. Each patch is painted every other day until four or five applications have been made, then the layers of collodion being removed, the patient is given a hot bath, after which the tar is painted on as before. The odor of tar is greatly re-.

duced in the collodion, and has the advantage over other methods in not being rubbed off or soiling the linen, yet loses none of its therapeutic effects. The irritation that tar sometimes produces is overcome by the local anesthetic effect of the collodion. Chrysarobin should be applied with caution and not allowed to extend beyond the area of the infected patch. It stains both skin and linen a yellowish color; frequently, even with caution, it will produce considerable irritation, or may have to be suspended. Applied once daily with care, the patches desquamate, the skin becomes of normal thickness and color, contrasting with the brownish color at the limit of the former patch. The method of Fox, to use chrysarobin combined with collodion, is the safest and least objectionable of the present modes of application. Infected patches should be painted once daily, or every two days, care being taken to limit its application only to the patch, as even when used most carefully troublesome irritation occurs in not a few cases. These applications, made for a week, should always be followed by a prolonged hot soap bath, while the general baths of non-infected parts should not be neglected. Pyrogallic acid, less active than chrysarobin, does not produce as much irritation of the skin as the latter remedy. In psoriasis of the head and face, pyrogallic acid is much better adapted for local treatment than chrysarobin, but if allowed to come in contact with the hair will stain. Too extensive or careless application of this agent has caused it to be absorbed, resulting in strangury, vertigo and vomiting. The safest and least objectionable of local applications to the head and face are salicylic acid in plaster or collodion, resorcin or aristol in ointment of roses.

Discussion.

Dr. Ohmann-Dumesnil remarked that treatment of psoriasis of the scalp, especially in women, can not be effectuated by the means recommended by the speaker, and therefore he uses oil of cajeput, which he finds very useful and of easy application.

Dr. Bulkley recommended the use of white precipitate and bismuth in form of an ointment. He does not advise to wash the scalp too often, but he anoints it twice a day with this ointment, in the following formula:

R. White precipit., Bismuth sub. carb., aa 3ss.
Acid carbolic, gtts. x.
Unguent. ammon. roset., ℥ij.
M. F. Unguent.

He believes, however, that 25 per cent. of the patients can be better cured by internal and hygienic means than with local treatment.

Dr. Frank is satisfied with the use of chrysarobin and pyrogallic acid, and with a salve consisting of ichthyol and vaselin.

PHYSIOTHERAPY FIRST: NATURE'S MEDICAMENTS BEFORE DRUG REMEDIES; PARTICULARLY RELATING TO HYDROTHERAPY.

Read at the last Semi-annual Meeting, in Ottawa, of the Rideau and Bathurst Medical Association.

BY EDWARD PLAYTER, M.D.
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OTTAWA, CANADA.

All through the records of the history of medicine—in the early Assyrian and Egyptian period, five or six thousand years ago, in the time of Æsculapius and of Hippocrates and down, as we find in modern uncivilized tribes, we have clear evidence that in the first or early steps in the science of medicine the practice of the art consisted for the most part in the employment of magical incantations, the laying on of hands, etc., and was apparently somewhat of the nature of modern hypnotism, acting through the mind, as if the chief reliance in the healing of disease was upon the natural living forces within the body. We are here reminded of the old saying that "God made man upright, but he hath sought out many inventions." Although Æsculapius in his practice, we are told, enjoined first of all a hygienic regimen, attention to the diet, strict temperance and absolute cleanliness by frequent ablutions, and although the temples that were afterwards erected in his honor were built in the healthiest localities and the patients in them treated upon like hygienic principles, including rest and pleasing impressions, yet so far as we know it was Hippocrates who, practicing in a similar way, first drew special attention to the inherent natural curative force within the body, which he termed phusis (*φνσις*) nature, the *vis medicatrix naturæ*, of late Roman writers; while he also recognized subordinate forces which he termed dunamics (*δνναγῖες*), relating more particularly to the various organs of the body. Moreover, in practice this father of medicine allowed these forces to pursue unmolested and uninterrupted their benign course; and he was in practice it appears remarkably successful. Coming down through the obscurity of the Dark Ages, to two or three centuries ago, we find the discerning Van Helmont advancing the theory of a more specific healing force or power within the body, different from that belonging to inanimate matter, and which he personified as the "Archæus," or "Grand Regulator," a sentient principle seemingly distinct from the corporeal frame, whose throne was the stomach; Wepfer designating a like power as the "president of the nervous system;" and the bold Stahl attributing such an influence "directly and entirely to the rational soul, diffused over the whole body." And while we still continue to pour in drug remedies as our sheet anchor in the treatment of disease, the schools especially wave before us, perhaps not now so much as a few years ago, the endless and ever increasing drug formulæ of the Pharmacopœia as the Alpha and Omega of resource in therapeutics, leaving us to find out for ourselves in practice, through years of most bitter, most destructive experience, the futility and danger of most drug remedies.

A Metchnikoff now rises up and displays before our wondering eyes, as it were, the *vis medicatrix naturæ* actually personified—certain living cells in actual combat with disease germs; while other investigators teach us that there is generated in the body and found in the blood serum, itself, a germicide more powerful than corrosive sublimate.

It is not my intention to make a tirade against drug remedies. Some of them are of undoubted value in certain diseases, although as Prof. Erb, of Heidelberg, says, of "chemical or internal remedies:" "Here we enter upon a very obscure field which needs thorough cultivation. We know almost nothing of it; the little which therapeutic experience has taught us is neither securely established nor in any way scientifically or intelligibly founded." But I would like to deliver a vigorous tirade against the practice of the text-book makers and of the schools giving these remedies first place, usually, instead of the last, in the Materia Medica.

Many years ago I suggested at more than one meet-

ing of the Canadian Medical Association that the profession in Canada take the initiative and appoint a committee with the view of inducing the profession elsewhere to join and cut out about nine-tenths of the Pharmacopœia—and to separate the few grains of gold in it from the enormous amount of what is practically dross.

I will just mention here a few points relative to some of the dangers which may arise from drug remedies. On the 13th of the present month the *British Medical Journal* gives the report of "An inquiry regarding the importance of ill effects following the use of antipyrin, antifebrin and phenacetin, by the Therapeutic Committee of the British Medical Association." I can only give two or three lines of the ten to eleven close columns of the report, as follows: "The list of ill effects noted with antifebrin is not only a very formidable one in itself, but it loses none of this character when we consider the frequency of their occurrence." True it is that, as regards the freedom from ill effects of the three drugs, antifebrin is third and last; phenacetin being first.

We must admit, furthermore, that ill effects from the administration of almost any drug may be considerable, even serious, and not be manifested even on close observation for a long period of time; just as we know is the case with certain kinds of food consumed. And when we think for a moment of the complex and intricate nature of the physiologic and vital processes going on within the human organism, or of the susceptible nature of the digestive ferments, for example, we can readily understand, theoretically, that the introduction into the body in any way of but a mere trace of some chemical product, even one regarded as mild in its action, may interfere with or disturb, little or much, the processes of nutrition, as well as other functions. The same may be said in respect to disturbing in like manner the natural healing processes,—to interfering with the formation of nature's germicide, for example, or with the vigorous action of the army of phagocytes. For do as we will or may, nature ever reserves for herself the maximum of power in the direction of the processes of healing. In the words of a paper by Dr. Von Dunhoff, in the *New York Medical Journal*, of a few months ago: "I submit that, however efficient as germicides certain chemical agencies may prove to be in the laboratory, the same impracticability attends them in their adaptation to clinical issues, and renders the effect of their use here either *nil* or mischievous, as is the case with respect to the effects of many of the so-called chemical preparations, presumably prepared with the nicest precision as supplemented ingesta, intended for the correction of certain qualitatively defective conditions of the blood and tissues; and unless the inherent residual *vis resistentiæ naturalis* vouchsafes recovery, no man has yet attained the means of compelling such an issue artificially.

Experiments have shown that mice under the influence of chloral contract infections more readily than mice not under such influence; the chloral probably depressing or embarrassing the action of the phagocytes.

The millionth part of a drop of blood from a rabbit affected with anthrax may communicate this malignant disease to a healthy rabbit. Possibly a much smaller quantity than the millionth part of a drop, say the four-millionth part, would not communicate the disease to the animal when it is in a natural vigorous physical condition. But who can measure the infinitesimal quantity of chloral for example or other drug which, having been first given to the healthy animal, might so depress the phagocytes in its blood as to enable the bacilli of the disease in the four-millionth part of a drop of the infected blood to come off conqueror, establish their colonies and the disease and destroy the life of the rabbit? Or who could weigh the mere trace of some of the depressing or soothing drug remedies commonly given in infectious pneumonia, or in the earlier or sthenic stage of some of the infectious fevers, which might possibly so interfere with the formation or action of the natural germicides in the body of the patient as to lessen the chances of recovery, or possibly to favor auto-infection?

Nor must we, moreover, meddle too far with benign nature even with our more natural remedies. No physician dare interfere with compensating hypertrophy of the heart in valvular disease. So in certain cases of epilepsy. In the works of Dr. Lyman, Professor of the Principles and Practice of Medicine, in the Rush Medical College, Chicago, in a recent address delivered before the Michigan State Medical Society on the "Limitations of Therapeutics;" "Though the paroxysms of the disease may have been suppressed and the patient apparently cured, or if not absolutely cured, greatly relieved for a long period of time, the patient will sometimes tell you that after all he would prefer not to continue treatment any longer. Not because dissatisfied with your methods or measures, but because he felt so much better when the disease was allowed to run its natural course, and because an explosion or convulsion at certain stated intervals seemed to give absolute relief, showing that the wisest and best therapeutic methods (or what appears to us to be the wisest and best) may nevertheless absolutely fail in giving to the patient that degree of comfort and satisfaction which we desire, but which nature knew how to bestow." So that it is sometimes better to bear the ills that we have than fly to others we know not of. True, if the cause or causes of the diseased state which gives rise to these explosive convulsions as a means of relief were first removed instead of the mere symptoms being treated, the result would be quite different.

Permit me, then, to mention in this connection, as a reminder, and we all need frequent reminders, the fact that, in the treatment of disease, there are two most important points to bear in mind: 1, to ascertain, if possible, by the most careful and thorough examination the cause or causes of the diseased condition or symptoms we are called upon to treat; and 2, to remove the cause or causes or prevent the recurrence of the same. Then, in very many cases, if we provide the ordinary essentials of health and life—pure air, water and sunlight, securing the utilization, through the respiratory organs of abundance of oxygen, with suitable food, clothing and rest, or it may be exercise, probably partial passive exercise, as in passive movements by another person or in massage, with the means of absolute cleanliness—abundance of water, dirt being so common a cause of disease,—then, usually, benign nature "will do the rest." Hence a very much larger proportion of the time given to the study of medicine should be devoted to the study of pathologic conditions and especially to the causes of these conditions.

The application of these natural remedies, the essentials of life, as above named, may be termed natural therapeutics. Or, if I may be permitted to coin from the Greek a new term, for I have never observed it in print, a term more in accordance with medical nomenclature than the words hygienic treatment, commonly used, I would suggest the term physiotherapy. Let us notice more in detail, yet briefly, a few of these therapeutic remedies.

Pure Air and Sunlight are recognized by everybody as being most valuable remedies and restoratives, but they are not nearly so often prescribed and administered therapeutically to patients as they might and should be, and before drugs. Were they costly remedies and not free to all they would perhaps be more commonly prescribed. Besides, many people do not know how to breathe in, and get the full benefit of pure fresh air with its life-giving oxygen. They make only partial use of their respiratory organs. I have tried the experiment of inducing patients who suffered from weak, inactive lungs and consequent general debility, to draw in more fresh cool air at each inspiration, to "eat the air," as the Hindoos have it, and from this prescription alone great improvement has followed.

The Diet being a common cause of bodily derangement and disease, we have in modifications of it and in feeding or fasting, a potent remedy. While many patients need feeding with a more nutritious or suitable, if not more abundant diet, many on the other hand require to let the digestive, nutrient and excretory organs rest by remaining in bed for a time and eating almost nothing—fasting. Regulation of the diet in these various ways has alone in my hands proved to be a very efficacious remedy.

A Complete Rest for the whole organism, in this rushing age, with feeding or fasting as indicated, probably a few days of fasting and many more of feeding, is not infrequently a prescription strongly indicated and much needed, and alone is often sufficient to restore health. And the "rest cure," as it is called, is becoming, as we know, a somewhat common practice. It is to be hoped it will not become too fashionable.

Mental Influence: Before noticing passive exercises and hydrotherapy, I may just refer to mental influence as a remedy. To this may be attributed the "miraculous cures," "we read about" occasionally; "faith cures" and the like. What physician has not witnessed the effects of mental influence exercised through the power of hope, in many cases of disease? Or of the power of a strong will in overcoming disease? I will allude to but one practical and direct example of the power of the mind over the body; that of defecation in constipation from a sluggish state of the lower bowel. Persistent concentration of the will upon the parts accompanied, not by straining but simply by the desire of action, will alone overcome many cases of habitual constipation. Massage will usually aid in producing and hastening the desired action.

Mention may be made, too, as associated with mental influence, of hypnotism with suggestion; not yet well understood nor generally recognized as a remedy.

Electricity is apparently destined to become an important remedy, and may also be regarded as a natural one, in the treatment of disease; especially as produced by friction or induction, usually termed static electricity. With its small volume and high degree of force in this form it has already produced highly satisfactory results. The nature of its action not being yet well understood, its use is necessarily empirical and it is a very bonanza for quacks. True it is that many of our most valuable remedies have been brought into use in this way. It has not fallen to my lot to have had much experience with electricity. Indeed with the other remedies at command I have never yet experienced the need of it; the electrical effects of massage usually sufficing.

In Kinesitherapy, passive local movements or exercises, as in massage and the manual or mechanical movements commonly termed Swedish, we have a most potent remedy in a large number of diseases. It is a remedy the action of which we can readily understand, regulate and control. While the practice of massage—kneading, rubbing, percussing or tapping, is rapidly coming into general use, the so-called Swedish movements, which are of equal if not greater value, seem not to be so generally practiced.

The effect of these passive exercises of the muscular tissue, by either massage or the more natural movements, while readily comprehended, are sometimes almost phenomenal. Diseased conditions are removed by substituting natural healthy action. They aid the natural forces in eliminating morbid or poisonous accumulations from the system. In all forms of dyspepsia, in dilatation of the stomach, when the muscular tissue is weak and inactive, in helpless cases of rheumatoid arthritis, even of several years standing, in curvatures of the spine and other deformities, and in paralysis of motion, no other treatment is so applicable and successful; when combined, I need hardly add, with other hygienic remedies, especially with abundance of atmospheric oxygen and proper food, and in rheumatism with the warm bath.

In relation to kinesitherapy, I will only add that, in all cases of muscular asymmetry, with the accompanying want of uniformity in action and vigor, a condition which is the forerunner or cause of many diseased conditions, especially as found in gynecologic practice, and in which ordinary exercise is not admissible, no other treatment meets the requirements so completely. As Dr. Kellogg, of the Battle Creek, Mich., Sanitarium, says in "Modern Medicine and Bacteriological World," in his "experience with several thousand cases, lack of muscular development is the cause of a great share of uterine and ovarian displacements," and a "substantial cure can not be effected by any other means." In the majority of cases the patients can not take general "exercise" themselves, and these partial exercises supply the want.

We now come to the last therapeutic agent to which I shall draw attention, and which, indeed, I regard as the most important and valuable of all—the common element, water, in its various forms of application.

When we consider the broad fact that many diseases, functional and organic, if indeed there be any distinction, are caused more or less directly by dirt, dirt outside the body or within it, we can at once comprehend the value of water as a therapeutic remedy, and in its simplest form of application—water in which to wash and be clean. I need hardly refer to its value, as confirmed by the highest authorities, in washing out, with copious water or salt and water

injections, the intestines in cases of cholera. I believe it would have an equally good effect in typhoid fever. Nor need I refer to its value when copiously swallowed in washing out the entire internal structure of the human body, to the minutest recesses among the tissues, as when the organism has become loaded with the *débris*—the dirt, practically—of the ordinary functions of life, which has accumulated in the fluids and tissues from want of proper hygienic care or habits. We know that it is now the opinion of many physicians that it is to the copious water drinking in most cases, much more than to any mineral ingredients in the water, that many of the popular "springs" owe their popularity. Persons suffering from excess of waste matters, and the poisonous substances arising from the decomposition of these, in the tissues and fluids of the body, impure blood, receive at the springs a complete wash-out—a flushing—a succession of internal baths; they are simply washed and made clean.

But water, it need hardly be said, has as a medicament a much broader application than is indicated in any of these pathologic conditions. Remarkable physiologic and therapeutic effects can be produced by the application of water in various ways and, on the whole, more safely and naturally than with drugs.

The only work in the English language which is not tainted with quackery, so far as I know, if we except the valuable treatise of Winternitz in Ziemssen's "Hand-book of Therapeutics," now practically out of print, is that on the "Uses of Water in Modern Medicine," by Simon Baruch, a physician holding many high positions in New York, which was published a year or so ago by Geo. S. Davis, of Detroit. If any of you are not in possession of this practical little work, I take the liberty of saying you should get it. It consists of two volumes of the "Physician's Leisure Library" series, and is very inexpensive.

Dr. Baruch makes this happy distinction between hydrotherapy and hydropathy: "The former accepting water as one important remedial agent; the latter regarding it as a universal remedy." To my mind, it is just about as Dr. Baruch further says: "While I emphasize my belief in all those drugs whose effects have been positively demonstrated in the laboratory and at the bedside, I espouse water as perhaps the most potent of all remedial measures; and upon the historical, physiological and clinical grounds succinctly set forth in the following pages," —*i. e.*, of his book. Again, he continues: "The history of water as a therapeutic agent is not only a most interesting chapter, but it affords the clearest demonstration of the instability of therapeutic propositions, and the manner in which prevailing ideas influence them. Although the literature of the subject is the most extensive published with regard to any remedy, recent works on therapeutics treat it with a decidedly stepmotherly regard; they dismiss it in a few beggarly lines, preferring to devote their columns to essays upon the action of remedies whose actual clinical value is, in most instances at least, problematical. The history of water teaches clearly that no other remedy has so creditably passed through vicissitudes of depression; and that despite professional and lay prejudice, it stands to-day unscathed and rendered secure against assault by the panoply obtained from physiologic and bedside results."

A few words here on the history of hydrotherapy will be both interesting and profitable. Hippocrates laid down rules for the treatment of disease by water, which even at this day are practiced by both physicians and quacks. Two and a half centuries later, Asclepiades, though it appears not possessed of much real medical knowledge, by his great natural ability and discretion attained eminence in Rome as a practitioner, depending almost entirely for his success on a judicious diet, massage and baths; by means of which he performed "miraculous cures." So warm an advocate was he of the water treatment that he was dubbed "Psychrolutus." Through Asclepiades hydrotherapy was popularized in Rome. He formed the school whence sprang Themison, Celsus and other eminent physicians. A pupil of his, Antonius Musa, restored the Emperor Augustus to health by the vigorous use of cold water; and he had Horace too for a patient. So grateful was the Emperor that he bestowed upon him and the whole medical profession the privilege of citizenship, and had a statue erected to Musa next to that of Æsculapius. Celsus, the "Latinorum Hippocrates," prescribed water freely; so did also Aurelianus, who originated the wet sponge abdominal compress for hypochondriacs. Galen was an advocate of cold water baths and was the first, it appears, to advise cold applications to the head while the body was immersed in warm water. We know but little relating to the history or practice of medicine in the many dark centuries which followed the time of Galen. Oribasius of the fourth century, Ætius of the fifth, Trallianus of the sixth, and Paulus Ægineta of the seventh, the most noted of their time, were all zealous Galenists and followers of his practice. Ægineta was an enthusiastic advocate of the use of water, and was the first to advise the cold douche in sunstroke. All the more eminent physicians of the next few centuries, during the more dense barbarism of Europe—Serapion of Damascus, Rhazes of Irak, Avicenna of Bochara, and Avenzoar of Seville, who, it is said, lived to the age of 135, appear also to have been disciples of Galen, following in his line of practice. Chemistry made considerable progress during that period, and there were many additions to pharmacy, and possibly but little water was used in any way until the dawn of the seventeenth century. The Hippocrates of England, Sydenham, holding the more enlightened view that diseased action consists essentially in a natural effort of the system to remove morbid or noxious products, his practice was, like that of Hippocrates, to assist nature. I can not learn that he relied much upon hydrotherapy, but a few years after his death, about the close of the seventeenth century, Sir John Floyer, physician, of Litchfield, England, published a "History of Cool Bathing, Ancient and Modern," a book which created an epoch in hydrotherapy, passed through six editions within a few years, and many years later was translated into German. Blair and Cheyne, English physicians of the highest standing, recognized hydrotherapy in their practice. The illustrious German physician, pathologist and clinical teacher, Hoffmann, was the first to distinctly recognize the influence of water upon the "tone" of the bodily tissues. After his time, during the eighteenth century, the use of water in medical practice became much more popular in Germany. The surgeon of Frederick the Great, Theden, was the first to use it in fevers, smallpox and rheumatism. He improved the shower bath and warmly advocated its use.

About this time, Hahn and his son and Oertel helped much to establish the principles of modern hydrotherapy in Germany, in both acute and chronic diseases. The work of the illustrious Currie, published in 1797, first placed hydrotherapy on a scientific basis, it appears. It advocated the use of water in gout and paralysis as well as fevers, and was translated into German and other languages. Although the practice of hydrotherapy was more popular in Germany than in England at this time, it is contended that it was by reason of translations of English writers, as Floyer and Currie. The practice of the latter was adopted in the Vienna hospitals. To mention the wise philosophic Hufeland as an enthusiastic and yet judicious advocate of hydrotherapy, as Baruch says, is to "give the imprint of true medical wisdom to it, and to indicate its wide adoption among the profession. He offered a prize for the best treatise on the action of cold water in fevers, determined by scientific thermometrical study." A Vienna professor was the successful competitor, whose treatise was published in 1823.

Notwithstanding all this, and more, hydrotherapy did not become generally popular until the time of the German farmer, Vincentz Priessnitz, who at his home in Grafenberg, Silesia, first received patients, enlarging his house as occasion required. In 1840 he had treated over 1,500 persons from various parts of the world, and twelve years later had amassed an immense fortune. "His success was brilliant because he was a careful observer, a good judge of human nature, and his mechanical skill enabled him to invent various technical modifications of the water treatment, many of which have been adopted by the profession and are still in use. A copious literature sprang up in all parts of the world, and many institutions were modeled after his. The government built roads to facilitate access to his establishment; monuments and fountains were erected to his memory. Physicians from all countries, who had been attracted to the mountain home, became converts to and missionaries of his practice." A few years later, Scoutitten, a French physician, after studying hydrotherapy in Germany, reported that, "the numerous permanent cures it has wrought recommend it," and it "lies in the interest of humanity and medical science that its practice in Paris take place under the eyes of able physicians." Magendie aided in the propagation of hydrotherapy by physiologic demonstrations. Fleury introduced douches, and explained his clinical successes on physiologic principles. Fever treatment as now practiced was initiated by Brand, who in 1861 published his startling results from immersions and compresses with water at 54 degrees to 68 degrees F. The practice was soon introduced into England by Wilson Fox.

Respecting the practice of hydrotherapy, as Niemeyer in his work on practice says: "A series of cases are on record in which complete and perfect cures have been obtained" by it, "after all other methods of treatment had been applied in vain." Dujardin-Beaumetz (lectures at l'Hôpital Cochin, 1887) said: "The benefits we obtain from cold water in the cure of disease arise from its physiologic effect upon the circulation, the nervous system, the nutrition, and from its revulsive and heat lowering influence." Prof. Peter, of Paris, in his preface to the great clinical work on hydrotherapy of Duval, writes: "Hydrotherapy suffices in most cases of disease; added to other treatment, it is a most powerful auxiliary." Prof. Erb, in his classical contribution to Ziemssen's Cyclopædia, writes: "To the most important and most active agents in the therapeutics of our field (nervous diseases) belong cool and cold baths, viz., the application of cold water in the most varied forms; that which is usually termed cold water treatment. Having been in recent times practiced more rationally and studied more exactly, it has attained remarkable prominence. Its results in all possible forms of chronic nervous diseases are extraordinarily favorable. If we add to this the heightened skin and muscular action induced by various methods of bathing, the influence of diet, etc., it becomes evident that we possess few remedies which produce an equally powerful effect upon the nervous system." Semmola, Professor of Therapeutics in Naples University (lectures, 1890), says: "Hydrotherapy stimulates cutaneous activity, and with it all functions of tissue change and organic purification, so that often real marvels of restoration in severe and desperate cases are accomplished. Unfortunately, these remarkable results are more rare to-day than they were in the time of Priessnitz, of which I was myself a witness." In all cases of retardation of tissue-metamorphosis, he says: "Hydrotherapy presents a truly rational treatment, and therefore unfailing effects, unless the local processes have reached incurable limits."

I could give many pages of such quotations from our highest authorities as to the value of water in the treatment of disease, but the above will suffice.

About a year ago, Ravighi, at a medical congress in Rome, read a paper respecting the effects upon the blood cells of the application of water, as shown by experiments he had made on men and rabbits. In March last, Prof. W. Winternitz, of Vienna, published (in *Cent. fur Klin. Med.*) a contribution on the same subject. Since that time, investigations by Dr. W. S. Thayer, of the Johns Hopkins Hospital, and more recently still, studies at the physiological laboratory at the Battle Creek Sanitarium, have verified the results of the other investigations. In "Modern Medicine" for December is a translation by Dr. J. H. Kellogg of another article, which had just been published by Winternitz (*Blat. fur Klin. Hydrother.*) on the same subject. All these show clearly that the application of water, apparently hot or cold, to the surface of the body produces an increase, sometimes large, in the red corpuscles, leucocytes and hemoglobin in the circulating blood. Winternitz reports: "The maximum increase of red blood corpuscles observed in fifty-six persons examined, was 1,860,000 per cubic mm. The maximum increase of leucocytes was to the extent of three times the ordinary number. The maximum amount of hemoglobin observed was 14 per cent."

At the late Pan-American Medical Congress in Washington, Dr. Baruch, opening the discussion relating to the value of cold water in asthenia, mentioned the astonishing effects of the cold douche. It rouses the circulation and "sets the wheels of life again in motion" in the very climax of this condition—with "thready pulse, shallow breathing, dull eye, picking at bed-clothes, subsultus, involuntary defecation,"— (*Therap. Gaz.*, January, 1894) in any febrile condition, scarlet fever, etc., which no known drug remedy, not even alcohol, will produce.

I will but mention, what some of you may not have read of (in Journal of American Medical Associa-

TION and *New York Medical Journal);* the Schott method of treating chronic heart disease by warm baths aided by muscular exercises. During the baths there is a reduced frequency of the pulse, with increased volume and strength and less irregularity. This effect is lasting, and a gradual amelioration of symptoms follows persistent treatment. It is said this treatment is applicable to a greater variety of cases than is Oertel's method. Schott medicates the baths by salines or carbonic acid; but their value is probably almost solely from the regulation of the circulation by the temperature of the baths. This I believe from personal experience.

Permit me in conclusion to say a very few words in respect to my own limited experience in the practice of hydrotherapy. In the latter part of my teens, having been a pretty hard working student, I was troubled a good deal with indigestion and a consequent want of good general health and vigor. In opposition to the wishes of my father, who was bitterly opposed to any semblance of quackery, and after having taken a good deal of medicine from the best physicians in the country, under pretence of visiting friends during holidays I placed myself under the care of a Mr. Brown, who had during the time of Priessnitz a popularity which it appears extended to the uttermost parts of the earth; and started a hydropathic establishment, or "Water Cure," in Newmarket, Ontario, near my home. Brown had but little medical knowledge and his failures probably outweighed his successes; but the "cold wet pack" or "sheet bath" and other forms of water application which he prescribed benefited me, and were the starting point of my faith in the value of water in literally washing away disease. During after years of laborious country practice, and many of them, although the want of available correct literature on the subject was a great drawback to me, I frequently availed myself of water as a remedy. Especially in copious draughts of it as a most certain and efficient diuretic and diaphoretic, directly unloading the cutaneous tissues and urinary organs, and through them in a large measure the entire body, of accumulated obstructing matters; as hot and cold compresses in local pathologic disturbances; as a tonic in the form of a cold sponge or shower bath; as a most soothing regulator of the entire organism in the form of a warm bath; and in other ways. Of one thing I feel certain; I never in my practice knew the free use of water to do any harm. This, neither you, I think, nor I can say of drug remedies. When weary and exhausted from riding all day and perhaps all night in the saddle or a two-wheeled chaise nothing, be assured, will rest and recuperate, soothe the irritated nerves and equalize the disturbed circulation like a warm bath, at a temperature of 93 or 94 degrees to 97 degrees F. Having spent many an hour reading in such a bath, I speak from personal experience. And now, largely as a consequence, when not very far from being 60 years "young," I feel better, more vigorous, youthful and clear headed than when at half the age. The warm bath has a high reputation, too, for warding off the effects of age. There is no other remedy so refreshing and invigorating. Thus Minerva is said to have imparted renewed vigor to the wearied limbs of Hercules. And over two thousand years ago, Hector's wife prepared warm baths that "returning from the fight," at Troy, "Hector might be refreshed."

. . . "Not yet the fatal news had spread
To fair Andromache of Hector dead;

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"Her fair-haired handmaids heat the brazen urn
The bath preparing for her lord's return."

SOME THINGS THAT SHOULD NOT BE FORGOTTEN BY THE GENERAL PRACTITIONER.

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In a previous communication under this heading, I endeavored to bring out a few salient points of interest to the general practitioner. It is my present purpose to emphasize a few minor points that often escape the notice, but which should have the due consideration of the entire medical profession.

The first item of general interest that presents itself to my mind, is the patent medicine fake. It is passing strange that this great evil should be allowed to assume such wonderful proportions in this advanced age of civilization and superior education. It is no less strange that laws have not been enacted to abolish an evil whose deleterious effects upon the constitutions of its victims are so apparent to every observing mind. How preposterous the idea seems for an intelligent being to take into his stomach a mass of things that he knows nothing *under heaven* about, except through the flattering, false description that he reads in a newspaper, whose editor knows no more about it than he does about the function of the vermiform appendix. This evil is gradually assuming greater proportions every year, and I must frankly say it is a *burning disgrace* to our boasted civilization, as well as to the medical profession, that such is the case. It is *high* time for us to act in the matter. As conservators of the public health, and well-wishers of our fellow-mortals it is our duty to take the initiatory steps toward stamping out this great destroyer of human health and impoverisher of the sick poor. It is no strange sight in these times of financial depression, to go into a well-to-do household and see in some secluded corner or on the pantry shelf, a dozen or more empty bottles that bear the obnoxious titles or trade-marks of as many varieties of nostrums, such as "Dr. King's New Discovery for Consumption," "Chamberlain's Cough Remedy," "New Great South American Kidney Cure"—that cures all forms of kidney disease in six hours. These are but historic guideposts to the physician as he enters an adjoining room and there beholds the victim of these empty nostrum bottles, lying on his sick bed nigh unto death's door. During the brief intervals of coughing and attacks of short breathing, the dying man begins his tale of woe, by telling of his neglected bad cold, and then of the newspaper accounts of "Chamberlain's Cough Remedy" that his neighbor Brown told him to get for his cough; not getting any better, he tries several bottles of "Dr. King's New Discovery for Coughs and Consumption." He next tells about his first night sweats, which occurred some weeks previous, and of their weakening effects. After trying the last named medicine some time and finding no relief, he decides that his kidneys are diseased, as his urine has become more scant and his night sweats more profuse; hence he tries several bottles of the "New South American Kidney Cure" which his druggist recommended to him through his oldest son, John,

and sent him several papers containing a full description of its magical effects in curing all kidney diseases in the short space of six hours. Ere he could finish his tale of woe, the dark shadows began to hover about his placid brow, and while his trembling lips were growing pallid, the curtain was drawn and death claimed the old man as a victim of patent medicines. This is but an illustration of what, too often, occurs under the observation of the general practitioner. Now let every physician who feels any pride in his profession, and who has a spark of genuine sympathy for the well-being of his fellow-creatures, resolve to put forth his best effort in his own community to get laws enacted, by our Legislatures, by which the human family may be spared the penalty of this popular (?) curse. Why not follow the example set by the State of Iowa? This State passed an Act recently, requiring all firms that sell patent medicines in that State to have the formula plainly printed and labeled on each bottle that is offered for sale, under a heavy penalty, in case of violation. This will enable the physician to judge as to the merits or demerits of the contents of the bottle. And, inasmuch as these preparations have no merits, it is reasonable to suppose their vendors will not submit them to this test, hence will stop their sale in the territory that requires these restrictions.

One of the fertile sources of this evil, as it now exists, is the counter-prescribing druggist, whose desire for "filthy lucre" crowds out all other considerations. It is no uncommon occurrence, in this fast age, for a druggist to assume the role of doctor, and undertake to treat private cases who are too ignorant and penurious to employ a regular physician, and as the *wise* (?) druggist indicates a willingness to undertake all such cases, the physician is thus deprived of his licensed privilege. The counter-prescribing druggist will also show his want of respect for the medical profession by advertising his "cure-alls," such as *his* "chill pills" (for malaria), "dinner pills for the digestion," etc.

Now, what shall we, as regular practitioners of medicine, do, in remedying such discrepancies? After mature and deliberate consideration, I have come to the conclusion, that the best and only way out of these embarrassing difficulties, is simply and plainly for every general practitioner who feels so disposed, to fill his own prescriptions at his office. This may seem to some a very ludicrous and selfish idea; but to me, it seems the only alternative by which to keep our noble profession independent and free from the blighting intrigues and contaminating influences that are making such rapid inroads upon her domain. I do not mean to reflect upon the true, gentlemanly, professional druggist, who would disdain to stoop to such low and unprofessional acts. Hence, what I have said applies only to the counter-prescribing and patent medicine-advertising druggists, and it is to the detriment of both professions that there is such a large percentage of this latter class of druggists. Like unto our own profession, there are many "crooks" and unprofessional men, who should be shown up to the profession in their true colors.

And just here let me call to mind the terrible fact that we have men in our profession who, from lack of medical knowledge, have allowed themselves to get into the habit of prescribing and indorsing patent medicines. In talking with a druggist on the humbuggery and imposition practiced on the ignorant public in the sale of patent medicines, I was astounded when he told me that several of my brother physicians had been prescribing some of the patent medicines he kept in stock. Just think of a physician prescribing for a sick person something that he knows nothing about!

While we are looking so carefully after the health and interests of the public we must not lose sight of our own peculiar interests, but ever be watchful of the malignant diseases, like the eating cancers, that are constantly threatening the vitals of our profession. Whenever a physician becomes too negligent and careless to prescribe well-known and tried remedies for the relief of suffering humanity, he then becomes a *nonentity* to the profession.

If you will pardon the digression, I will give you the benefit of a ridiculous yet practical, anecdote a brother practitioner related to me about his ludicrous experiment with a patient who was very fond of taking patent medicines. The Doctor stated that his patient was one of those chronic grumbling fellows who had lost faith in doctors, and as a last resort made up his mind to try patent medicines, and asked the Doctor if he knew of any *special one* that *might* suit his case. The Doctor told him to return to his office in the course of two or three days, when he would have something that would suit his case precisely. He then secured half a dozen large bottles and, after having them filled with *stale horse urine*, went to a drugstore and in a sly way secured a lot of old surplus patent medicine labels. He took the labels to his office and pasted them on the six bottles of *stale horse urine*, carefully adjusting the patent medicine wrapper, containing a glowing description of the magical effects of the medicine, etc., and set them aside for his patient. The following morning the patient called, and asked the Doctor about the expected medicine. He was given one of the bottles and told to take the medicine in tablespoonful doses three times daily, before meals (according to the printed directions on the bottle). The patient returned after taking the first bottle and told the Doctor that he thought he had struck the right medicine at last, adding that he was improving very fast, and his appetite was better than it had been for the previous six months. Suffice it to say, he paid for the six bottles and ordered a half dozen more. The Doctor informed me that his patient got entirely well under his novel treatment and paid him ten dollars for the dozen bottles of *stale horse urine*.

This is a practical illustration of the patent medicine fake of the present day.

A physician can fill his own prescriptions at his office very effectually and successfully to both himself and patients, and this will prove a means of self-defense in our warfare against counter-prescribing druggists and the patent medicine fake. Go back with me to the days of Galen, when drugstores were unheard of, and patent medicines were not dreamed of; or, if you please, to the more recent time of McDowell, when it is said that doctors made as much clear money from the sale of their medicines at their offices, as the general practitioner makes at the present day from writing prescriptions. There were but few prescription drugstores then, and these were confined to the larger cities, hence the doctors ordered their medicines in large quantities from the cities.

And just here, let me say, there were no patent medicines on the bill of drugs ordered by the medical men of that day. The medical man was honored for his worth, and the medical profession was free from the intrigues and trickery that curse it at the present day.

What is there to hinder a general practitioner from having a special apartment arranged in his office for the express purpose of keeping all the standard medicines that are in daily use, and also, have his prescription desk, printed labels, bottles, boxes, etc.; in short, all that constitutes a regular outfit for his business? Will it not more than pay? Will he not get the druggist's 50, 100, yea, 250 per cent. on his outlay? I answer, Most assuredly. Any physician, who wishes to do so, can get the very same rates on medicines from the large wholesale drug houses, that the druggist gets. I know whereof I speak, as I am experimenting along this line. Take, as an illustration, the syrup of hydriodic acid, which costs the druggist $3.50 per gallon, or 2¾ cents an ounce. He sells a four ounce bottle of this to a patient for 50 cents. Now, allow for cost of bottle, label, work and medicine, say, 15 cents. He thus clears 35 cents. Take Fowler's solution of arsenic, which costs the druggist just 20 cents a pint, or 1¼ cents an ounce. The druggist will sell an ounce to a patient at from 25 cents to 40 cents. Now, why should not the doctor have a share in this immense profit, regardless of the claims of the counter-prescribing druggist?

These are plain *hard sense* facts, and worthy the consideration of all general practitioners of medicine who wish to rid the profession of some of the obstacles and chicanery that are damaging our honor and lowering our standard.

SELECTIONS.

THE USE OF TRICHLORACETIC ACID.

BY DR. STANISLAUS v. STEIN,
PRIVATDOCENT IN THE MOSCOW UNIVERSITY, MOSCOW, RUSSIA.
Translated, and read before the Milwaukee Medical Society, May 8, 1894.
BY H. V. WÜRDEMANN, M.D.
MILWAUKEE, WIS.
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[Since the publication of Gleitsmann's articles[1] upon the use of trichloracetic acid two years ago, I[2] have been in the habit of using this application in much the same manner as is recommended in the following translation of an article by Dr. v. Stein. In some thousands of applications I have yet to learn of re-active inflammation or erysipelas following its use. It renders potential cauterization safe even when abundant causes of infection exist, and galvano-cauterization, in conjunction with the after application of trichloracetic acid, may be resorted to with impunity where otherwise we would dread the possibility of septic infection. In several instances where I have neglected its use I have had severe reactive inflammation and in two cases facial erysipelas after potential cauterization, but have always had uniform rapid healing where it has been applied. The same may be said of its use as indicated by the author after chromic cauterization, which I have now used with satisfactory results for over one year.—H. V. Würdemann.]

(The following is translated from Dr. v. Stein's article in the *Monatsschrift für Ohrenheilkunde*, January, 1894):[3]

The excellent caustic and astringent qualities of trichloracetic acid upon mucous membranes, which I first wrote about in a previous article (1889), have since been corroborated by a number of observers. Some additional good therapeutic properties of this acid which I have had occasion to note during the last two years have been little, if at all, considered by others.

1. I showed in my first article that a solution of trichloracetic acid of the strength of 1:500–2000 kept all suppurative processes in abeyance for a week. Therefore I recommended the same to cure acute rhinitis in the first stage, to secure disinfection of the eschar after galvano-cauterization and after bloody operative procedures.

In coryza I have noticed that a half teaspoonful of a 1 per cent. solution dropped lukewarm in either side of the nose, two to four times a day, produced an abundant secretion of mucus and improvement of the subjective symptoms. Since using this as a prophylactic method, I have seldom observed consecutive ear inflammation in those patients who usually had the same during the fall and spring of the year. I would explain this favorable result both by the anti-bacteriologic action of the acid and by the imprisonment of the microörganisms in the coagulated secretions. Accordingly, I sought for other agents more stimulating to the mucous membranes of the nose, and found a satisfactory one in uranium acetate.

℞. Uranii acetici 0.05
Aquæ dest 10.00
M. S. A couple of drops lukewarm in each side of the nose two to three times a day.

2. Weak solutions of trichloracetic acid used in the nose in simple atrophic rhinitis for a considerable time sometimes produce such a decided hypertrophy of the turbinated membranes that it may become necessary to cauterize them in order to secure free breathing. No other medicine of which I am cognizant produces such a remarkable effect, and thus this agent is particularly applicable in the treatment of ozena.

3. In true ozena I now apply much stronger solutions than I did at first; *i.e.*, ½ to 10 per cent. The odor is not so quickly nor so safely abolished by any other medicinal agent as by the acid. Here it is certainly a specific. Sometimes I combine it with iodin (glycerin-kalii-iod. pur.), especially in syphilitic cases.

For the best results it should be applied in the following manner: I begin with a weak solution, 1 to 2 per cent., and use this so long as there is improvement, and afterward using the stronger solutions. It is not proper to begin with a strong solution, as at first many patients are unable to bear them. In many cases the fetor is stopped in a couple of days.

For the application I use a probe 20 cm. long and 2½ to 2 mm. thick, which is grooved on each end. One of the ends is bent in order to get under the turbinated body better. Upon one of the grooved ends hygroscopic cotton is wound in the form of a bead. For each application a small amount of solution is *dropped* upon the probe, and in this manner the other portion of the solution is kept pure. The hardest part of the treatment lies in thoroughly but gently massaging the medicine into all parts of the

[1] "A New Method to Lessen Reaction after Galvano-Cautery," Gleitsmann in Annals Ophth. and Otol., January, 1892.
[2] "Cauterization in Hypertrophic Rhinitis," Würdemann in Annals Ophth. and Otol., July, 1892.
[3] "Ein weiterer Beitrag zur Anwendung das Acidum trichloraceticum," Von Stanislaus von Stein, Monatsschrift für Ohrenheilkunde, Jahrg. xxvii. No. 1. Berlin.

nasal passages, and to continue this method until the crusts no longer form. This procedure is done at first two or three times a day, if it causes no irritation. As soon as the fetor is removed and the crusts are softened it should be applied once a day. In a couple of visits, under the direction of the physician, the most uneducated patient learns the necessary manipulations. Hemorrhage is readily stopped by cotton wool tampons. Zinc ointment or ordinary vaselin may be used in the anterior nares of those patients with delicate skin or tendency to eczema.

By the above described treatment, the fetor is always controlled in my patients; the crusts are softened, are without odor, and are easily blown out of the nose. In many cases the procedure should be repeated once a week to guard against a relapse. In none of my cases did the odor return.

4. If a little white of egg or blood serum be precipitated by chromic acid, and another portion by trichloracetic acid, and the coagulum well washed with water to remove the excess of the acid, it will be remarked that the albumen treated by trichloracetic acid forms a tough membrane while the other is readily broken into pieces.

Upon being kept in Petri's cups, a putrid odor soon arises from the chromic albumen, while the acetic albumen becomes covered over with a moldy scum without odor. In the last case, the putrefactive germs, except when inoculated in a mass, have an unfavorable environment for their development. From this observation I was brought to use trichloracetic acid for disinfection of operations in the nose, the naso-pharynx and pharynx, in order to procure in this way assured antisepsis. I have used this method in a number of thousand of cases in private practice and the out-patient department of Prof. Osbroumoff's clinic of Moscow, Russia, and always with satisfactory results, in that the subsequent history was free from fever and that the wounds heal quickly without infection, even in those persons in whom the opposite had been previously observed. Only one very nervous student, out of all the patients, complained of chills after the cauterization. Before this, I often had consecutive tonsillitis and feeling of stoppage in the ears after galvanic or chromic acid cauterization of the posterior parts of the turbinated bodies.

Accordingly, after cutting operations, I usually put a crystal of trichloracetic acid on the edges of the wound, but use it in a different manner upon the galvano-cauterized surface. In the latter instance the burnt part is divested of its water so that the crystals do not liquefy except upon the edges of the burn. I apply here a strongly concentrated solution, (as this acid is very hygroscopic, if the cork of the bottle containing crystals be kept open for a few hours such a solution may be obtained.—*Trans.*)

The end of a silver probe one mm. thick is wound about with a little cotton, wet with the solution and applied several times to the spot. The eschar becomes snow-white and closely adherent. The course of such a galvano-cauterization is without reaction like that of ordinary trichloracetic cauterization. The slight pain resultant is of shorter duration though a little sharper than that of chromic acid or the galvano-cautery. Trichloracetic acid is given the preference indisputably by many observers for all other effects. After the scab drops off, the wound should again be disinfected.

The same satisfactory results follow chromic acid cauterization followed by application of trichloracetic acid. I must here speak of a peculiarity. If the nasal membranes are but lightly touched by a chromic acid crystal or the concentrated solution, and the superfluous acid removed by a pledget of cotton and the spot again treated by trichloracetic acid, a deep groove may be made similar to that obtained by galvano-cauterization. The reaction is also but little. The application of the two acids is to be particularly recommended in the case of young children.

Trichloracetic acid may be used alone when the hypertrophy is not great. The most satisfactory results are obtained when the areas to be cauterized are weak in elastic tissue. For this reason, turbinated hypertrophies eligible for this treatment are those which are readily contracted by cocain. For greater degrees of thickening, the results are more quickly obtained by the galvano-cautery combined with trichloracetic acid. Acetic acid alone gives less satisfaction in these catarrhs characterized by loose hanging hypertrophied membranes with very abundant flow of mucus, (several handkerchiefs a day) such as is common in children. This may be explained by the fact that the acid becomes weakened by the reaction and loses its (caustic) properties. Chromic acid gives the same result and the secretion may only be controlled by energetic galvano-cauterization, followed by the trichloracetic acid application.

I take away polyps and polypoid growths by the galvano-caustic loop and afterwards apply acetic acid. For experiment in several patients, the cauterization was done in one side of the nose, and omitted in the other. In these cases the patients complained of an unbearable pressure on the one side of the nose (not so treated) occasional pains and abundant flow of irritating mucus.

5. An important factor in the use of trichloracetic acid is that after its use no adhesive inflammation of neighboring portions follows, such as often occurs after chromic acid and galvano-cauterization. This kindly action has allowed me to use the galvano-cautery with after-application of trichloracetic acid upon growths of the nasal septum in very narrow noses without danger of adhesion, in order to pass in the Eustachian catheter, and also to blow out pus deposits from the antrum of Highmore and the frontal sinus.

The results in inflammations of the pharynx are similar to those obtained in the nose. In deep infiltration of the membranes, trichloracetic acid acts superficially and slowly. In other forms, healing is quickly obtained. In follicular tonsillitis following upon acute inflammation the swellings are reduced to their former size after two or three cauterizations. In those lacunar tonsillites in which considerable pus is contained deep in the tonsillar crypts, and in which exacerbations occur every few months or in some cases at intervals of years, I carry the trichloracetic acid crystal upon a fine bulbous-ended and cupped silver sound deep into the crypt. When the mouths of the crypts are greater, I take a fine silver canula three mm. thick in which is contained a piston-like wire with a couple of rings for the fore and middle fingers. To use this pistol-shaped instrument the wire is drawn a little way in and a couple of the crystals laid in the lumen of the canula. Then the bent end is inserted deeply but gently into the crypt and the wire pushed with the thumb on the button.

The entire manipulation, even without cocain, is painless as long as the application of the acetic acid is limited to the tonsil. The application is renewed after the disappearance of the white eschar. The healing is most happy. The submaxillary glands diminish in size and become indolent.

In an old hypertrophic tonsillitis, pharyngitis granulosa and retro-arcualis with proliferation of connective tissue, galvano-cauterization followed by application of trichloracetic acid is most applicable. The result is always recovery without fever and without reaction. Only during the same day is there difficulty in swallowing.

The application of trichloracetic acid in the ear is painful but is of use for small granulations. For these cases I recommend resorcin. Chromic acid is better for larger polypi. When its use is followed by a highly putrid discharge this may be rendered odorless by touching the scab accurately with a concentrated solution of trichloracetic acid. In order to protect the walls of the meatus from harm, it is necessary to smear it well with vaselin and to push in the ear speculum deeply. The excess of acid should be washed out.

(The translator has never used trichloracetic acid in the ear on account of severe neuralgic pain thereby produced. Polypi and other growths are better removed entire than to be slowly burnt out by acids.)

Dr. v. Stein here describes a set of five fenestrated nose specula of different lengths, the use of which is hardly necessary for any one skilled in exact manipulation. Gleitsmann's applicators for the crystallized acid, and the bent probe or Bosworth applicators wound on the end with a minute quantity of cotton, used under strong illumination by the forehead mirror, the nares opened by the dilating hand speculum, are all that are required in educated hands.

805 Grand Ave.

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Butt, R. L., Midway 1879
Caldwell, Groves, James P. O 1889
Cochrane, J., Montgomery 1884
Crampton, O. L., Mobile 1872
Cunningham, W. M., Corona 1893
Davis, W. E. B., Birmingham 1885
Fessenden, C. L. D., Mobile
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Furnies, J. P., Selma 1879
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Hatchett, J. R., Athens 1891
Hayes, R. H., Union Springa 1890
Hogan, S. M., Union Springs 1885
Ketchum, Geo. A., Mobile 1880
Sanders, W. H., Mobile 1890
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Shivers, O. L., Marion 1887

ARIZONA TER

Collins, T. S., Globe 1894
Hughes, H. A., Phœnix 1885
Ward, W. H., Phœnix 1882

ARKANSAS

Bentley, Edwin, Little Rock 1889
Breysacher, A. L., Little Rock 1873
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Christian, D., Springdale 1885
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Davis, Chas. E., Eureka Springs 1892
Dibrell, J. A., Sr., Van Buren 1890
Dibrell, J. A., Little Rock 1875
Dunlap, A., Winslow 1885
Enders, R. M., Little Rock 1892
Ewing, D. C., Batesville 1880
Floyd, R. G., Eureka Springs 1877
Gibson, L. P., Little Rock 1885
Guthrie, A., Jr., Quitman 1890
Hancock, J. L., Argenta 1893
Hay, Eugene C., Hot Springs 1892
Holland, T. E., Hot Springs 1893
Hooper, P. O., Little Rock 1875
Horner, A. A., Helena 1893
Hudson, I. G. W., Camden 1885
Hudspeth, J. W., Little Rock 1891
Jelks, Jas. T., Hot Springs 1882
Jelks, L. A., McCrory 1892
Jennings, R. G., Little Rock 1869
Keller, J. M., Hot Springs 1885
Lawrence, W. B., Batesville 1879
Lenow, Jas. H., Little Rock 1875
Linthicum, D. A. Helena 1873
McAlmont, J. J., Little Rock 1883
McGavock, F. G., McGavock 1883
Meek, E., Argenta 1884
Minor, Jas. C., Hot Springs 1884
Moulton, H., Fort Smith 1891
Murrell, T. E., Little Rock 1877
Orto, Z., Pine Bluff 1885
Pendleton, P. H., Pine Bluff 1892
Prather, D. J., Little Rock 1885
Sanders, A. F., Hot Springs 1885
Shibley, J. S., Paris 1885
Southall, Jas. H., Little Rock 1893
Vance, A. J., Harrison 1885
Watkins, C., Little Rock 1882
Watkins, J. M. Little Rock 1886
Welch, W. B., Fayetteville 1873
Witherington, W. J., Paragould 1891

CALIFORNIA

Adams, J. S., Oakland 1894
Anderson, W., San Francisco 1890
Arnold, J. D., San Francisco 1892
Ayer, Washington, San Francieco 1893
Baldwin, Wm. H., Sacramento 1887
Barber, R. D., South Riverside 1882
Bard, Cephas L., Ventura 1894
Barker, Adolph, San Francisco 1893
Bassett, M. F., San Jose 1864
Beebe, Charles E., Woodland 1894
Belknap, L. J., St. Helena
Bellamy, B. C., Covelo 1892
Bowles, G. R., Napa 1893
Brainard, H. G., Los Angeles 1885
Briggs, Wm. Ellery, Sacramento 1894
Briggs, Wallace A., Sacramento 1891
Brown, Philip K., San Francisco 1894
Browning, C. C., Highland (Messina) 1894
Buxton, G. Edw., National City 1894
Casal, F. M., Santa Barbara 1880
Chipman, M. M., San Jose 1876
Clark, Edw. S., San Francisco 1892
Cluness, W. R., Sacramento 1871
Cooper, C. N., Campbell 1880
Cowles, Josiah E., Los Angeles 1894
Davis, G. W., San Francisco 1890
Davisson, J. H., Los Angeles 1887
De Szigethy, C. A. H., Los Angeles 1877
De Vecchi, P., San Francisco 1894
Dodge, Wm. Los Angeles 1894
Ellinwood, C. N., San Francisco 1893
Ellis, H. B., Los Angeles 1893
Fenn, C. M. San Diego 1885
Foote, E. N., Lockeford 1892
Gibbons, Henry, San Francisco 1893
Gordon, Wm. A., San Jose 1894
Hanson, Geo. F., San Francisco 1894
Harris, S. M., N. San Juan 1892
Hearne, J. C., San Diego 1880
Hirschfelder, J. O., San Francisco 1893
Hopkins, W. E., San Francisco 1894
Hunt, R. M., Nevada City 1894
Huntington, I. W., Sacramento, ... 1891
Hurley, James M., San Bernardino 1894
Jones, Albert M., Redlands 1888
Jones, H. Isaac, San Francisco 1873
Kerr, Wm., San Francisco 1893
Kleruiff, B. F., Los Angeles 1882
King, C. L., Lamanda Park 1892
Knox, S. B. P., Santa Barbara 1894
Kreutzmann, H., San Francisco 1894
Lane, J. R., Sacramento 1893
Lane, L. C. San Francisco 1871
Lascher, G. W., Los Angeles 1893
Lewis, W. M., Los Angeles 1888
Lindley, Walter, Whittier 1892
Livingston, J. L., Los Angeles 1892
MacMonagle, B., San Francisco 1892
McAllister, W. L., Pasadena 1886
McLean, R. A. San Francisco 1893
McNutt, W. F., San Francisco 1882
Maynard, H. H., Los Angeles 1889
Miller, J. H., Redding 1889
Miller, R. E., Napa 1893
Mentgomery, D. W., San Francisco 1894
Norris, Basil, San Francisco 1894
Orme, H. S., Los Angeles 1882
Parkinson, J. H., Sacramento 1884
Paulding, O. P., Santa Maria 1882
Payne, F. H., Berkley 1884
Phelan, Gregory J., San Francisco. 1894
Pinkerton, I. H., Oakland 1881
Pischl, Kaspar, San Francisco 1894
Plummer, R. H., San Francisco 1885
Powers, G. H., San Francisco 1894
Remondino, P. C., San Diego 1890
Reynolds, G. P. Alameda 1886
Richter, C. Max, San Francisco 1894
Rigdon, R. L., San Francisco 1893
Rixford, E., San Francisco 1894
Robertson, E. B., Jackson 1894
Rosenstein, J., San Francisco 1894
Ruggles, C. A. Stockton 1890
Rumbold, T. F. San Francisco 1874
Sanderson, H. E., San Francisco 1894
Sherman, H. M., San Francisco 1894
Shurtleff, G. A., Stockton 1871
Simmons, G. C., Sacramento
Simmons, G. L., Sacramento 1871
Simonton, A. C., San Jose 1884
Somers, G. B., San Francisco 1893
Stuart, A. McG., Santa Rosa 1885
Taylor, A. M., Oakland 1892

Thrasher, Marion, San Francisco 1892
Todd, F. W., Los Angeles 1879
Tyrrell, G. G., Sacramento 1881
Tyrrell, G. G., Jr., Wheatland 1893
Voorhies, Alfred H., San Francisco 1894
Wadsworth, C. C., San Francisco 1893
Wagner, H. L., San Francisco 1892
Ware, C. D., Pokegama
Welges, L., Woodland 1886
White, G. A., Sacramento 1887
Wills, Wm. L., Los Angeles 1894
Wills, W. L., Los Angeles 1893
Wood, T. D., Stanford University 1894
Woolsey, E. H., Oakland 1882
Wright, Jno., San Jose 1869
Wright, H. J., San Jose
Wyeth, Joseph H., Oakland, Cal.

CANADA

Ferguson, A. H., Winnipeg, Manitoba. . . . 1893
Hobley, Thomas, Amherstburg, Ont 1892

COLORADO

Arnold, W. W., Colorado Springs 1883
Bane, Wm. C., Denver 1889
Bates, Mary E., Denver 1893
Beshoar, M., Trinidad 1874
Bucknum, A. M., Denver 1877
Campbell, W. A., Colorado Springs 1893
Carlin, P. V., Denver.
Case, A. S., Denver 1883
Clark, J. K., Denver 1880
Davis, W. C., Denver 1893
Davis, W. H., Denver 1893
De Beque, W. A. E., De Beque 1893
Denison, Chas., Denver 1875
Dodge, H. O., Boulder 1877
Dorland, W. L., Pueblo 1883
Dunwoody, J. A., Colorado Springs 1889
Eldridge, E. F., Grand Junction 1885
Elsner, Jno., Denver 1871
Eskridge, J. I., Denver 1893
Fleming, C. K. Denver 1893
Foster, J. M., Denver 1892
Graham, J. W., Denver 1886
Grant, W. W., Denver 1873
Hall, J. N., Denver 1891
Hawes, Jesse, Greeley 1882
Horo, Thos. G., Colorado Springs 1890
Jeffery, A. F., Denver 1892
La Mond, Robt. F., Denver 1893
Law, G., Greeley 1892
Levy, Robert, Denver 1889
McDermith, S. T., Denver 1881
Munn, W. P., Denver 1892
O'Connor, J. W., Denver 1885
Robinson, A. J., Aspen 1892
Schenck, W. L., New Castle 1877
Seaman, M. W., Denver 1884
Solly, S. Edwin, Colorado Springs 1889
Stedman, A., Denver 1887
Tucker, B. St. George, Colorado Springs . . 1886
Waxham, F. E., Denver 1886
Yoakum, F. E., Denver 1888

CONNECTICUT

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Alton, C. D., Hartford 1891
Bacon, W. T., Hartford 1893
Barnes, J. S., Oxford, ...
Barnes, L., Oxford 1883
Bishop, T. H., New Haven 1865
Bonton, Geo. B., Westport 1893
Braman, F. M., New London 1884
Brayton, Chas. E., Stonington 1889
Carrington, Chas., Farmington 1872
Castle, F. E., Waterbury 1880
Crothers, Thos. D., Hartford 1888
Davis, E. H., Plainfield 1884
Davis, G. P., Hartford 1880
Day, Loren T., Westport
Dunham, M. V. B., Greenfield Hill 1891
Eliot, G., New Haven 1884
Fox, Chas. J., Willimantic 1880
Fuller, H. S., Hartford 1884
Garlick, S. M., Bridgeport 1891
Godfrey, Chas. C., Bridgeport 1889
Hill, Edwin A., E. Killingly 1864
Hills, T. M., Willimantic 1870
Hughes, O. J. D., Meriden 1893
Jarvis, Geo. C., Hartford 1872
Johnson, Marcus M., Hartford. 1894
Knight, Geo. H., Lakeville 1889
Lindsley, Chas. A., New Haven 1884
Moody, M. B., New Haven 1889
Morrell, F. A., Putnam 1893
Nelson, A. W., New London 1888
Newton, C. B., Stafford Springs 1891
Paddock, L. S., Norwich 1892
Peckham, L. C., New Haven 1891
Porter, Geo. L., Bridgeport 1880
Rankin, Chas. G., Glastonbury 1893
Robinson, Rienzi, Danielsonville 1890
Root, Jos. E., Hartford 1889
Shelton, G. A., Shelton 1880
Shephard, G. R., Hartford 1881
Smith, F. S., Chester 1893
Stearns, H. P., Hartford 1892
Storrs, M., Hartford 1893
Swasey, E. P., New Britain 1880
Turner, S. W., Chester 1880
Wainwright, W. A. M., Hartford 1873
Whittemore, F. H., New Haven 1884
Wile, W. C., Danbury 1882

DAKOTA

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Capehart, H., Fargo, N 1891
Coyle, W. B., Lakota, N 1892
Coyne, S. J., Aberdeen, S 1890
Crain, F. M., Doland 1886
Darrow, E. M., Fargo N 1887
Dickinson, D. K., Lead City, S 1885
Duncan, W. E., Aberdeen, S 1891
Edgerton, W. E., Salem, S 1891
Freeman, J. W., Lead City, S 1885
Kaull, W. M., Frankfort, S 1893
Kutnewsky, J. K., Redfield, S 1890
McConnell, J. D., Fargo, N 1888
Wear, I. N., Fargo, N 1886

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Collins, S. B., Seaford 1883
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Wilson, J. H., Dover 1891

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Bowen, C. H., Washington 1891
Briscoe, W. C., Washington 1884
Bromwell, J. R., Washington 1884
Brown, C. W., Washington 1876
Bruckheimer, M., Washington 1891
Brumbangh, G. M., Washington 1891
Bryan, J. H., Washington 1889
Bulkley, J. W., Washington 1878
Busey, S. C., Washington 1870
Byrns, W. F., Washington 1891
Chappell, J. W., Tennallytown 1893
Cook, G. W., Washington 1887
Deale, Henry B., Washington 1891
Dean, R. C., U. S. Navy. 1890
Dexter, J. E., Washington 1891
Donnally, W. N., Washington 1891
Donohue, F., Washington 1891
Eliot, L., Washington 1891
Evans, W., Washington 1870
Foster, W. W., Washington 1884
Fox, W. H., Washington 1891
Franzoni, C. W., Washington 1872
Friedrich, L. L., Washington 1891
Fry, H. D., Washington 1884
Gihon, A. L., U. S. Navy 1876
Gobreeht, W. H., Washington 1858
Godding, W. W., Washington. 1884
Gunnell, F. M., Washington 1876
Hagner, D. R., Washington 1884
Hammond, T. V., Washington 1890
Hanee, T. F., Washington 1891
Hansmann, Theo., Washington 1891
Hawkes, W. H., Washington 1891
Hazen, David H., Washington 1889
Heger, A., U. S. A., Washington 1891
Holden, R. T., Washington 1884
Howard, J. T., Washington 1891
Hyatt, Frank, Washington 1881
Johnson, J. T., Washington 1876
Jones, A. W., Washington 1891
Jones, D. W., Washington 1884
Kertz, Jno., Washington 1892
King, A. F. A., Washington 1881
Kleinsehmidt, C. H. A., Washington 1880
Lamb, D. S., Washington 1889
Lincoln, N. S., Washington 1876
Lovejoy, J. W. H., Washington 1864
McArdle, T. E., Washington 1884
McLain, J. S., Washington 1892
Mackall, L., Georgetown 1884
Magruder, G. L., Washington 1880
Marmion, W. V., Washington 1891
Moran, J. F., Washington 1890
Morgan, Jas. D., Washington 1889
Muncaster, M., Washington 1891
Muncaster, S. B., Washington 1893
Mundell, J. H., Washington 1891
Neale, R. A., Washington 1891
Ober, Geo. C., Washington 1888
Owsley, Wm. T., Washington 1890
Parsons, Mary, Washington 1891
Pool, B. G., Washington 1891
Prentiss, D. W., Washington 1880
Reyburn, Robt., Washington 1868
Richardson, C. W., Washington 1889
Ritchie, Lewis W., Georgetown 1889
Rives, W. C., Washington. 1889
Rixey, P. M., Washington 1891
Shively, J. W., Washington 1881
Smart, Chas., U. S. A., Washington
Sothoron, Jas. T., Washington 1889
Sowers, Z. T., Washington 1887
Sprigg, W. M., Washington 1891
Stone, Isaac S., Washington 1885
Storeh, A. B., Washington 1883
Suddarth, J. L., Washington 1893
Striekler, M. B., Washington 1884
Thompson, J. F., Washington 1881
Toner, J. M., Washington 1864
Vaughan, G. T., Washington 1890
West, G. W., Washington 1881
Winter, John T., Washington 1889
Wolhaupter, D. P., Washington 1891
Woodward, Wm. C., Washington 1894
Wyman, W., U. S. M. H. S., Washington . . . 1884
Yarrow, H. C., Washington 1891
Young, J. T., Washington 1891

FLORIDA

Alba, E. M., St. Augustine 1892
Anderson, W. E., Pensacola 1891
Betton, G. W., Tallahassee
Burroughs, R. B., Jacksonville 1886
Caldwell, F. H., Sanford 1890
De Long, W. H., Emporia 1884
Drew, C., Jacksonville 1893
Izlar, R. P., Ocala 1892
Lancaster, R. A., Gainesville 1885
Maloney, J. B., Key West 1892
McLane, J. N., De Funniak Springs 1892
Moor, W. L., Tallahassee 1885
Murray, R. D., U. S. M. H. S., Key West . . 1872
Myers, T. J., Ocklawaha. 1892
Oglesby, C. R., Pensacola 1891
Palma, E. M., Key West. 1891
Plummer, J. W., V. R. Key West 1892
Porter, J. Y., Key West 1892
Wall, J. P., Tampa 1879
Weedon, Leslie W., Tampa 1890
Woreester, O. E., Conant 1890
Wright, O. S., Plant City 1892

FOREIGN

Sundberg, J. C., Bagdad, Turkey

GEORGIA

Armstrong, W. S., Atlanta 1870
Bailey, J. W., Gainesville 1878
Battey, Robt. Rome 1875
Boyd, M. L., Savannah 1892
Cortelyou, P. R., Marietta 1887
Doughty, W. H., Augusta 1890
Dunlap, A. S., Dalton 1875
Elkin, W. S., Atlanta 1891
Foster, Eugene, Augusta 1887
Garlington, T. R., Rome 1893
Gaston, J. McF., Atlanta 1886
Goodrich, E. C., Augusta 1880
Goss, I. H., Athens 1888
Grimes, Geo. J., Columbus 1879
Hardin, R. A., Savannah 1884
Hardman, L. G., Harmony Grove 1883
Holmes, J. B. S., Rome 1889
Holt, Wm. F., Macon. 1879
Hopkins, J. G., Thomasville 1890
Hopkins, T. S., Thomasville 1875
Hoyt, W. D., Rome 1879
Jenkins, R. H., Hogansville 1880
Lamb, T., Augusta 1885
McHatton, H., Macon 1884
McIntosh, T. M., Thomasville 1885
McRae, F. W., Atlanta 1891
Martin, J. D., Savannah 1880
Nicholson, Wm. P., Atlanta 1889
Nunn, R. J., Savannah 1876
O'Daniel, W., Bullard's Station 1879
Powell, Lucy E., Atlanta. 1887
Richardson, E. H., Atlanta 1885
Rowland, A. A., Brunswick 1877
Smith, J. E. W., Waycross 1885
Taylor, J. M., Kirkwood 1893
Wood, Wm. E., Dalton 1891

IDAHO

Genoway, C. V., Wallace 1894
Givens, J. W., Blackfoot 1894
Watkins, W. W., Moscow 1894

ILLINOIS

Abbott, W. C., Ravenswood 1893
Adams, A. L., Jacksonville 1893
Adolphus, P., Chicago 1884
Akins, W. T., Chicago 1887
Alderson, J. J., Chicago 1887
Allison, W. R., Good Hope 1888
Anderson, Bennet C., Beardstown 1890
Andrews, E., Chicago 1851
Andrews, E. W., Chicago 1893
Angear, J. J. M., Chicago 1892
Armstrong, C., Carrollton 1886
Auld, J. Maxwell, Chicago 1887
Ayer, L. P., Kewanee 1893
Babcock, Robt. H., Chicago 1887
Bacon, J. B., Chicago 1893
Bacon, C. S., Chicago 1893
Baker, L. H., Oak Park 1873
Baldwin, A. E., Chicago 1886
Ballenger, W. L., Evanston 1892
Baughman, J. A., Neoga 1894
Barger, H. N., Hopedale 1884
Barlow, L. N., Chicago 1887
Barlow, C., Eaton 1892
Barnes, I. N., Decatur 1887
Bartlett, J., Chicago 1887
Barton, P. H., Danville 1883
Berry, J. G., Chicago 1887
Besharian, J. H., Chicago 1884
Best, J. E., Arlington Heights 1887
Bettman, B., Chicago 1887
Bevan, A. D., Chicago 1894
Biddle, J., Monmouth 1886

Billings, F., Chicago 1884
Bishop, S. S., Chicago 1892
Blair, E. J., Monmouth 1891
Blaine, John E., Dwight 1894
Bondurant, A. A., Cairo 1883
Bouffleur, A. I., Chicago 1891
Bower, Reuben W., Sheridan 1894
Braffet, Jas. H., Paw Paw 1891
Brenton, Wash., Tuscola 1893
Brobeck, A. L., Wellington 1891
Broughton, R., Dwight 1892
Brower, D. R., Chicago 1877
Brown, E. J., Decatur 1892
Brown, H. B., Lincoln 1887
Brown, H. H., Chicago 1892
Brown, Jas. L., Peoria 1888
Brown, Sawyer, Chicago 1892
Buck, H. B., Springfield 1876
Bumstead, J. E., Dundee 1887
Burnham, A. F., Ashland 1886
Burr, Albert H., Chicago 1892
Burwash, T. N., Plainview 1886
Byford, H. T., Chicago 1874
Caldwell, W. S., Freeport 1887
Campbell, J. Y., Paxton 1882
Cary, F., Chicago 1887
Carter, J. M. G., Waukegan 1882
Casselberry, W. E., Chicago 1887
Catlin, E. P., Rockford 1884
Chamberlain, G. M., Chicago 1877
Chapman, G. H., Grand Crossing 1887
Chenoweth, W. J., Decatur 1872
Chew, J. H., Chicago 1877
Christopher, W. S., Chicago 1888
Clarke, W. E., Chicago 1882
Cleveland, E. F., Dundee 1880
Clifford, E. L. Chicago 1892
Colburn, J. Elliot, Chicago 1887
Cole, N. B., Bloomington 1884
Cole, Samuel, Chicago
Cole, W. C., Jacksonville 1886
Colt, J. D., Litchfield 1893
Connor, J. J., Pana 1886
Coolridge, F. S., Chicago 1893
Cook, E. P., Mendota, ... 1876
Cook, J. C., Hyde Park 1887
Cook, Wm. H., Coffeen 1894
Cooke, A. H., Chicago 1884
Corr, A. C., Carlinville 1886
Cory, A. L., Chicago 1893
Cowan, J. E., Galesburg 1882
Cox, W. M., Mt. Sterling 1883
Cozad, Jas., Reynolds 1876
Craig, G. G., Rock Island 1878
Crawford, N. B., Eureka 1890
Crow, J. T., Carrollton 1886
Curtiss, R. M., Union 1890
Dahl, S., Chicago 1893
Danforth, I. N., Chicago 1886
Davison, J. B., Moline 1873
Davis, N. S., Chicago 1847
Davis, N. S., Jr., Chicago 1886
De Veny, S. C., Chicago 1884
Dicuss, Geo. A., Strestor 1890
Dickerson, L. A., Chicago 1892
Dieffenbacher, P. L., Havana 1881
Dixon, J. N., Springfield 1887
Doering, E. J., Chicago 1887
Dougall, Wm., Joliet 1877
Dougherty, P., Chicago 1887
Dudley, E. C., Chicago 1883
Dudladway, C., Jerseyville 1882
Earle, Frank B., Chicago 1894
Eckley, W. T., Chicago 1887
Eddy, W. J., Shelbyville 1891
Engert, R. H., Chicago 1887
Englemann, Rosa, Chicago 1894
Ensign, W. O., Rutland 1877
Etheridge, J. H., Chicago 1885
Evans, W. A., Chicago 1893
Eyster, Geo. L., Rock Island 1886
Farley, W. K., Waterman 1894
Fenger, Christian, Chicago 1882
Fiegenbaum, E. W., Edwardsville 1886
Fink I. W., Hilisboro 1876
Fish, W. H., Baylis 1885
Fiske, G. F., Chicago 1887
Fitch, W. H., Rockford 1884
Fitch, T. D., Chicago 1884
Foote, D. E., Belvidere 1878
Foster, A. H., Chicago 1887
Frank, J., New Liberty 1888
Freeman, J. A., Millington 1882
Fringer, W. R., Rockford 1891
Gamble, W. E., Chicago 1892
Gapen, Clarke, Kankakee 1883
Gardiner, Edwin J., Chicago 1889
Garrison, Harriet, Dixon 1883
German, W. H., Morgan Park 1887
Gilson, Geo. H., Shipman 1887
Goble, E. T., Earlville 1887
Godfrey, H. T., Galena 1881
Goldspohn, A., Chicago 1885
Goodman, T. B., Cobden 1888
Gorgas, L. D. S., Chicago 1887
Gradle, Henry, Chicago 1887
Graham, D. W., Chicago 1886
Green, Earl, Mt. Vernon 1886
Griffith, B. M., Springfield 1882
Grimstead, W. F., Cairo 1885
Guthrie, H. R., Sparta 1880
Guthrie, W. E., Bloomington 1893
Guttery, Wm. V., Middletown 1890
Haigler, E. E., Springfield 1892

Haines, W. S., Chicago 1887
Hall, C. W., Kewanee 1894
Hall, J. M., Chicago 1887
Hall, R. N., Chicago 1887
Hallam, J. L., Centralia 1885
Haller, F. B., Vandalia 1859
Hamilton, J. B., Chicago 1873
Hardy, H. T., Kaneville 1887
Hardie, T. Melville, Chicago 1893
Harlan, A. W., Chicago 1884
Harmison, D. C., Bath 1892
Harris, B., Aurora 1892
Harris, B. H., Groveland 1884
Harsha, W. M., Chicago 1887
Hatch, H., Quincy 1892
Hartley, J. D., Chicago 1884
Hasken, W. A., Alton 1877
Hatfield, M. P., Chicago 1884
Haven, A. C., Lake Forest 1886
Hawley, C. W., Chicago 1888
Heckard, M. O., Chicago 1894
Heise, Ellen H., Canton 1891
Hemala, Richard, Onarga 1892
Hem uway, H. B., Evanston 1885
Henderson, J. P., Chicago 1887
Henry, Robt. F., Princeville 1886
Hequembourg, J. E., Chicago 1887
Herrick, J. B., Chicago 1893
Herriott, E. L., Jacksonville 1886
Hess, F. A., Chicago 1888
Hessert G., Chicago 1891
Hester, W. W., Chicago 1885
Hickman, T. G., Vandalia 1884
Hilsabeck, W. F., Windsor 1890
Hinde, Alfred, Chicago 1893
Hilton, C. V., Chicago 1886
Hillmantel, J. L., Chicago 1893
Hoadley, A. E., Chicago 1886
Holderness, E. P. G., Chenoa 1885
Hollister, J. H., Chicago 1873
Holmes, Bayard, Chicago 1888
Holmes, E. L., Chicago 1877
Holroyd, E. C., Chicago 1892
Hoopman, S. V., Roanoke 1891
Hosmer, A. B., Chicago 1887
Hotz, F. C., Chicago 1887
Hughes, N. J., Waverly 1892
Hull, M. D., Bloomington
Hunt, C. C., Dixon 1877
Hunter, C. T., Springerton 1886
Huntsinger, J. C., Pinckneyville 1886
Huribut, V. L., Chicago 1863
Hurst, S. T., Green View 1885
Hutchins, W. A., Orangeville 1894
Hyde, J. N., Chicago 1877
Ingals, E., Chicago 1877
Ingals, E. Fletcher, Chicago 1877
Isham, Ralph N., Chicago 1859
Jay, Frank W., Chicago 1894
Jenckes, H. L., Galena 1893
Jenks, D. S., Plano 1882
Johnson, C. W., Litchfield 1886
Johnson, F. S., Chicago 1883
Jones, G. W., Danville 1873
Jones, S. J., Chicago 1877
Jump, D. W., Plainfield 1883
Kauffman, J. S., Blue Island 1887
Keith, Wm., Chicago 1892
Kendall, H. W., Quincy 1872
Kerrick, H. C., Brocton 1894
Kewley, J. R., Chicago 1887
Kiernan, J. G., Englewood 1888
Kilgore, J. C. Monmouth 1882
Kitchen, J. L., Harvey 1884
Knight, F. C., Libertyville 1894
Knight, Mary G., Aurora 1886
Kreider, G. N., Springfield 1893
Kurtz, C. E., Chicago 1883
Landon, W. M., Fowler 1886
Latham, V. A., Chicago 1893
Leahy, M. M., Chicago 1883
Ledlie, J. H., Pittsfield 1878
Lee, Elmer, Chicago 1886
Lee, E. W., Chicago 1889
Leeds, L. L., Lincoln 1885
Leonard, R. L., Chicago 1887
Lewis, C. J., Chicago 1886
Lewis, Denslow, Chicago 1886
Lichty, D., Rockford 1873
Linden, F. C., Chicago 1894
Littlefield, H. H., Beardstown 1875
Livingood, Jno. R., Rossville 1883
Lonergan, W. D., Chicago 1887
Loomis, E. B., Chicago 1887
Lydston, G. Frank, Chicago 1886
Lydston, J. A., Chicago 1887
McArthur, L. L., Chicago 1885
McCullough, J. R., Chicago 1887
McCurdy, J. G. Chicago 1892
McIlvaine, P. M., Peoria 1882
McFall, D. M., Mattoon 1893
McGaffigan, A. J., East St. Louis 1887
McKennan, H., Paris 1891
McLean, John, Pullman 1876
McClelland, R. A., Yorkville 1887
McMann, W. W., Gardner 1874
McMillan, P. H., Shiloh Hill 1886
McNary, W. H., Martinsville 1878
McCreight, S. L., Chicago 1892
McWilliams, S. A., Chicago 1877
MacArthur, R. D., Chicago 1888
Mackenzie, W. R., Chester 1884
Maclay, A. I., Delavan 1891
Malone, L. A., Jacksonville 1886

Mammen, E., Bloomington 1893
Marshall, J. S., Chicago 1882
Marshall, S. W., Sparta 1886
Martin, F. H., Chicago 1886
Martin, S. C., Anna 1887
Martin, Wm S., Tuscola 1890
Matthews, J. P., Carlinville 1877
Mattison, F. C. E., Chicago 1891
Mayo, E. L., DeKalb 1887
Melms, R., Chicago 1893
Mellish, E. J., Chicago 1893
Mercer, F. W., Chicago 1887
Mergler, M. J., Chicago 1887
Mettler, L. H., Chicago 1890
Miller, De Laskie, Chicago 1886
Miller, J. H., Pana 1886
Miller, Katharine, Lincoln 1894
Miller, R. E., Chicago 1887
Mitchell, J. H., Mt. Vernon 1886
Mitchell, Orlando, Marshall 1888
Mitchell, Robt. J., Girard 1886
Montgomery, L. H., Chicago 1882
Montgomery, Wm. T., Chicago 1886
Moon, O. W., Lockport 1874
Moore, O. T., Marissa 1886
Morgenthau, George L., Chicago 1892
Moyer, H. N., Chicago 1888
Mudd, W. A., Athens 1886
Murphy, J. B., Chicago 1887
Myers, J. C., Clinton 1891
Nash, A., Joliet 1872
Nelson, D. T., Chicago 1877
Nesbitt, G. W., Sycamore 1878
Newcomer, J. M., Petersburg 1891
Newman, H. P., Chicago 1882
Niles, J. W., Chicago 1894
Noble, C. M., McLean 1882
Norbury, F. P. Jacksonville 1877
Norris, A. L., Farmer City 1891
Nutt, F. L., Marengo 1888
O'Neil, John W., Chicago 1894
Ochsner, A. J., Chicago 1893
Ohlmacher, A. P., Chicago 1893
Oughten, C. M., Chicago 1893
Owens, John E., Chicago 1877
Oyler, P. H., Mt. Pulaski 1885
Paoli, G. G., Chicago 1863
Parke, C. R., Bloomington 1887
Parkhurst, F. J., Danvers 1887
Patch, Wm., Ellsworth 1892
Patton, E. M., Quincy 1894
Payne, D. A., Chicago 1894
Pearman, J. P., Champaign 1887
Pendleton, F. M., Chicago 1889
Percy, Jas. F., Galesburg 1887
Phillips, E. L., Galesburg 1874
Pierce, N. H., Chicago 1892
Pitner, T. J., Jacksonville 1872
Plecker, J. H., Chicago 1885
Plummer, S. C., Rock Island 1873
Plummer, S. C., Jr., Chicago 1887
Pogue, J., Edwardsville 1887
Polk, John L., Arcola 1887
Pollock, W. L., Englewood 1882
Priestman, J. L., Neponset 1889
Prince, A. E., Springfield 1884
Prince, L. H., Chicago 1891
Proctor, E. G., Kane 1886
Pruyn, C. P., Chicago 1888
Purdy, C. W., Chicago 1887
Pusey, W. A., Chicago 1893
Putney, W. G., Serena 1887
Pynchon, Ed., Chicago 1886
Quine, Wm. E., Chicago 1894
Reynolds, A. R., Chicago 1883
Reynolds, G. W., Chicago 1893
Rhodes, J. E., Chicago 1887
Richards, W. M., Joliet 1883
Richings, H., Rockford 1886
Ridlon, John, Chicago 1894
Rivard, Geo. J., Assumption 1886
Ring, John, Chicago 1892
Robbins, M. M., Aurora 1877
Robinson, F. B., Chicago 1893
Rohr, G. W., Rockford 1877
Romig, S. V., Rogers Park 1887
Rook, C. W., Quincy 1884
Rooney, M., Quincy, ... 1884
Root, E. H., Chicago 1887
Roseberry, B. S., Lacon 1891
Roskoten, R., Peoria 1874
Ross, G. W., Carrollton 1886
Rosson, John B., Ava 1886
Rowe, Mark, Redmon 1882
Rutherford, C., Chicago 1892
Ryon, Geo., Amboy 1893
Schafer, F. C., Chicago 1878
Schneck, J., Mt. Carmel 1885
Schwartz, E., Knoxville 1887
Seeley, T. P., Chicago 1883
Senn, N., Chicago 1873
Shinn, W. R., Chenoa 1892
Shipp, F. J., Petersburg 1881
Sima, S. N., St. Joseph 1887
Skeer, J. D., Chicago 1886
Slater, A. S., Wataga 1883
Slater, Catherine B., Aurora 1882
Sloan, W. K., Moline 1887
Small, A. R., Chicago 1887
Smedley, N. J., Chicago 1892
Smith, Lee, Bloomington 1882
Sperling, W. H., Moweaqua 1891
Spear, J. W., Mason City 1888
Spear, L. E., Shirley 1886

Stanley, F. A., Chicago 1886
Starkey, H. M., Chicago 1887
Starkweather, R. E., Chicago 1888
Steele, D. A. K., Chicago 1877
Stehman, H. B., Chicago 1893
Stilliams, D. C., Chicago 1887
Stoddard, G. W., Ramsey 1891
Strong, A. B., Chicago 1886
Stowell, J. H., Chicago 1887
Suggett, W. L., Flora 1890
Swan, W. S., Harrisburg 1887
Sweetland, W. M., Highland Park 1885
Swartz, T. B., Chicago
Tagert, A. H., Chicago 1882
Talbot, E. S., Chicago 1881
Tefft, Leslie E., Elgin 1887
Thomas, A. L., Chicago 1887
Thompson, L. G., Lacon 1883
Thompson, Mary H., Chicago 1886
Thompson, S., Galva 1888
Tibbits, L., Rockford 1880
Tilley, Robert, Chicago 1884
Todd, J. F., Chicago 1880
Trout, W. A., Atwater 1886
Truesdale, C., Rock Island 1882
Turner, B. S., Chicago 1894
Turck, F. B., Chicago 1893
Tyler, J. H., Clinton 1887
Uran, B. F., Kankakee 1887
Van Horne, A. K., Jerseyville 1873
Veatch, W. H., Carthage 1893
Verity, W. P., Chicago 1882
Vertress, C. M., Murrayville 1886
Vreeland, H. E., Chicago 1892
Wadsworth, J. L. R., Collinsville 1873
Walbridge, I. P., Decatur 1887
Walker, J. B., Effingham 1884
Wallace, J. H., Monmouth 1877
Ware, Lyman, Chicago 1886
Webster, G. W., Chicago 1887
Wells, E. F., Chicago 1894
Webster, J. R., Monmouth 1877
Wertenbaker, C. P., Chicago 1891
West, E. A., Chicago 1890
West, W. C., Geneseo 1891
Westcott, G. D., Chicago 1887
Wetmore, A., Waterloo 1886
Whelpley, H. M., Cobden 1891
White, J. L., Bloomington 1880
Whitefield, G. W., Evanston 1891
Whitmire, J. S., Metamora 1892
Whitley, J. D., Petersburg 1880
Whitten, T. J., Jacksonville 1888
Wilder, W. H., Chicago 1891
Will, O. B., Peoria 1886
Willard, E. R., Wilmington 1872
Williams, D. H., Chicago 1887
Williams, J. F., Chicago 1887
Williams, T. W., Casey 1887
Willis, W. H., Whitefield 1887
Wilson, J. T., Galesburg 1882
Wing, E., Chicago 1887
Wood, C. A., Chicago 1892
Woodworth, P. M., Chicago 1886
Zeisler, J., Chicago 1887
Zeller, G. A., Peoria 1887

INDIANA

Adams, J. R., Petersburg 1879
Ader, H., Somerset 1873
Arnold, John, Rushville 1875
Arthur, C. S., Portland 1883
Bacon, C. P., Evansville 1874
Bailey, G. D., Spiceland 1888
Bali, J. T., Judson 1888
Banker, A. J., Columbus 1886
Batman, W. F., Ladoga 1890
Beasley, G. F., Lafayette 1878
Becknell, Irviu J., Milford 1884
Bell, Guido, Indianapolis 1890
Bell, W. H., Logansport 1874
Berteling, J. B., South Bend 1888
Binkley, J. T., Evansville 1891
Bitz, L. B., Evansville 1878
Bloomfield, E. M., Peru 1883
Blount, R. F., Wabash 1882
Bond, C. S., Richmond 1887
Bond, R. C., Aurora 1888
Bonnell, Thos. A., New Brunswick 1893
Bonnell, M. H., Lebanon 1888
Bonnell, H. M., Jamestown 1893
Boswell, A. J., Ft. Wayne 1884
Brucker, C. M., Tell City 1888
Bryan, T. M., Indianapolis 1885
Burke, G. W., Newcastle 1882
Burket, C. W., Warsaw 1887
Byers, A. R., Petersburg 1890
Carson, L. O., Traders Point 1884
Chafee, W. C., Huntington 1887
Chittick, Chas., Frankfort 1892
Charlton, S. H., Seymour 1875
Clark, L., Elkhart 1892
Cline, L. C., Indianapolis 1890
Clouser, N. D., Hartford City 1888
Coleman, A., Logansport 1876
Cook, C. P., New Albany 1886
Cook, Geo. J., Indianapolis 1886
Cox, E., Kokomo 1893
Cooperider, J., Madison 1893
Crapo, J. R., Terre Haute 1888
Crapo, G. W., Terre Haute 1878
Culbertson, R. H., Brazil 1881
Culbertson, Scott, Moorfield 1890
Daneer, J., South Milford 1887
Darby, A. B., Waterloo 1887
Daugherty, C. A., South Bend 1886
Davis, L. N., Farmland 1883
Davisson, H. C., Hartford City 1883
Dayton, G. H., Lima 1884
Donaldson, E. F., Wabash 1884
Drayer, P., Hartford City 1882
Dunning, L. H., Indianapolis 1876
Eastman, J., Indianapolis 1873
Eckelman, F. C., Elkhart 1887
Eichelberg, W. C., Terre Haute 1891
Elder, E. S., Indianapolis 1892
Fermier, P., Weisburg 1891
Fertich, G. W., Dunkirk 1893
Finley, G. W., Harmony 1893
Fink, H. A., South Bend 1892
Fitch, A. P., Lebanon 1891
Fletcher, C. I., Indianapolis 1887
Flynn, Wm., Marion 1887
Ford, J. H., Wabash 1886
Freeman, E. D., Osgood 1884
Fry, C. W., Bracken 1887
Fullinwider, C. H., Mt. Vernon 1890
Galbraith, S. T., Seymour 1893
Garber, J. B., Dunkirk 1893
Garver, J. J., Indianapolis 1884
Gerrish, M. F., Seymour 1888
Grant, G. H., Richmond 1888
Green, J. W., Shelbyville 1882
Greene, Geo. R., Muncie 1893
Greenawalt, G. L., Ft. Wayne 1883
Gregg, V. H., Connersville 1883
Hadley, E., Indianapolis 1888
Hamilton, S. N., Connersville 1888
Hanna, L. M., Greencastle 1886
Hargrove, W. S., New Salem
Harper, H. F., Merom 1876
Haworth, M. C., Noblesville 1892
Harris, R. W., New Albany 1893
Hayden, A. M., Evansville 1886
Hayes, F. W., Indianapolis 1888
Hays, G. C., Hillsboro 1880
Hendy, W. S., Jamestown 1893
Heath, F. C., Indianapolis 1893
Heaton, Conley, Aurora 1888
Helm, C. J., Peru 1888
Henley, A., Fairmount 1877
Henry, W. C., Aurora 1883
Hervey, J. W., Indianapolis 1885
Hess, J. N., New Marion 1888
Hewius, W. A., Chandler 1893
Hibberd, J. F., Richmond 1864
Hickes, C., Caborne 1890
Higgins, C. B., Peru 1883
Hinkle, J. R., Sullivan 1888
Hodges, E. F., Indianapolis 1887
Hodges, F. J., Anderson 1891
Holton, W. M., New Harmony 1879
Holtzendorff, A. C., Plymouth 1887
Hon, U. H., Bloomington 1888
Hood, J. C., Dana 1892
Howard, N. P. Jr., Greenfield 1880
Irwin, L. M., Lafayette 1884
Jenkins, W. O., Terre Haute 1886
Johnston, M. F., Richmond 1888
Jones, George S., Covington 1887
Keegan, C. J., Canal 1888
Keen, L. S., Laporte 1878
Kemper, G. W. H., Muncie 1883
Kennedy, T. C., Shelbyville 1888
Keiper, G. F., Lafayette 1892
King, W. R., Greenfield 1884
Knapp, Charles, Evansville 1886
Knapp, S. O., Frankford 1884
Krausgrill, D., Wadesville 1888
Lamb, J., Aurora 1886
Lane, W. H., Angola 1891
Lash, H. M., Indianapolis 1888
Laughlin, G. E., Orleans 1892
Leamon, S. W., Albion 1887
Lewis, E. R., Indianapolis 1887
Link, John E., Terre Haute 1877
Linvill, D. G., Columbia City 1874
Lowder, L. T., Bloomington 1890
Lower, M. O., North Manchester 1886
McCaskey, G. W., Fort Wayne 1886
McCoy, G. T., Columbus 1888
McCoy, P. Y., Evansville 1890
McCoy, W. A., Madison 1892
McDonald, W. B., New Angusta 1890
McIntyre, C. W., New Albany 1886
McMahon, W. R., Huntingsburg 1875
McShane, J. T., Indianapolis 1887
Mackey, G. W., Portland 1888
Martin, S. M., Greenfield 1878
Maxwell, A., Indianapolis 1886
Meyer, J. H. W., LaPorte 1888
Mock, J. W., Covington 1888
Moffett, E. D., Indianapolis 1890
Moffit, W. R., Lafayette 1887
Monohan, W. R., Huntingburg 1893
Montgomery, H. T., South Bend 1883
Mooney, H. C., Laketon 1892
Moore, J. B., Kokomo 1892
Moore, P. G., Wabash 1883
Morris, C. C., Irvington 1892
Morris, J. E., Liberty 1876
Mullen, A. J. Jr., Michigan City 1892
Murphy, E. New Harmony 1884
Myers, H. K., Edinburg 1890
Myers, W. H., Ft. Wayne 1886
Neal, W. A., Elkhart 1892
Newcomer, M. V. B., Tipton 1892
O'Ferrall, R. M., Lafayette 1884
Oliver, J. H., Indianapolis 1888
O'Neal, L., Somerset 1883
O'Neal, Oren, Wabash 1892
Owen, A. M., Evansville 1886
Page, Lafayette, I. F., Indianapolis 1892
Pantzer, H. O., Indianapolis 1887
Patterson, A. W., Indianapolis 1875
Pearse, S. H., Mt. Vernon 1875
Pfaff, O. G., Indianapolis 1888
Pierson, A., Spencer 1887
Phillips, C., Scipio 1893
Powell, J. Z., Logansport 1887
Ramsey, D. C., Mt. Vernon 1885
Rea, John, Newcastle 1870
Rea, O. A., Marmont 1890
Reynard, G., Union City 1892
Rooker, J. I., Castleton 1888
Rosenthal, I. M., Fort Wayne 1867
Rosa, J. H., Kokomo 1892
Salb, J. P., Jasper 1890
Sanders, F. E., Perryville 1893
Sawyer, F. M., South Bend 1887
Schaefer, C. R., Indianapolis 1890
Scott, J. W. C., Hecla 1888
Scott, William, Kokomo 1883
Schultz, W. J., Lebanon 1893
Sebring, D. A., Auburn 1890
Sexton, J. C., Rushville 1887
Shepard, S. D., Everton 1888
Short, W. H., LaGrange 1888
Shull, C. Q., Montpelier 1884
Smith, A. J., Wabash 1884
Smith, C. H., Lebanon 1883
Smith, H. B., Olio 1893
Smith, W., Delphi 1891
Smythe, G. C., Greencastle 1879
Spencer, E. V., Mt. Vernon 1886
Squires, J. W., Cherubusco 1893
Stewart, J., Anderson 1884
Stewart, C. S., Garrett 1892
Stockton, Sarah, Indianapolis 1890
Stone, R. F., Indianapolis 1892
Sutcliffe, J. A., Indianapolis 1884
Sutton, H. Harley, Aurora 1888
Swartz, D. J., Auburn 1888
Taylor, C. A., York Centre 1892
Thompson, D. A., Indianapolis 1892
Thompson, W. N., Sullivan 1891
Thompson, J. L., Indianapolis 1883
Todd, L. L., Indianapolis 1885
Veneman, R. T., Cannelton 1890
Vinnedge, W. W., Lafayette 1873
Wahl, G. F., Bremen 1888
Walker, E., Evansville 1891
Waller, W. H., Angola 1885
Webster, J. C., Lafayette 1880
Weever, J. B., Evansville 1884
Weist, J. R., Richmond 1876
Wethereli, R. B., Lafayette 1887
Wherry, Mary A., Fort Wayne 1888
Wherry, W. P., Fort Wayne 1892
White, C. A., Danville 1888
White, E. G., Lagrange 1887
Whitesell, P. P., Clarksville 1887
Williams, L., Marion 1867
Williams, T. B., Angola 1892
Wilson, A. L., Indianapolis 1890
Wilson, J. H., Plymouth 1887
Wilson, W., Yankeetown 1893
Wishard, W. N., Indianapolis 1884
Wood, H. D., Angola 1874
Wood, F., Angola 1876
Woodburn, F. C., Indianapolis 1888
Woodburn, J. H., Indianapolis 1893
Wooley, G. V., Indianapolis 1884
Work, J. A., Elkhart 1883
Young, S. J., Terre Haute 1877
Younkman, A. B., Bremen 1886

INDIAN TERRITORY

Berry, V., Wagner 1893
Fortner, B. F., Vinita 1876

IOWA

Adair, L. J., Anamosa 1883
Appleby, G. W., Bristow 1892
Baker, E. L., Indianola 1883
Baker, J. W. H., Davenport 1888
Barnes, C. E., Burlington 1891
Barnes, H. E. W., Creston 1891
Bean, J. V., Fairfield 1888
Beggs, G. W., Sioux City 1882
Berry, R. P., Clermont 1892
Bergan, A. C. Sioux City 1889
Birney, C. C., Estherville 1882
Birney, E., Greeley 1893
Blanchard, L., Edgewood 1883
Bloodgood, Chas., Clinton 1893
Bond, L. L., West Side 1887
Bowen, A. B., Maquoketa 1876
Bradley, Chas. C., Manchester 1890
Brooks, A. L., Audubon 1892
Brookhausen, B. E., Lansing 1882
Brookings, D. J., Woodward 1885
Brown, Caleb, Sac City 1892
Brown, H. W., Waterloo 1887
Brown, Luther, Rockford 1885
Bundy, A. D., St. Ausgar 1886
Carpenter, G. P., Cedar Rapids 1891
Carson, J., Mt. Vernon 1884
Carter, G. W., Marshalltown 1882
Chatterton, A. S. Peterson 1893
Clapp, E. F., Iowa City 1884
Clark, E. W., Grinnell 1877

Cleaves, R. L., Cherokee 1890
Coad, N. G. O., Hull 1893
Cobb, W. F., Mona 1882
Conniff, R. E., Sioux City 1893
Cottle, C. C., Marshalltown 1890
Craig, N. S., Manchester 1887
Crawford, G. E., Cedar Rapids 1887
Crlley, B. H., Dallas Centre 1878
Crouse, D. W., Waterloo 1878
Cushman, R. A., Sanborn 1893
Darnell, G. D., West Union 1882
Davies, W. H., Maquoketa 1890
Dean, H. M., Muscatine 1876
Deering, A. A., Boone 1878
Divine, J. H., Sioux Rapids 1886
Dunlavy, J. C., Sioux City 1887
Elskamp, G. H., Washington 1889
Emmert, J., Atlantic 1882
Enfield, C., Jefferson 1886
Ensign, H. D., Boone 1878
Eschbach, H. C., Albia 1887
Evans, O. E., Gowrie 1882
Ewers, H. F., Burlington 1882
Fairchild, D. S., Clinton 1882
Farnsworth, P. J., Clinton 1873
French, L., Davenport 1892
Fullerton, O. J., Waterloo 1886
Gamble, T. D., Wheatland 1882
Gardner, I. K. New Hampton 1893
Getz, H. L. Marshalltown 1882
Gilman, H. A., Mt. Pleasant 1885
Gibbon, W. H., Charlton 1885
Gorrell, J. R., Newton 1890
Griffin, C. C., Vinton 1877
Gutch, W., Albia 1876
Hackett, C. J., Le Mars 1882
Hanawalt, G. P., Des Moines 1878
Hanna, Rebecca, Red Oak 1886
Hart, R. J., Charter Oak 1882
Hazen, E. H., Des Moines 1872
Hedges, T. M., Grinnell 1884
Heustis, J. W., Dubuque 1890
Hill, G. H., Independence 1882
Hill, Nancy M., Dubuque 1887
Hiett, F. M., Red Oak 1890
Hobson, A., Hampton 1893
Hobart, A. J., Clinton 1882
Hobby, C. M., Iowa City 1884
Hoering, G. P., Walnut 1892
Holiday, J. W., Burlington 1886
Hornibrook, E., Cherokee 1885
Hutchinson, W., Des Moines 1892
Hyatt, B. F., Ottumwa 1886
Ingels, J. B., Meriden 1887
Jackson, Daniel, Pleasantville 1893
Jenkins, G. F., Keokuk 1873
Jewell, P. M., Osslan 1893
Joralemon, J. C., Toledo 1887
Johnson, C., Clinton 1893
Kegley, E. A., Cedar Rapids 1884
Kemmerer, C. T., Eldridge 1889
Kempker, J. F., Adair 1894
King, E. H., Muscatine 1884
Kirkendall, E. E., W. Burlington 1887
Knott, J. M., Sioux City 1878
Lacey, T. B., Council Bluffs 1887
LaForce, D. A., Ottumwa 1886
Langan, D., Clinton 1872
Langan, J. C., Clinton 1892
Lelpziger, H. A., Burlington 1889
Lewellen, P. W., Clarinda 1886
Little, F. H., Muscatine 1892
Lewis, C. G., Ottumwa 1882
Lewis, J. R., Grinnell 1888
Little, L. W., Iowa City 1891
Love, J. S., Springville 1877
Lytle, S. S., Iowa City 1885
McAllister, Chas., Spencer 1893
McClain, W. H., Conrad Grove 1885
McCleary, J. D., Indianola 1887
McCluer, B., Dubuque 1878
McClure, A. W., Mt. Pleasant 1882
McClure, T. G., Douds Station 1884
McCowen, Jennie, Davenport 1882
McDonald, O. P., Keokuk 1882
McDowell, G. F., Clear Lake 1892
McKenzie, H. M., Elwood 1884
McKlveer, H., Charlton 1893
McMorris, J., Belle Plaine 1893
Macrae, D., Council Bluffs 1886
Markham, H. C., Independence 1882
Martin, Jeffery, Clinton 1893
Maxwell, T. J., Keokuk 1876
Mehler, F. C., New London, ... 1887
Meredith, M., Vinton 1877
Middleton, W. D., Davenport 1887
Miller, E. C., Rockwell 1882
Minges, Geo., Dubuque 1883
Moore, Mary B., Osage 1891
Mueller, J. A., Dyersville 1887
Murphy, Garrett, N., Nora Springs 1884
Mygatt, A. S., Rolfe 1892
Newman, M. M., Edgewood 1887
Nicol, Jno. H., Villisca 1887
Osborne, M. C., Delmar 1884
Overholt, D. W., Columbus Junction 1876
Page, J. Frank, Mystic 1888
Park, Geo., Sioux City 1888
Park, W. M., Indianola 1880
Parker, C. C., Fayette 1884
Parr, T. S., Indianola 1879
Peck, Frank, I., Mt. Pleasant 1889
Philpott, J. W., Ft. Madison 1887
Pierce, S. N., Cedar Falls 1885
Powell, Chas. B., Albia 1887
Priestly, Jas. T., Des Moines 1886
Ransom, Horace B., Burlington 1877
Rawson, A. A. Corning 1884
Raymer, H. S., Cedar Rapids 1893
Reynolds, A., Clinton 1887
Reynolds, E. M., Centreville 1884
Reynolds, J. D., Creston 1887
Richards, W. O., Waterloo 1885
Riggen, John A., What Cheer 1887
Ristine, H. G., Fort Dodge 1883
Roberts, Jason, Osceola 1892
Roberts, T., St. Charles 1892
Robertson, J. S., Council Bluffs 1885
Robinson, S. E., West Union 1882
Rogers, H. S., Red Oak 1884
Rolfe, B. F., Staceyville 1882
Roome, J. S., Calmar 1884
Ruth, C. E., Keokuk 1886
Sanson, J. E., Tipton 1885
Savage, J. P., Sioux City 1888
Schooler, L., Des Moines 1887
Scroggs, J. A., Keokuk 1887
Searle, B. W., Ottumwa 1882
Seybert, F. T., Council Bluffs 1886
Sherman, E. Amelia, National 1886
Sherman, J. A., Cherokee 1886
Sherman, J. M., Renwick 1887
Sherman, W. B., Manchester 1887
Shrader, J. C., Iowa City 1873
Shuell, T. J., Parnell 1887
Skinner, G. R., Cedar Rapids 1891
Sloan, M. G., Dexter 1885
Smead, C. C., Newton 1890
Smith, C. H., Mason City 1882
Smith, E. R., Toledo 1886
Smith, J. W., Charles City 1873
Smouse, D. W., Des Moines 1885
Spilman, S. A., Ottumwa 1882
Staunton, T. P., Charlton 1890
Staples, G. M., Dubuque 1872
Tedron, J. B., Willliams 1891
Thomas, F. S., Council Bluffs 1886
Thornton, J. H., Lansing 1890
Townsend, D. J., Lohrville 1890
Treat, J. A., Stuart 1887
Tuttle, Mary B., Burlington 1891
Udell, C. N., Blakesburg 1885
Vaart, S. Van Der, Cedar Falls 1892
Vall, A. M., Rock Rapids 1887
Volding, M. N., Independence 1892
Waggener, E. A., Burlington 1886
Watson, Wm., Dubuque 1876
Welch, I. L., Humboldt 1883
Weir, F. A., Jesup 1882
Whitney, H. C., Burlington 1893
Wick, D. M., Cedar Falls 1886
Will, F. J., Eagle Grove 1886
Williams, R. R., Manning 1884
White, Max E., Mt. Pleasant 2885
Worley, J., Belle Plaine 1882
Wright, A. L., Carroll 1882
Young, H. B., Burlington 1882
Young, J. W., Bloomfield 1884

KANSAS

Ballou, J. H., Haven 1886
Cunkle, L. J., Madison 1883
Dally, F. M., Beloit 1886
Daugherty, P., Junction City 1890
Davis, E. W., Wichita 1880
Day, M. G., Wichita 1892
Dewees, Wm. B., Salina 1890
Dillon, J. Eureka, ... 1886
Emerson, George, Winfield 1886
Felty, J. U., Abilene 1893
Gardluer, C., Emporia 1883
Hall, Sarah C., Ft. Scott 1892
Harvey, Z. T., Council Grove 1889
Hazlett, E. E., Abilene 1893
Hissen, H. Z., Ellsworth 1892
Jacobs, L. D., Emporia 1883
Lanphear, S. E. Hartford 1886
Leslie, C. F., Clyde 1880
Lyman, L. J., Manhattan 1892
McCarthy, T. L., Dodge City 1892
McCully, W. A., Independence 1887
McNary, O. C., Nat'l Military Home 1890
Minney, John E., Topeka 1886
Mottram, C. V., Lawrence 1873
Potter, J. T., Mt. Hope 1892
Reynolds, L., Horton 1892
Smolt, C. F., Nickersnn, ... 1883
Stephens, N. A., Wichita 1892
Stewart, J. P., Clay Center 1892
Taylor, N. J., Berryton 1892
Tefft, H. K., Topeka 1886
VanEman, W. J., Leavenworth 1885
Ward, M. B., Topeka 1890

KENTUCKY

Adamson, H. K., Maysville 1891
Bailey, Wm., Louisville 1886
Baughman, J. N., Flat Lick 1892
Barrow, David, Lexington 1890
Beeler, G., Clinton 1885
Blaine, A. D., Dry Ridge 1892
Boyd, Franklin, Paducah 1890
Brooks, J. G., Paducah 1882
Brown, H., Hustonville 1881
Butt, Albert L., Franklin 1890
Carpenter, J. G., Stanford, ... 1888
Cartledge, A. M., Louisville 1892
Cartwright, H. P., Bowling Green 1890
Cheatham, W., Louisville 1886
Clarke, Frank H., Lexington 1889
Coleman, B. L., Lexington 1879
Coleman, W. W., Mt. Washington 1888
Coons, T. C., Chilesburg 1892
Cowan, H. J., Danville 1888
Cowgill, W. M., Paducah 1890
Creel, M. P., Central City 1887
Crouch, M. J., Union 1892
Dabney, S. G., Louisville 1891
Dixon, A., Henderson 1888
Dunlap, F., Danville 1885
Farris, Alex. A., Hickman 1890
Fisher, S. K., Milton 1892
Grant, H. H., Louisville 1886
Greenley, T. B., Meadow Lawn 1877
Griffiths, G. W., Louisville 1887
Hampton, S. E., Milton 1890
Hanna, W. M., Henderson 1873
Hasemeier, J. A., Louisville 1892
Hodge, J. A. Henderson 1859
Holloway, S. W., Louisville 1892
Howard, R. J., Pryorshurg 1875
Ingram, Julia, Louisville 1888
Jordan, W. A., Clinton 1887
Keen, W. C., Burkeaville 1889
Kelly, C. W., Louisville 1892
Kelley, E., Lebanon 1888
Kinnard, J. B., Lancaster 1892
Larrabee, John A., Louisville 1890
Lassing, H. C., Union 1887
Luten, J. R., Fulton 1890
Luten, S. W., Cayce 1886
McChord, R. C., Lebanon 1885
McCormack, J. N., Bowling Green 1884
McDowell, H., Cynthiana 1885
McKeel, P. W., Wingo 1887
McMasters, D. H., Pryorsburg 1890
McMurtry, L. S., Louisville 1882
McNary, H. F., Princeton 1875
Mann, Charles, Nicholasville 1873
Marvin, J. B., Louisville 1886
Mathews, J. M., Louisville 1886
Morris, N. G., Fulton 1890
Norment, H. T., Anthoston 1892
O'Neal, W. S., Lancaster 1892
Orr, Alex, Butler 1892
Peck, J. M., Arlington 1890
Perkins, George, Somerset 1875
Peyton, J. F., Stanford 1888
Price, A. D., Harrodsburg 1884
Price, J. L., Sherman 1888
Reddick, Jas. I., Paducah 1893
Reynolds, Dudley S., Louisville 1872
Richardson, Edward, Louisville 1874
Richmond, W. W., Clinton 1885
Rodman, W. L., Louisville 1892
Samuel, F. W., Louisville 1892
Satterwhite, T. P., Louisville 1893
Scarborough, J. R., Spring Hill 1890
Seargeant, A., Hopkinsville 1886
Skillman, H. M., Lexington 1888
Smith, A. W., Richmond 1888
Stevens, E. A., Mayfield 1890
Stuckey, T. H., Louisville 1890
Thomas, J. P., Hopkinsville 1875
Thompson, Pinckney, Henderson 1892
Vance, A. Morgan, Louisville 1892
Violette, J. D., Williamstown 1888
Wathen, W. H., Louisville 1883
Wiley, E. M., Harrodsburg 1888
Williams, Jno. M., Louisville 1893
Willis, S. W., Jasper 1888
Wilson, John M., Williamstown 1888

LOUISIANA

Allen, Thomas J., Shreveport 1885
Archinard, P. E., New Orleans 1885
Austin, W. G., Quarantine 1885
Billen, D. H., Shreveport 1885
Chaillé, S. E., New Orleans 1879
Czarnowski, O., New Orleans 1885
Dickson, W. L., Rush Point 1884
Egan, J. C., Shreveport 1877
Elliot, J. B., New Orleans 1892
Formento, F., New Orleans 1890
Fox, D. R., Jesuits' Bend 1885
Friedrich, G. J., New Orleans. 1884
Gazzo, J. B. C., Thibodeaux 1884
Haas, W. D., Haasville 1892
Harrell, R. F., Ruston 1894
Henry, S. L., New Orleans 1878
Jones, Joseph, New Orleans 1885
McShane, Augustus, New Orleans 1893
Mataa, R., New Orleans 1885
Monette, G. N., New Orleans 1884
Munday, J. C., Lake Charles 1892
Owens, C. D., La Compte 1885
Parham, F. W., New Orleans 1886
Pugh, B., Napoleonville 1885
Souchon, E., New Orleans 1885
Stewart, C. S., Amite City 1892
Sutherlin, W. K., Mansfield 1889
Seydewitz, P. von, New Orleans 1885
White, W. D., Abbeville 1885

MAINE

Bradford, E. F., Mechanics Falls 1892
Cobb, Moses B., Biddeford 1892
Dunn, B. F., Portland 1891
Estabrook, T. L., Rockland 1879
Ferguson, F. B., Deer Isle 1893
Foster, Chas. W., Woodford 1892
Foster, T. A., Portland 1882

Fuller, A. J., Bath 1878
Garcelon, A., Lewiston 1873
Gordon, S. C., Portland 1883
Hennessey, D., Bangor 1892
Hersom, Jane L., Portland 1893
Hitchcock, F. E., Rockland 1880
Hunter, Samuel R., Machias 1889
Judkins, E. H., Portland 1894
Laughton, S., Bangor 1876
Maybury, W. J., Saco 1895
Neal, J. H., Sanford 1892
Parsons, W. H., Damariscotta 1893
Peaslee, C. A., Wiscasset 1891
Robinson, D. A., Bangor 1892
Small, J. M., Lewiston 1880
Smith, A. R. G., N. Whitefield 1892
Snow, A. P., Winthrop 1876
Thayer, F. C., Waterville 1884
Weeks, S. H., Portland 1876

MARYLAND

Anderson, E., Rockville 1891
Ashby, T. A., Baltimore 1884
Bevan, C. F., Baltimore 1884
Biedler, H. H., Baltimore 1889
Bombaugh, C. C., Baltimore 1884
Chamberlain, J. E. M., Easton 1880
Chambers, J. W., Baltimore 1884
Chancellor, C. W., Baltimore 1891
Chisolm, J. J., Baltimore 1880
Cooke, T., Baltimore 1880
Dunning, Fred, Easton 1893
Eastman, L. M., Baltimore 1877
Friedenwald, A., Baltimore 1884
Gardner, W. S., Baltimore 1891
Gibbons, J. E., Baltimore 1884
Hammett, S. B., Bowens 1892
Hartman, J. H., Baltimore 1884
Hinrichsouse, J. W., Hagerstown 1892
Jacobs, C. C., Frostburg 1892
Kelley, H. A., Baltimore 1888
Latimer, T. S., Baltimore 1884
McComas, J. L., Oakland 1889
Macgill, C. G. W., Catonsville 1884
Mackenzie, J. N., Baltimore 1884
Martinet, J. F., Baltimore 1891
Morris, John, Baltimore 1868
Neff, J., Baltimore 1881
Opie, T., Baltimore 1884
Osler, W., Baltimore 1889
Powell, A. H., Baltimore 1881
Reynolds, H. T., Baltimore 1875
Reynolds, George B., Baltimore 1889
Riggs, G. H., St. Denis 1893
Rohé, G. H., Catonsville 1884
Roman, S. T., Conowingo 1884
Rowe, M., Deal's Island 1891
Sellman, W. A. B., Baltimore 1880
Skilling, M. Q., Lonaconing 1888
Smith, A. P., Baltimore 1883
Smith, W. F., Baltimore 1891
Steuart, Jas., Baltimore
Stoner, Geo. W., Baltimore 1892
Streett, D., Baltimore 1890
Taneyhill, G. Lane, Baltimore 1884
Thomas, G., Baltimore 1891
Tiffany, L. McL., Baltimore 1891
Uhler, J. R., Baltimore 1876
Williams, Arthur, Elk Ridge 1889

MASSACHUSETTS

Abbott, S. W., Wakefield 1889
Adams, J. F. A., Pittsfield 1881
Ames, R. P. M., Springfield 1892
Andrews, Robert R., Cambridge 1889
Andrews, W. H., Springfield 1890
Barrett, W. M., Westborough 1880
Bass, William, Lowell 1878
Baxter, E. K., Boston 1893
Belt, Charles B., Boston 1888
Bemis, Merrick, Worcester 1892
Blake, C. A. Bridgewater 1892
Blodgett, Albert G., West Brookfield 1889
Bowen, C. W., Westfield 1892
Bowen, S., Boston 1892
Bradford, E. H., Boston 1888
Briggs, E. C., Boston 1883
Brown, Wesley E., Gilbertsville 1887
Bullard, W. M., Boston 1883
Bush, J. F., Boston 1884
Bychower, Victor, Boston 1892
Calkins, Marshall, Springfield 1866
Carolin, W. T., Lowell 1884
Chamberlain, C. N., Lawrence 1876
Chamberlain, M. L., Boston 1880
Channing, W., Brookline 1880
Chenery, E., Boston 1885
Clark, Aug. P., Cambridgeport 1880
Cornish, A., New Bedford 1887
Cottrell, S. P., Boston 1889
Cowles, Edward, Somerville 1878
Cunningham, Thos. E., Cambridge 1894
Davis, G. W., Holyoke 1891
Davis, Wesley, Worcester 1889
Davidson, K. M., Boston 1892
Dearing, T. Haven, Braintree 1887
Dunbar, E. F., Boston 1891
Dwelly, J., Fall River 1884
Eastman, Chas. A., Hudson 1890
Edes, Robt. T., Jamaica Plains 1889
Fisk, Cyrus M., Lowell 1889
French, Geo. M., Malden 1889
Fuller, G. E., Monson 1892
Gage, Homer, Worcester 1894
Galligar, E. F., Taunton 1889
Garland, George M., Boston 1885
Gay, George W., Boston 1889
Gavin, M. F., Boston 1884
Giddings, T., Housatonic 1876
Gerry, E. P., Suffolk 1889
Gilbert, J. H., Quincy 1876
Goodman, S., Boston 1892
Gordon, J. A., Quincy 1883
Gould, Clark S., Norwood 1893
Graham, Douglas, Boston 1890
Hubbard, F. A., Taunton 1889
Hunt, David, Boston 1880
Hyde, G. S., Boston 1865
Irish, J. C., Lowell 1878
Irwin, Fairfax, Boston
Jackson, J. H., Fall River 1884
Janes, D. W., Boston 1877
Jefferson, H. P., Lowell 1884
Jones, Geo. W., Cambridgeport 1892
Johnson, John W., Boston 1887
Kingsbury, A. D., Boston 1893
Knowlton, Chas. D., Boston 1894
Lancaster, W. B., Wellesley Hill 1892
Leavitt, W. W., Pittsfield 1891
Louis, Isaac, Boston 1889
Marcy, H. O., Boston 1876
Martin, G. A., Franklin 1889
Maynard, John P., Dedham 1889
Mercer, W. M., Pittsfield 1884
Miner, D. W., Ware 1878
Nichols, A. H., Boston 1890
Norris, A. L., Cambridgeport 1876
Parsons, F. S., Northampton 1889
Paddock, F. K. Pittsfield 1880
Parker, M. G., Lowell 1877
Parsons, F. S., Northampton 1889
Pattee, A. F., Boston 1884
Pinkham, Jos. G., Lynn 1889
Porter, Chas. B., Boston 1889
Presbrey, Silas D., Taunton 1889
Putnam, J. M., Chelsea 1880
Ransom, N. M., Somerville 1889
Rice, J. Marens, Worcester 1889
Robinson, W. S., Taunton 1880
Rotch, T. M., Boston 1881
Ruddick, W. H., S. Boston 1894
Sawyer, F. A., Wareham 1873
Shackford, C. H., Chelsea 1880
Shattuck, Frederick C., Boston 1888
Sinclair, A. D., Boston 1885
Standish, Miles, Boston 1889
Swift, L. C., Pittsfield 1886
Thompson, G. N., Boston 1889
Thompson, R. J., Fall River 1894
Tobey, G. L., Lancaster 1891
Townsend, George J., South Natick 1870
Tracy, Edward A., Boston 1893
Tuttle, A. H., Cambridge 1893
Vaughan, Chas. E., Cambridge 1884
Vermyne, J. J. B., New Bedford 1880
Walcott, Henry P., Cambridge 1888
Warren, Chas. E., Boston 1884
Warren, John C., Boston 1889
Webber, F. W., Newton 1883
White, H. C., East Somerville 1884
Williams, J. L., Boston 1881
Woodbridge, L. D., Williamstown 1888
Woods, J. Henry, Brookline 1889

MICHIGAN

Aaron, C. D., Detroit 1892
Albright, Joseph, Grand Rapids 1888
Alvord, A. W., Battle Creek 1882
Anderson, W. S., Detroit 1892
Armstrong, O. S., Detroit 1891
Avery, John, Greenville 1885
Bachman, N. E., Stanton 1883
Baker, Chas. H., Bay City 1892
Baker, H. B., Lansing 1874
Barnes, H. B., Ionia 1851
Barnes, W. L., Ionia 1892
Beagle, L. N., Flint 1892
Belknap, S., Niles 1886
Bell, J., Benton Harbor 1874
Bennett, E. O., Wayne 1884
Berry, H. G., Romeo 1892
Bigelow, C. P., Grand Rapids 1892
Bigham, Earle, Grand Rapids 1892
Bliss, Lyman W., Saginaw 1874
Booth, C. E., Escanaba 1893
Bolse, Eugene, Grand Rapids 1880
Book, J. B., Detroit 1870
Bosman, J. W., Kalamazoo 1892
Brady, M., Detroit 1892
Brady, John, Grand Rapids 1874
Bradley, J. B., Eaton Rapids 1892
Brainard, I. M., Alma 1890
Brand, W. J., Detroit 1892
Breakey, W. F., Ann Arbor 1877
Briggs, Thomas H., Battle Creek 1888
Brodie, B. P., Detroit 1892
Brown, F. H., Ann Arbor 1892
Brumme, Carl, Detroit 1874
Buckham, J. N., Flint 1883
Bulson, A. E., Jackson 1893
Burr, C. B., Pontiac 1892
Burtless, W. E., St. Clair 1884
Campbell, D. M., Detroit 1892
Campbell, O. B., Ovid 1892
Campbell, D. S., Detroit 1892
Carnes, G. D., South Haven 1892
Carrier, A. E., Detroit 1893
Carrow, F., Ann Arbor 1891
Carstens, J. H., Detroit 1876
Case, H. R., Grand Blanc 1884
Catlin, S., Tecumseh 1889
Chamberlain, G. V., Flint 1892
Chapin, A. B., Mt. Clemens 1892
Chapin, E. B., Grass Lake 1889
Chapman, E. A., Walled Lake 1892
Chapman, H. S., Pontiac 1892
Chittlick, W. R., Detroit 1892
Christian, E. P., Wyandotte 1876
Clarke, J. E., Detroit 1892
Cleland, Henry A., Detroit 1892
Cleland, J. Jr., Detroit 1892
Collier, E. H., Battle Creek 1892
Collier, James M., Plymouth 1892
Connery, W. S., East Saginaw 1893
Connor, L., Detroit 1874
Cook, J. M., Muskegon 1893
Corcoran, J. S., Ubly 1892
Corcoran, J. P., Detroit 1892
Cowles, A. G., Durand 1892
Cree, W. J., Detroit 1891
Crouch, G. W. Shaftsbury 1892
Crotser, L. S., Edmore 1892
Daken, D. L., Detroit 1892
Daray, B., Mayville 1892
Darling, C. G., Ann Arbor 1892
Decamp, Wm. H., Grand Rapids 1867
Dellenbaugh, C. C., Portland 1877
De Vere, J. A., Grand Rapids 1892
Dock, Geo., Ann Arbor 1890
Dodge, W. T., Big Rapids 1892
Dougan, W. T., Niles 1889
Douglas, Chas., Detroit 1892
Drake, A. P., Hastings 1883
Duffield, George, Detroit 1892
Duffield, S. P., Dearborn 1883
Dunlap, Harley M., Battle Creek 1888
Earle, G. W., Hermansville 1878
Eaton, Edwin, Hudson 1892
Edie, T. O., Grand Rapids 1892
Elliott, J. M., Hickory Corners 1881
Elliott, J. L., Bay City 1892
Emerson, J. E. Detroit 1887
Fairbank, H. C., Flint 1873
Finlayson, A. N., Detroit 1893
Flinterman, John, Detroit 1892
Florentine, F. B., E. Saginaw 1886
Forsyth, A. H., Lake View 1893
Frank, Chas. P., Detroit 1883
Freneb, S. S., Battle Creek 1877
Frothingham, G. E., Detroit 1874
Fuller, Wm., Grand Rapids 1892
Gailey, J. K., Detroit 1892
Gardner, E. D., Richfield 1892
Garwood, Alonzo, Cassopolis 1887
Gamber, W. P., Stanton 1894
Gerry, Harriet A., Detroit 1892
Gibbs, Henneage, Ann Arbor 1892
Gillan, S. E., St. Johns 1892
Gilman, R. W., Detroit 1892
Graves, Schuyler, Grand Rapids 1892
Gray, M. W., Pontiac 1892
Greene, D. M., Grand Rapids 1892
Greene, G. H., Marshall 1886
Greenshields, Wm., Romeo 1874
Griswold, J. B., Grand Rapids 1876
Griswold, L. S., Big Rapids 1892
Groner, F. J., Grand Rapids 1884
Grover, Fred, Fraser 1892
Guillot, H. C., Pontiac 1892
Gunsalus, Kenneth, Detroit 1892
Hartz, H. J., Detroit 1893
Haugbey, W. H., Battle Creek 1892
Hazelwood, A., Grand Rapids 1874
Hebard, E. A., Grand Rapids 1884
Henderson, Edw., Detroit 1892
Herdman, W. J. Ann Arbor 1883
Hitchcock, C. W. Detroit 1891
Hough, F. S., Detroit 1892
Huber, C. G., Ann Arbor 1890
Hume, A. M., Owasso 1892
Huson, Florence, Detroit 1892
Imrie, A. W., Detroit 1892
Inglis, David, Detroit 1890
Ingram, A. R., Argentine 1892
Irwin, J. L., Detroit 1892
Ives, Augustus, Detroit 1892
Jenkins, J. F., Tecumseh 1883
Jenks, E. W., Detroit 1863
Jennings, Charles G., Detroit 1888
Jensen, P. C., Manistee 1891
Johnson, G. K., Grand Rapids 1873
Johnston, R., Milfred 1892
Kaiser, A., Detroit 1876
Keating, J. W., Ann Arbor 1892
Kellogg, J. H., Battle Creek 1882
Kiefer, Herman, Detroit 1890
Kimball, Amie G. B., Jackson 1878
Kimball, A. H., Battle Creek 1889
Kirkland, R. J., Grand Rapids 1892
Kremers, H., Holland 1892
La Ferte, Daniel, Detroit 1888
La Crone, A., Kalamazoo 1892
Lamb, E. E., Republic 1893
Langlois, T. J., Wyandotte 1874
Laraway, G. L., Emery 1892
Lathrop, Henry K., Royal Oak 1884
LeBaron, R. Pontiac 1887
Law, D. H., Detroit 1892
Lawrence, R. R., Hartford 1892
Lewis, C. H., Jackson 1877
Lindsay, Kate, Battle Creek 1886
Longyear, H. W., Detroit 1892

Lowry, G. W., Hastings 1887
Lupinsky, H., Grand Rapids 1892
Lyster, H. F., Detroit 1881
McCarroll, Wm., Pontiac 1892
McColl, H., Lapeer 1874
McDonnell, Otto, Lowell 1892
McGraw, T. A., Detroit 1874
McHench, W. J., Brighton 1883
McLean, Angus, Detroit 1892
McLeay, D. D., Prairieville 1883
McPherson, J. A., Grand Rapids 1892
Maclean, D., Detroit, ... 1875
MacRae, John, Central Mine 1890
Manton, W. P., Detroit 1892
Maire, Lewis E., Detroit 1887
Mann, F. W., Detroit 1891
Marsh, W. C., Quincy 1892
Martin, C. M., Belding 1883
Martin, J. N., Ann Arbor 1892
Mason, W. F., Berrios Springs 1892
Metcalf, W. F., Detroit 1890
Mills, H. R., Port Huron 1874
Minar, E. G., Bay City 1892
Miner, S. G., Detroit 1891
Moran, G. W., Detroit 1893
Moore, M. T., Richmond 1893
Mulheron, J. J., Detroit 1887
Munson, J. D., Traverse City 1878
Murray, R. N., Flint 1876
Myers, F. C., Kalamazoo 1892
Nancred, C. B., Ann Arbor 1891
Newark, W. E., Charlotte 1892
Newell, James, Detroit 1892
Nichols, A. W., Greenville 1883
North, L. G., Tecumseh 1894
North, J. V., Jackson 1874
Odell, R. W., Detroit 1892
O'Donnell, D. H., Detroit 1892
Osborn, H. B., Kalamazoo 1876
Ostrom, S. C., Saginaw 1892
Oven, A. G., Petoskey 1892
Palmer, E. A., Hartford 1883
Parker, Delos L., Detroit 1888
Patterson, P. D., Charlotte 1878
Pease, George C., Fulton 1888
Pelletier, L. A., Manistee 1892
Perkins, J., Owasso 1882
Peterson, R., Grand Rapids 1892
Pettyjohn, E. S., Alma 1893
Phillips, H. H., Vandalia 1882
Phippen, S. S. C., Owasso 1892
Plessner, Lewis, Bay City 1893
Pollard, J. W., St. Johns 1893
Pomeroy, E. H., Calumet 1892
Porter, J. A., Brooklyn 1892
Pratt, Foster, Kalamazoo 1874
Pressy, A. J., Grand Rapids 1892
Rausler, S. J., Detroit 1892
Renaud, G. F., Detroit 1892
Richmond, P. E., Mt. Pleasant 1887
Ricker, A. W., Fenton 1892
Robbins, F. W., Detroit 1892
Robinson, Wm. J., Lapeer 1888
Rogers, A. S., Vassar 1892
Roller, L. A., Grand Rapids 1883
Root, P. S., Monroe 1892
Rose, G. L., Decatur 1881
Rutherford, F. A., Grand Rapids 1890
Ryno, W., Benton Harbor 1892
Sabin, M., Centerville 1875
Sample, C. H., East Saginaw 1893
Schaberg, H. H., Kalamazoo 1887
Schon, E., Detroit 1892
Schurtz, Perry, Grand Rapids 1883
Scurr, W. R., Detroit 1892
Seeley, A. L., Mayville 1892
Seely, Oscar F., Climax 1887
Shillito, Fred, Marcellus 1890
Shoemaker, J. S., New Lothrop 1893
Shurley, E. L., Detroit 1874
Simpson, Irwin, Kalamazoo 1887
Small, S. I., Saginaw 1892
Smart, W. N., Muskegon 1892
Smith, E. B., Detroit 1892
Smith, Eugene, Detroit 1873
Smith, H. E., Detroit, ... 1874
Snook, J. M., Kalamazoo 1880
Southworth, C. T., Monroe 1889
Spalding, F. A., Detroit 1892
Spencer, C. E., Fort Gratiot 1874
Spencer, R. H., Grand Rapids 1892
Sprague, Wm. B., Detroit 1888
Stealey, A. R., Charlotte 1893
Steinbrecher, A. H., Detroit 1892
Stockwell, C. B., Port Huron 1887
Stone, D. F., Bay City 1893
Strong, E. B., Byron Center 1893
Swaney, H. N., Grand Lodge 1893
Tappey, E. T., Detroit 1892
Taylor D. B., Pontiac 1892
Taylor, J. E., Ovid 1892
Thomason, H. D., Albion 1884
Thüner, A., Detroit 1892
Tibbals, F. B., Detroit 1892
Topping, G. W., DeWitt 1872
Tupper, Horace, Bay City 1893
Turner, H. J., Wayland 1893
Van der Laan, J., Muskegon 1887
Van Zwaluwenberg, C., Kalamazoo 1892
Vaughan, O. M., Covert 1887
Vaughan, V. C., Ann Arbor 1883
Voorhees, G. V., Detroit 1876
Wade, D. W. C., Holly 1887
Walker, H. O., Detroit 1880
Walker, Robt. S., Beacon 1893
Walter, H., Eaton Rapids 1884
Wanty, Emma N., Grand Rapids 1893
Ward, W. E., Fenton 1887
Welsh, D. E., Grand Rapids 1884
Whalen, M. E., Paw Paw 1892
White, John E., Clinton 1892
Wilkens, S. M., Eaton Rapids 1892
Williams, G. S., Muskegon 1893
Williams, H., East Saginaw 1883
Willson, J. C., Flint 1892
Wilson, W. J., Detroit 1892
Winter, James A., Detroit 1892
Wood, William, Grand Raoids 1892
Work, S. A., Vandalia 1892
Wyman, Hal C., Detroit 1878
Yates, Albert, Washington 1883
Yates, James, Roseville 1890
Young, W. H., Nashville 1892
Young, W. G., St. Ignace 1893

MINNESOTA

Adams, A. S., Rochester 1893
Adams, W. T., Elgin. 1892
Allport, Frank, Minneapolis 1893
Ancker, A. B., St. Paul 1891
Baker, J. F., St. Paul 1882
Beebe, L., St. Cloud 1882
Blackmer, F. A., Albert Lea 1884
Brooks, D. F., St. Paul 1876
Chamberlain, W. A., St. Charles 1893
Chilton, E. Y., Howard Lake. 1886
Conley, A. T., Cannon Falls 1883
Courtney, Walter, Brainerd 1892
Dunsmoor, F. A., Minneapolis 1882
Eitel, G. G., Minneapolis 1891
Ellis, S. A., Staples 1892
Ferro, C. M., Tracy. 1882
Fliesburg, Oscar A., St. Paul 1892
Flinn, W. D., Red Wood Falls 1883
Fulton, J. F., St. Paul 1883
Geer, E. F., St Paul 1892
Giddings, A. N., Anoka. 1884
Gilman, A. O., St. Cloud 1882
Green, C. L., St. Paul 1894
Gronwald, C., Norway P. O. 1889
Hand, W. R., Kasota 1892
Hewitt, Charles N., Red Wing 1882
Hill, C., Pine Island 1882
Hobday, W. A., Duluth 1883
Huntoon, A. F., West Duluth 1886
Jones, D. N., Gaylord 1892
Jones, Talbot, St. Paul 1888
Keyes, E. D., Winona 1892
Kimball, H. H., Minneapolis 1886
Little, J. W., Minneapolis 1887
Mayo, W. J., Rochester 1892
McEwan, S. W., Alexander 1883
McGaughey, J. B., Winona 1872
McLaren, A., St. Paul 1887
Millard, P. H., St. Paul 1881
Mulholland, J. F., Jordan 1892
Noyes, A. A., Minneapolis 1871
Ohage, J., St. Paul 1887
Pine, O. S., St. Paul. 1882
Phelps, R. M., Rochester 1893
Ranson, S. W., Dodge Center. 1882
Rosser, J. C., Grand Rapids 1882
Schad, J. E., St. Paul 1889
Scott, J. W., St. Charles 1890
Senkler, A. E., St. Paul 1886
Staples, Franklin, Winona. 1871
Steen, A. H., Cottage Grove 1882
Stinchfield, A. W., Rochester 1875
Stone, A. J., St. Paul 1881
Sudduth, W. X., Minneapolis 1889
Taylor, H. L., St. St. Paul.
Tomlinson, A. A., St. Peter 1892
Warner, C. F., Mankato 1882
Wheaton, C. A., St. Paul 1882
Whittemore, N. K., Elk River 1884
Witherstine, H. H., Rochester 1887

MISSISSIPPI

Beadles, E. St. Clair, Water Valley 1892
Borroum, A. J., Corinth 1892
Crowther, E. F., Vicksburg 1892
Ewing, C. C., Aberdeen 1879
Fullilove, F. W., Vaiden 1887
Gant, H. A., Water Valley 1890
Guice, N. L., Natchez 1884
Hall, J. C., Anguilla 1877
Henderson, C. R., Deasonville 1883
Howard, R. E., Durant 1880
Jones, Paul T., Corinth. 1892
Kittrell, B. F., Black Hawk 1875
Moore, J. P., Yazoo City 1869
Redus, W. D., Port Gibson 1893
Rowland, P. W., Coffeeville 1886
Sanford, W. B., Corinth 1890
Shackelford, J. A., Greenville 1883
Taylor, J. M., Corinth 1873
Taylor, W. A., Booneville 1879
Vaughan, B. A., Columbus 1872
Weissinger, W. S., Hernando 1891

MISSOURI

Allen, J. M., Liberty 1886
Allee, W. S., Olean 1886
Barck, Carl, St. Louis 1893
Barker, A., Charleston 1886
Barnes, A. S., St. Louis. 1891
Berghoff, J. T., St. Joseph 1886
Block, Jacob, Kansas City 1888
Bock, A. F., St. Louis 1886
Bogle, M. A., Kansas City 1882
Bond, Y. H., St. Louis 1886
Borck, E. St. Louis 1881
Bottom, M., Breckenridge 1885
Boulware, T. C., Butler 1885
Brainerd, B. F., Kanaas City. 1890
Bremer, L., St. Louis 1886
Briggs, Waldo, St. Louis 1890
Brokaw, A. V. L., St. Louis 1891
Bronson, I. T., Sedalia 1887
Broome, Geo. W., St. Louis 1886
Brown, Tinsley, Hamilton 1885
Burchard, Easton, Kansas City 1890
Campbell, J. F., Callao 1886
Carpenter, S. F., St. Joseph 1890
Cathcart, Charles P., Kansas City 1887
Cave, E. S., Mexico 1886
Chancellor, Eust., St. Louis 1887
Chapman, A. W., Charleston 1890
Coffee, J. Turner, Steelville 1878
Cordier, A. H., Kansas City 1888
Crow, A. M., Kansas City 1887
Curtman, Charles O., St. Louis 1873
Dalton, H. C., St. Louis 1887
Dean, D. V., St. Louis 1873
Delaney, J. O. F., St. Louis 1880
DeVilbiss, Frank, Spring Garden 1891
Dinney, Z. C., Mt. Vernon 1886
Doyle, T. H., St. Joseph 1878
Drake, N. A., Kansas City 1893
Ducker, J. O. Louisiana 1893
Duncan, J. H., Kansas City.
Engelmann, George J., St. Louis. 1876
Evans, E. C., Sedalia 1886
Evans, W. H., Sedalia 1880
Finley, R. H., Deerfield 1893
Foreman, J. M., Joneaburg 1873
Fry, Frank R., St. Louis 1887
Funkhouser, R. M., St. Louis 1884
Fulton, A., St. Louis 1891
Furney, E. E., St. Louis 1886
Gant, J. O. K., Piattsburg 1886
Gehrung, E. C., St. Louis 1886
Geiger, Jacob, St. Joseph 1888
Glasgow, Frank A., St. Louis 1886
Goben, G. A., Kirksville 1886
Godbey, W., Salem 1886
Goodrich, C. F., New Haven 1886
Gore, David C., Marshall 1886
Graham, A. W., Holstein 1886
Gregory, E. H., St. Louis 1872
Griffith, J. D., Kansas City 1886
Grindon, Joseph, St. Louis 1893
Griswold, S. C., New Haven 1886
Guhman, Nicholas, St. Louis 1886
Hall, C. Lester, Kansas City 1882
Hall, Jos. R., Marshall 1893
Hall, L. T., Fulton 1885
Halley, George, Kansas City 1878
Hamilton, George, Auxvasse 1882
Hauck, E. F., St., Louis 1880
Hawkins, A. S., Monett 1886
Henderson, R. T., Jackson 1880
Hickman, Henry, St. Louis 1887
Highsmith, G. R., Carrollton 1887
Hill, R. J., St. Louis 1884
Hubbard, J. D., Versailles 1890
Hughes, C. H., St. Louis 1880
Hypes, B. M., St. Louis 1885
Irwin, T., Moberly 1884
Isbell, J., Washington 1886
Jackson, T. B., Unionville 1886
Kier, Wm. F., St. Louis 1886
Kessler, S. F., St. Joseph 1892
King, Willis P., Kansas City 1884
Kolbenheyer, Fred., St. Louis 1886
Kuhn, D., St. Louis 1886
Lanphear, Emory, Kansas City 1880
Leeper, C. C., Braymer 1885
Lemoine, E. S., St. Louis 1886
Leonard, H. O., Kansas City 1887
Lewis, B., St. Louis 1890
Lewis, E. R., Kansas City 1885
Loeb, H. W., St. Louis 1892
Logan, J. E., Kansas City 1886
Love, I. N., St. Louis 1883
McCandless, W. A., St. Louis 1886
McClure, J., St. Louis 1886
McIntyre, J. H., St. Louis 1873
Manning, D. J., Marshall 1893
Marsh, J. T., Liberty 1877
Mayger, John, St. Louis 1886
Meisenbach, A. H., St. Louis 1886
Metcalf, W. A., Steelville 1885
Middlekamp, H. H., Warrenton 1886
Miller, A. B., Macon 1886
Miller, George W., Joplin 1885
Miller, John J., St. Louis. 1885
Mitchell, D. L., Cassville 1885
Mitchell, W. F., Lancaster 1886
Mooney, F. B., St. Louis 1886
Mosher, G. C., Kansas City 1890
Mudd, H. H., St. Louis 1873
Mulhall, J. C., St. Louis 1886
Murrell, T. E., St. Louis 1887
Norton, J. J., Monroe City 1886
Ohmann-Dumesnil, A. H., St. Louis 1886
O'Reilly, P. S., St. Louis 1873
Outten, W. B., St. Louis 1873
Overstreet, W. C., Sedalia 1886
Owen, T. W. C., Newburg 1891
Pearson, John S., Louisiana 1886
Pollak, S., St. Louis 1882

Pollmann, L. P., St. Louis 1886
Porter, David R., Kansas City 1888
Porter, W., St. Louis 1882
Post, M. H., St. Louis 1886
Powers, E. M., St. Louis 1886
Prewitt, T. F., St. Louis 1882
Prichard, J. B., St. Louis 1890
Redman, Spence, Platte City 1885
Ridge, Isaac M., Kansas City 1890
Rieger, J. H., Kansas City 1886
Riggs, T. S. Providence 1886
Ring, Frank, St. Louis 1892
Rohlfing, C. G., St. Louis 1886
Rowe, J. M., Charleston 1886
Rowe, Samuel B., St. Louis 1886
Russell, J. W., Longtown 1894
Schauffler, E. W., Kansas City 1880
Schlosstein, A., St. Louis 1886
Shankland, W. M., Clinton 1892
Sharp, Joseph, Kansas City 1888
Shaw, A. B., St. Louis 1886
Short, J. L., St. Louis 1893
Sloan, A. B., Kansas City 1879
Smith, E. V., St. Louis 1886
Spiegelhalter, J., St. Louis 1886
Steele, A. J., St. Louis 1893
Steer, Justin, St. Louis 1886
Tefft, J. E., Springfield 1882
Thatcher, J. P., Plsgah 1886
Thompson, J. H. Kansas City 1885
Tiffany, F. B., Kansas City 1884
Tuholske, H., St. Louis 1885
Tupper, P. Y., St. Louis 1886
Tyree, W. C., Kansas City 1886
Van Note, E. J., Hamilton 1885
Veruon, G. W., Morehouse 1893
Von Quast, E. Kansas City 1890
Wallace, John S., Brunswick 1886
Waters, R. C., Perryville 1886
Wesseler, F. W., St. Louis 1876
Wilson, B. F., Slater 1890
Wilson, A. M., Kansas City 1891
Wilson, W. B. Cape Girardeau 1885
Wood, J. B., Marshall 1886

MONTANA

Adams, F. J., Great Falls 1892
Campbell, W. H. Livingston 1891
Cole, C. K., Helena 1893
Ford, L. C., Lima 1891
King, G. W., Marysville 1893
McKay, McH., White Sulphur Springs . . . 1892
Miller, C. B., Helena 1880
Mitchell, A. H., Deer Lodge 1892
Owings, J. H., Deer Lodge 1892
Penny, H. T., Sand Coulea 1892
Sandow, B. F., Neihart 1894
Riddell, W. C., Elkhorn 1893
Shultz, W. M., Butte 1893
Sligh, J. M., Granite 1892
Welles, G. R., Livingston 1891

NEBRASKA

Anderson, A. B., Pawnee City 1886
Armstrong, J. T., Beatrice 1892
Arthur, M. L., Oakland 1893
Ballard, C. F., Havelock 1892
Benton, B. A., Central City 1892
Boardman, E. O., Overton 1892
Brady, L. M., Oxford 1893
Brother, Ferd, Beatrice 1876
Bryant, DeWitt C., Omaha 1890
Bush, J. C., Wahoo 1888
Butler, F. A., Harvard 1890
Carter, J. O., Lincoln 1882
Coffin, C. E., North Loup 1891
Coffman, V. H., Omaha 1882
Crummer, B. F., Omaha 1882
Cushman, H., Stromaburg 1884
Davis, J. C., Omaha 1892
Dawson, J. O., Lincoln 1883
Denise, J. C., Omaha 1886
Fletcher, E. R., St. Paul 1891
Galbraith, W. J., Omaha 1886
Garten, M. H., Lincoln 1889
Haggard, J. R., Lincoln 1890
Haideman, F. D., Ord 1884
Hall, P. L., Mead 1892
Harrington, H. E., Bertrand 1890
Hasemeier, J. A., Louisville 1892
Hildreth, M. L., Lyons 1890
Humphreys, G. L., Kearney 1878
Hungate, J. B., Weeping Water 1892
Jones, A. F., Omaha 1892
Jones, W. D., Rising City 1893
Kern, W. B., Wood River 1892
Kerr, W. H., Falls City 1892
Keller, A., Falls City 1892
Kirkpatrick, M., South Omaha 1892
Lee, Edward W., Omaha 1882
Leisenring, H. G., Wayne 1892
Link, H., Millard 1880
Livingston, Theo. P., Plattamouth 1887
Long, F. A., Madison 1890
Lord, John P., Omaha 1887
McConaughby, Robert, York 1880
McKeehy, Geo., Red Cloud 1892
Mansfelde, A. S. von, Ashland 1884
Moore, R. C., Omaha 1882
Morris, F. S., McCool Jct 1892
O'Connell, J. M., Ponca 1891
Peabody, J. H., Omaha 1870
Quinn, John H., Gothenberg 1888
Rodgers, W. D., Omaha 1892
Schaufelberger, J. J., Hastings 1892
Shidler, G. W., York 1888
Simmons, G. H., Lincoln 1893
Smith, E., Burchard 1884
Smith, L. B., Fremont 1885
Spaulding, S. K., Omaha 1890
Stevenson, W. J., Winnebago 1892
Stone, I. G., Wahoo 1892
Summers, John E. Jr., Omaha 1887
Sutherland, J. Lue, Grand Island 1894
Tilton, H. R., Fort Omaha 1892
Vanden, George, Seward 1891
White, W. S., Palmyra 1885
Whitten, E. M., Nebraska City 1892
Wilkinson, A. D., Lincoln 1892
Wilkinson, George, Omaha 1893
Woodward, T. H., Lincoln 1890

NEW HAMPSHIRE

Adams, Daniel S., Manchester 1889
Aldrich, W. H., Marlboro 1889
Carvelle, H. D. W., Manchester 1889
Conn, G. P., Concord 1880
Evans, E., Winchester 1880
Erskine, J. B., Colebrook 1892
Gove, Geo. S., Whitefield 1884
Graves, E. E., Boscowen 1884
Houghton, E. J., Claremont 1893
Hyland, J. B., Keene 1889
Lathrop, M. C., Dover 1881
Leach, T. W., New Market 1878
Parsons, J. W., Portsmouth 1870
Richardson, A. P., Walpole 1880
Sanborn, T. B., Newport 1884
Watson, Irving A., Concord 1884
Weymouth, H. A., Andover 1881

NEW JERSEY

Allen, U., Jersey City Heights 1891
Baldwin, H. R., New Brunswick 1880
Bayles, G., Orange 1884
Benjamin, D., Camden 1884
Branin, H. E., Blockwood 1892
Braymer, O. W., Camden 1891
Carman, J. H., Plainfield
Carpenter, A. E., Boonton 1870
Colt, Henry L., Newark 1889
Cooke, H. G., Holmdel 1881
Currie, D. A., Englewood 1876
Dare, Chas. H., Bridgeton 1892
Davis, W. A., Camden 1884
Dickinson, G. K., Jersey City 1880
Donges, J. W., Camden 1884
Edge, B., Jersey City 1891
Elmer, Wm., Trenton 1891
Elmer, H. W., Bridgeton 1884
English, D. C., New Brunswick 1870
Fisler, S. F., Clayton 1892
Fitch, Thos. S. P., Orange 1889
Gross, O. B., Camden 1880
Hamill, E. H., Newark 1893
Hinkley L. S., Newark 1887
Hough, H. Page, Rahway 1889
Ill, Ed. J., Newark 1887
Kirkbride, M. F., Spring Lake Beach 1892
Johnson, W. B., Patterson 1891
Korneman, H. A., Newark 1888
McAllister, Alexander, Camden 1893
McGill, J. D., Jersey City 1872
Marsh, E. J., Paterson 1891
Mathewson, W. B., Somerville 1889
Merrill, J. R., Paterson 1892
Neer, H. C., Park Ridge 1890
Newton, R. C., Montclair 1892
Palm, H. F., Camden 1893
Pettit, A., Elizabeth 1891
Pierson, Wm., Orange 1876
Probasco, John B., Plainfield 1888
Quimby, I. N., Jersey City 1872
Reading, G. E., Woodbury 1892
Reed, B., Atlantic City, ... 1884
Ryerson, J. G., Boonton 1891
Skinner, D. M., Belleville 1880
Smith, D. W., Newark 1876
Southard, L., Newark 1876
St. John, D., Hackensack 1892
Stockton, Charles S., Newark 1889
Straley, S. B., Andover 1892
Taylor, H. G., Camden 1870
Terry, J. W., Englewood 1887
Voorhees, C. H., New Brunswick 1887
Waddington, B. A., Salem 1890
Walters, John, Port Oram 1892
Ward, Arthur, Newark 1889
Watson, W. P., Jersey City 1889
Way, Eugene, Dennisville
Welch, G. T., Passaic 1884
Wikoff, J. H., Princeton 1884
Williamson, N., New Brunswick 1880
Wrightson, J. T., Newark 1884
Young, J. C., Newark 1893

NEW MEXICO

Atkins, F. H., East Las Vegas 1892
Kaster, J. P., Albuquerque 1888
Joynar, W. T., Roswell 1892
Shaw, E. B., East Las Vegas 1886
Tipton, W. R., Las Vegas 1883
Welch, J. P., Belen 1893
Winslow, C. E., Albuquerque 1887

NEW YORK

Ainsworth, H. R., Addison 1879
Anderton, W. B., New York 1883
Andrews, J. B., Buffalo 1884
Armstrong, S. T., New York 1885
Arnold, E. S. F., New York 1863
Ayres, Douglas, Fort Plain 1892
Bacon, C. G., Fulton 1855
Backus, Ogden, Rochester 1892
Bailhache, P. H., U. S. M. H. S. Staten Island. 1876
Baker, B. N., Rhinebeck 1894
Baugs, L. B., New York 1880
Bates, Xyris, Poughkeepsie 1885
Bellows, G. A., Waterloo 1891
Benham, J. C., Hudson 1884
Bennett, T. W., Jeffersonville 1885
Biggs, H. M., New York 1884
Birsdall, G., N. Brookfield 1880
Bishop, H. M., S. Brooklyn 1882
Blair, L. P., McDonough 1892
Bleyer, J. M., New York 1889
Bloodgood, D., Brooklyn 1892
Bodkin, D. G., Brooklyn 1876
Boldt, H. J., New York 1893
Bontecou, R. B., Troy 1853
Bosworth, F. H., New York 1884
Boyd, James P., Albany 1880
Bozeman, N. New York 1884
Briggs, A. H., Buffalo 1884
Brown, John P., Nunda 1892
Brown, U. H., Syracuse
Brown, J. W., Mottville 1880
Brush, E. F., Mt. Vernon 1884
Bryant, J. D., New York 1880
Bulkley, L. D., New York 1874
Burchard, T. H., New York 1880
Burge, J. H. H., Brooklyn 1887
Burrall, F. A., New York 1872
Burrell, D. R., Canandaigua 1878
Burton, M. H., Troy 1869
Carpenter, H. W., Onelda 1885
Case, M., Oneonta 1891
Clum, F. D., Cheviot 1893
Coakley, J. B., Buffalo 1883
Cock, I. S., New York 1848
Coffin, Lawrence, Brooklyn 1894
Colvin, D., Clyde 1878
Cook, Chas. D., Brooklyn 1886
Contant R. B., Tarrytown 1885
Congdon, C. E., Buffalo 1892
Conner, M C. Middletown 1892
Crevelling, J. P., Auburn 1890
Crocker, Edw., Narrowsburg 1894
Cronyn, John, Buffalo 1878
Curtis, H. H., New York 1889
Cutter, E., New York 1871
Cutter, J. A., New York 1888
Dagenais, A., Buffalo 1884
Dallas, A., New York 1893
Daniels, C. M., Buffalo 1884
Davis, J. G., New York 1890
De Garmo, Wm. B., New York 1889
DeLaney J. P., Geneva 1894
Denison, C. E., New York 1889
Dennis, F. S., New York 1883
DeWitt, Byron, Oswego 1876
De Zouche, Isaac, Gloversville 1885
Didama, H. D., Syracuse 1864
Dolley, Sarah R. A., Rochester 1889
Douglas, Geo., Oxford 1889
Doyle, G., Syracuse 1880
Dudley, A. P., New York 1884
Durant, G., New York 1876
Eccles, R. G., Brooklyn 1888
Edwards, A. S., Syracuse 1878
Edwards, G. A., Syracuse 1884
Einhorn, Max, New York 1893
Ellinwood, A. G., Attica 1880
Eliot, E., New York 1880
Farrington, J. M., Binghamton 1889
Fell, Geo. E., Buffalo 1889
Fenno, Henry M., Rochester 1889
Ferguson, E. D., Troy 1880
Field, M. D., New York 1894
Flandrau, T. M., Rome 1878
Folwell, M. B., Buffalo 1878
Forbes, W. H., Oscawana 1888
Fowler, Geo. R., Brooklyn 1880
Frederick, C. C., Buffalo 1888
Freeland, N. H., Tarrytown 1876
French, S. H., Amsterdam 1883
Furman, J. H. Tarrytown 1892
Gibbons, P. J., Syracuse 1892
Gibney, Virgil P., New York 1881
Gilbert, Horatio, Horuellsville 1892
Gleitsmann, J. W., New York 1879
Glidden, Charles H., Little Falls 1889
Goelet, A. H., New York 1893
Gouley, J. W. S., New York 1873
Green, S. S., Buffalo 1893
Gulick, C. R., Brooklyn 1894
Guy, J. D., Chenango Forks 1892
Hagey, J. M., Mt. Morris 1889
Hall, Nelson F., Fulton
Hammer, Charles, Schenectady 1889
Hanks, H. T., New York 1893
Harrington, D. W., Buffalo 1887
Harrison, G. T., New York 1881
Hart, I. F., Elmira 1876
Haynes, J. U., Cohoes 1894
Heath, W. H., Buffalo 1892
Hendrick, H. C. Mo., Granville 1876
Hewitt, A., Saratoga Springs 1894
Hinton, J. H., New York 1876
Hodgman, Abbott, New York 1889
Holmes, Martha C., New York 1889
Hovey, B. L., Rochester 1876

Hubbard, S. T., New York 1880
Hubbell, A. A., Buffalo. 1892
Huestis, W. B., Kiskatom. 1894
Hulette, G. S., Arcade 1894
Huu, Thomas, Albany 1853
Ingraham, H. D., Buffalo. 1893
Jackson, V. H., New York 1891
Jacobson, N., Syracuse. 1890
Jamison, J. S., Hornellsville 1885
Janvrin, J. E., New York. 1880
Jenkins, N. E., Auburn 1881
Johnson, T. M., Buffalo. 1884
Judson, A. B., New York 1876
Keefer, Chas. W., Mechanicsville 1892
Kempe, J. J., Rochester 1883
Kenyon, Frank, Scipio. 1880
King, Ferdinand, New York 1890
King, J. K., Watkins 1893
Kittinger, M. G., Lockport 1883
Knapp, Herman, New York 1892
Landon, N. E., Newark. 1885
Leale, Charles A., New York. 1876
Leamirg, J. R., New York 1880
Leaning, J. K., Cooperstown. 1884
Leffingwell, E. D., Watkins. 1893
Leighton, N. W., Brooklyn 1885
Lester, E., Seneca Falls 1889
Lincoln, D. F., Geneva 1880
Lloyd, T. M., Brooklyn 1892
Lockwood, J. W., Philmont 1894
Long, A. J., Whitehall 1878
Lundgren, C. E., Jamestown. 1886
Lung, J. B., Brooklyn 1889
Lusk, W. T., New York. 1884
Lusk, Z. J., Waraaw. 1893
Lyman, E. S., Sherburne 1876
McAlpin, D. H., New York. 1894
McClellan, E. S., New York 1891
McCollom, Wm., Brooklyn. 1889
McGillicuddy, T. J., New York. 1891
McLean, LeRoy, Troy. 1870
McLeod, S. B. W., New York 1872
McPherson, G. W., Lancaster 1892
Manley, Thomas H., New York. 1889
Martin, J. H., Otego 1894
Martine, Godfrey R., Glens Falls. 1887
Mason, L. D., Brooklyn
Mattison, J. B., Brooklyn 1891
Meier, G. C. H., New York 1889
Mercer, J. A., Syracuse. 1878
Miller, A. B., Syracuse 1892
Milliken, S. E., New York 1892
Minard, Eliza J. C., Brooklyn 1889
Moore, E. M., Rochester 1849
Morris, R. T., New York 1889
Munn, J. P., New York 1883
Murray, D. H., Syracuse 1891
Murray, S. J., New York 1892
Mynter, H., Buffalo. 1892
Neftel, W. B., New York 1870
Newcomb, James E., New York 1892
Newman, R., New York. 1872
Nichell, H., Buffalo 1863
North, N. L., Brooklyn 1885
Noxon, D. C., Bloomingburg. 1884
Noyes, H. D., New York 1864
Nutter, W. F., Newark 1894
O'Brien, M. C., New York 1891
Ostrander, G. A., Brooklyn. 1892
Orton, J. G., Binghamton. 1883
Owen, May, Brooklyn 1890
Page, R. C. M., New York 1881
Palmer, C. N., Lockport 1878
Park, Roswell, Buffalo 1877
Parsons, John, Kings Bridge. 1880
Perry, John G., New York 1872
Phelps, W. C., Buffalo 1878
Porteous, J. G., Poughkeepsie 1892
Preston, B. I., Rochester 1883
Price, H. R., Brooklyn 1883
Robb, W. H., Amsterdam 1878
Robinson, A. R., New York 1886
Rocheater, D., Buffalo 1894
Roe, J. O., Rocheater 1880
Rogers, H. R., Dunkirk. 1868
Rubison, E. T., Amsterdam 1893
Ruggles, A. D., New York 1889
Rushmore, J. D., Brooklyn 1881
Sawyer, Conant, Auburn. 1889
Sayre, L. A., New York 1848
Sayre, R. H., New York 1887
Schaeffer, E. M., Dansville 1893
Schmidt, H. E., White Plains 1880
Schoonover, W., New York 1860
Seaman, F. G., Seneca Falls 1889
Segur, Avery, Brooklyn 1893
Selden, Robert, Catskill 1889
Sell, E. H. M., New York 1867
Seymour, W. W., Troy 1884
Sharer, John P., Little Falls 1880
Shepard, C. H., Brooklyn 1890
Shrady, J., New York 1880
Silver, H. M., New York 1880
Skinner, S. A., Hoosick Falls 1883
Small, J. W., New Rochelle. 1891
Smith, J. L., New York. 1880
Smith, J. R., U. S. A., New York Harbor . . 1874
Smith, G. M., New York 1858
Smith, Stephen, New York. 1884
Squibb, E. H., Brooklyn 1889
Squibb, E. R., Brooklyn 1889
Stein, A. W., New York. 1870
Stevens, George L., New York 1881
Stewart, F. E., Watkins 1882
Stockton, C. G., Buffalo 1888
Stockschlaeder, P., Rochester 1892
Strong, C. J., New York 1894
Strong, O. C., Cohien 1894
Strong, T. D., Westfield. 1878
Suter, A. W., Herkimer. 1893
Sullivan, J. D., Brooklyn 1886
Sutton, H. C., Rome. 1888
Thomas, T. G., New York 1880
Townsend, M. W., Bergen. 1876
Townsend, W. N., New York 1884
Traver, R. D., Troy
Tremaine, Wm. S., Buffalo 1878
Tripp, C. H., Clinton Corners 1878
Truax, J. G., New York. 1889
Tucker, C. P., New York 1894
Vanderveer, A., Albany. 1879
Vanderveer, J. R., Monroe 1878
Van de Warker, E., Syracuse. 1886
Van Wyck, R. C., Hopewell Junction 1889
Wales, T. A., Elmira 1880
Ward, R. H., Troy 1888
Warner, J. W., New York. 1894
Watson, W. S., Matteawan 1891
Webb, J. A., E. Meredith 1889
Webster, W. B., Schuylerville 1893
Weeks, Jno. E., New York 1892
Wenz, J., Lancaster. 1882
Weston, A. T., New York 1894
Wieber, Geo., Brooklyn. 1889
Wiggin, F. H., New York. 1889
Wight, J. S., Brooklyn 1880
Williams, W. H., Brooklyn. 1860
Wilson, Thos., Claverack 1893
Witthaus, R. A., New York. 1893
Woodruff, E. G., Watkins. 1893
Woodrnff, R. A., Philmont. 1894
Woodsworth, T. F., Kinderhook. 1892
Wunderlich, F. W., Brooklyn 1880
Wyckoff, C. C., Buffalo. 1863
Wyckoff, R. M., Brooklyn 1889
Wyeth, J. A., New York. 1891
Zabriskie, W. H., Glen Cove, L. I 1891

NORTH CAROLINA

Bagwell, W. H., Pactolus 1891
Battle, S. W., Asheville. 1891
Best, W. L., Johnson's Mills 1892
Cheatham, W. T., Henderson. 1892
Fuller, F. T., Raleigh 1893
Haigh, T. D., Fayetteville. 1885
Harrell, W. J., Aulander 1892
Haywood, H., Raleigh. 1881
Jones, William J., Goldsboro 1889
Kirkman, I. C., Ore Hill 1892
Laird, E. C., Haw River 1892
Lumsden, William J., Elizabeth City 1889
O'Hagan, C. J., Greenville 1872
Patterson, Duncan M., Mangum 1881
Reagan, J. A. Weaverville 1885
Tucker, John H., Henderson. 1887
Von Ruck, Karl, Asheville.

OHIO

Alford, Judson B., Grand Rapids 1888
Allen, Dudley P., Cleveland. 1888
Allen, George M., Cincinnati 1888
Alley, E. H., Toledo 1876
Alvord, R. R., Montpelier. 1892
Ayres, J. H., Urbana 1880
Ayres, S. C., Cincinnati. 1888
Bain, F. D., Kenton. 1884
Baker, A. R., Cleveland. 1888
Barnhill, J. U., Columbus 1891
Barrett, J. E., Wooster 1883
Barton, T. J., Zanesville 1883
Beach, John N., West Jefferson 1883
Beardsley, C. E., Ottawa 1874
Becker, B., Toledo. 1892
Bell, A. E., Zanesville 1888
Benner, Chas. T., Tiffin 1892
Bennett, J. H., Wauseon 1876
Bessey, J. M., Toledo 1888
Bishop, S. P., Delta 1885
Blair, B. H., Lebanon. 1886
Bonifield, C. L., Cincinnati 1893
Bonner, Horace, Dayton 1892
Bossert, J., Washingtonville 1884
Boylan, Joseph E., Cincinnati 1888
Brant, A. C., Canton 1892
Brashear, B. B., Cleveland 1890
Bricker, W. R., Shelby 1883
Briggs, Eldorado, Wilmington. 1888
Brigham, O. S., Toledo 1883
Brockett, A. J., Cleveland 1876
Brooke, G. W., Ellsworth 1883
Brown, Hattie C., Cincinnati 1892
Brown, H. M., Hillsboro 1888
Brown, J. A., Germantown. 1888
Bruehl, Gust., Cincinnati 1871
Brundage, A. H., Xenia 1883
Buckingham, J. M., Springfield 1884
Buckner, James H., Cincinnati 1864
Buechner, W. L., Youngatown. 1882
Bundy, D. B. Middletown 1888
Bunts, F. E., Cleveland. 1892
Burn, J. W., West Union 1884
Byall, H. M., Montpelier 1889
Caldwell, Charles E., Cincinnati 1888
Caldwell, Wm., Fremont. 1883
Carmichael, W. A., Loveland 1888
Carpenter, Julia W., Cincinnati 1888
Case, F. D., Ashtabula 1892
Cassett, M., Cincinnati 1888
Clark, J. H., Mechanicsburg 1888
Clark, M. S., Youngstown 1883
Cleveland, John L., Cincinnati 1889
Cline, J. B., Perintown 1888
Coleman, N. R., Columbus 1888
Collamore, G. A., Toledo 1883
Collins, Milton H., South Charleston 1888
Colter, L. S., Cincinnati 1892
Comegys, C. G., Cincinnati 1881
Cook, G. F., Oxford. 1886
Conklin, S. A., Canton 1873
Conklin, W. J., Dayton 1878
Conner, P. S., Cincinnati 1867
Corson, O. M., Middletown. 1881
Cosgrove, T. M., Auburndale 1883
Craig, J. Harvey, Mansfield 1888
Craver, S. B., Toledo 1892
Culbertson, J. C., Cincinnati 1889
Cullen, G. I., Cincinnati 1892
Cushing, H. K., Cleveland 1878
Custer, L. E., Dayton 1890
Curry, J. H., Toledo 1892
Dandridge, N. P., Cincinnati 1883
Davis, C. W., Cincinnati 1893
Davisson, J. A., Eldorado 1892
Death, H. J., Franklin 1894
De Beek, David, Cincinnati 1893
De Vilbiss, A., Toledo 1888
DeWitt, W. H., Cincinnati 1888
Dickes, Philip, Greenville 1888
Dickey, T. A., Middletown 1888
Dickson, J. A., Ashtabula 1891
Dickson, J. A., Youngstown 1891
Dixon, W. A., Ripley 1892
Dorman, H. W., Ashtabula 1892
Dowling, F., Cincinnati 1891
Duncan, J. A., Toledo 1883
Dunham, Wm. H., Cincinnati 1888
Dunn, O. B., Ironton 1883
Dutton, C. F., Cleveland 1883
Eichberg, J., Cincinnati 1893
Erwin, Alex, Mansfield 1892
Evans, G. B., Dayton 1889
Evans, O., Franklin 1888
Evans, R. P., Franklin 1885
Everhard, N. S., Wadaworth 1874
Everts, O., College Hill 1886
Eyer, Alvin, Cleveland 1893
Faber, C. A., Toledo 1894
Fackler, G. A., Cincinnati 1886
Ferguson, J. W., Canaan 1888
Firestone, W. W., Wooster 1887
Fitzpatrick, T. V., Cincinnati 1892
Fletcher, M. H., Cincinnati 1892
Focht, Wm. H., Tiffin 1887
Forbes, S. F., Toledo 1874
Fowler, S. W., Delaware 1883
Franklin, G. S., Chillicothe 1883
Fraunfelter, J., Canton 1883
French, J. M., Cincinnati 1883
Frew, Wm. C., Coshocton 1887
Gawne, A. J., Sandusky 1883
Gay, N., Columbus 1884
Gehrette, T. M., Deshler 1891
Gibson, R. D., Youngstown 1883
Gibbon, H. B., Tiffin 1892
Gifford, W. R., Toledo 1884
Gilliam, D. Tod, Columbus 1889
Gordon, T. W., Georgetown 1875
Gores, F. C., Cincinnati 1888
Graefe, C., Sandusky 1884
Green, J. H., Troy 1893
Greenamyer, P. S., Orrville 1890
Haines, W. D., Cincinnati 1888
Haiderman, S. S., Portsmouth 1893
Hall, Rufus B., Cincinnati 1888
Hall, W. W., Springfield 1888
Hamer, W. W., Bellefontaine 1890
Hamilton, C. S., Columbus 1891
Hamilton, H. A., Perrysburgh 1884
Hamilton, J. W., Columbus 1880
Hamilton, L. D., Marion 1892
Hamilton, W. D., Columbus 1890
Hardy, N., Massillon 1891
Harmon, Julian, Warren 1883
Harrison, E. B., Napoleon 1874
Hart, B. F., Marietta 1887
Hart, H. A., Wooster 1884
Hart, Samuel, Marietta 1888
Hasencamp, Oscar, Toledo 1892
Hathaway, H., Toledo 1883
Hawn, Enos, Leetonia 1884
Hedges, J. S., Mansfield 1891
Hendley, F. W., Cincinnati 1888
Herrick, H. J., Cleveland 1877
Herrin, N. B., Wilson 1891
Hill, N. S., Neville 1886
Himes, I. N., Cleveland 1876
Hinckley, H. D., Oxford 1888
Hiner, S. B., Lima 1873
Hines, J. A., Van Wert 1888
Hixson, M. M., Dupont 1891
Hoeltge, A., Cincinnati 1883
Hoff J. W., Pomeroy 1883
Holmes, C. R., Cincinnati 1893
Holston, J. G. F., Zanesville 1888
Hoover, T. C., Columbus 1890
Hough, C. A., Lebanon 1888
House, A. F., Cleveland 1892
Hubbard, Thos., Toledo 1892
Hughes, D. E., Delaware 1893
Humiston, W. H., Cleveland 1883
Hunt, A. H., Wooster 1883
Hurd, A., Findlay 1874

Jacobs, W. C., Akron 1883
Jennings, D. R., Cleveland 1891
Johnson, O., Worthington 1883
Johnson, T. M., Canton 1892
Jones, Frank S., Medina 1883
Jones, George E., Cincinnati 1888
Jones, J. D., Newburg 1883
Jones, R. C., Cincinnati 1886
Jones, R. E., Gomer 1882
Jones, T. W., Columbus 1883
Judkins, Wm., Cincinnati 1881
Juler, Henry C., Cincinnati 1888
Kahle, R. D., Lima 1888
Kelley, H. R., Galion 1884
Kendig, E. V., Hayesville 1884
Klusman, D. N., Columbus 1892
Kirkley, C. A., Toledo 1888
Kirkpatrick, O. B., Cherry Fork 1888
Knight, Wm., Cincinnati 1888
Koehler, Max, Cincinnati 1888
Krieger, G. L., Madisonville 1883
Landman, Otto, Toledo 1892
Langsdale, R. G., Terrace Park 1888
Langdon, F. W., Cincinnati 1892
Lathrop, J. M., Dover 1884
Lenhart, W. C., Columbus 1883
Leonard, B. S., West Liberty 1884
Leonard, W. W., Akron 1893
Leslie, J. M., Chillicothe 1888
Lightner, S. B., Sabina 1883
Long, John W., Bryan 1888
Loving, Starling, Columbus 1876
Longfellow, R. C., Cincinnati 1893
Lowman, J. H., Cleveland 1892
Luff, Theo. R., Castine 1888
Lyman, C. N., Wadsworth 1874
McClellan, B. R., Xenia 1887
McClung, J. C., Lelpsic 1888
McCollum, E. J., Tiffin 1885
McCurdy, John, Youngstown 1883
McCurdy, S. L., Dennison 1883
McDougal, John G., New Lexington 1888
McEbright, T., Akron 1867
McKee, E. S., Cincinnati 1885
Macready, James, Monroe 1888
Marchand, J. F., Canton 1891
Marquardt, O. M., Osborn 1892
Millikin, B. L., Cleveland 1892
Millikin, D., Hamilton 1882
Mills, J. T., Jersey 1890
Miner, A. G., Niles 1885
Mitchell, E. W., Cincinnati 1888
Mitchell, G. S., Cincinnati 1888
Mitchell, T. A., Owensville 1888
Moody, M. M., Chatham Centre 1883
Moore, Wm., New Lisbon 1878
Morris, J., Ironton 1878
Morrow, Edw. P., Canton 1892
Mortland, J. C., Edgerton 1874
Moses, T. F., Urbana 1888
Mosgrove, James M., Urbana 1887
Mounts, J. L., Morrow 1882
Mullen, Thos. J., New Richmond 1888
Murphy, J. A., Cincinnati 1878
Murray, L. S., Medina 1874
Mussey, W. L., Cincinnati 1890
Nash, E. K., Montrose 1890
North, John, Toledo 1877
Noyes, H. J., McConnellsville 1876
Oliver, J. C., Cincinnati 1892
Pearce, Henry C., Urbana 1888
Peck, G. S., Youngstown 1888
Pennell, W. W., Fredericktown 1888
Peskind, Arnold, Cleveland 1891
Pettit, R. R., Dayton 1888
Pontius, L. W., Canton 1887
Pontius, Maria G., Canton 1888
Poare, R. J., Cincinnati 1888
Post, S. B., Canton 1892
Powell, H. H. Cleveland 1883
Powell, W. S., Defiance 1882
Quinn, Allen T., Wilmington 1880
Quirk, H. W., Cleveland 1889
Ransohoff, J., Cincinnati 1882
Ravogli, Aug., Cincinnati 1892
Read, A. N., Norwalk 1855
Reamy, Thad. A., Cincinnati 1867
Read, C. R., Middleport 1883
Reed, C. A. L., Cincinnati 1888
Reed, John G., Elmwood Place 1893
Reed, R. H., Columbus 1883
Reed, R. C. S., Cincinnati 1891
Reed, T. J., Massillon 1878
Reed, W. F., Ottawa 1883
Reeve, J. C., Dayton 1866
Reinfrank, J. H., Perrysburgh 1882
Rhu, Auguste, Marion 1888
Ricketts, B. M., Cincinnati 1888
Ricketts, E. S., Cincinnati 1884
Ricketts, J. V., Cincinnati 1891
Robison, J. D., Wooster 1859
Rodgers, J. H., Springfield 1883
Rosenwasser, M., Cleveland 1892
Root, H. A., Toledo 1892
Russell, John E., Mt. Vernon 1887
Ryan, Geo. W., Cincinnati 1888
Sager, Joseph, Celina 1883
Sattler, E. C., Cincinnati 1889
Sattler, Robt., Cincinnati 1888
Sawyer, P. H., Cleveland 1892
Schwagmeyer, A., Cincinnati 1888
Scott, A. J., Londonville 1881
Scott, B. B., Mt. Vernon 1883
Scott, W. J., Cleveland 1876
Scott, X. C., Cleveland 1874
Sharp, H. J., London 1882
Shaw, W. E., Cincinnati 1888
Sheldon, S. B., Five Mile 1883
Sherrard, A. C., Oakwoods 1892
Sihler, Christian, Cleveland 1893
Silver, D. R., Sidney 1883
Slager, J. L., Paulding 1890
Slocum, C. E., Defiance 1875
Smith, C. N., Toledo 1892
Smith, D. B., Cleveland 1883
Smith, Henry A., Cincinnati 1888
Smith, Wm., Van Wert 1877
Snodgrass, J., Kenton 1888
Snyder, D. J., Scio 1886
Spencer, E. R., Doylestown 1888
Stamm, M., Fremont 1883
Stanley, E., Sandusky 1883
Stanton, Byron, Cincinnati 1882
Starr, G. L., Hudson 1883
Stevens, M. B., Defiance 1875
Stewart, Robert W., Cincinnati 1888
Stewart, T. H., Church Hill 1876
Strain, A. J., London 1886
Swan, E. A., Bellefontaine 1892
Sykes, R. D., Plymouth 1891
Taft, J. Cincinnati 1886
Taylor, Jas. L., Wheelersburg 1888
Taylor, Wm. H., Cincinnati 1883
Thomas, F. W., Marion 1887
Thompson, Wilbur R., Troy 1888
Thorn, S. S., Toledo 1883
Thorner, M., Cincinnati 1888
Thrasher, A. B., Cincinnati 1888
Todd, J. H., Wooster 1883
Tracy, J. L., Toledo 1894
Tressel, J. H., Alliance 1877
Trush, Jacob, Cincinnati 1888
Tuller, Willis M., Bowling Green 1888
Vail, J. B., Lima 1884
VanPelt, C. L., Toledo 1888
VanWinkle, N. B., Blanchester 1888
VonKlein, C. H., Cleveland 1883
Waggoner, Joseph, Ravenna 1882
Walker, A. B., Canton 1891
Walker, Edw. W., Cincinnati 1888
Walker, Geo. W. W., Roseville 1888
Wanzer, C. M., Zanesfield 1894
Warner, E. J., Congress 1891
Weaver, J. M., Dayton 1883
Weeks, O. W., Marion 1883
Weitz, Jos. A. Montpelier 1892
Wenning, Wm. H., Cincinnati 1888
Whittaker, J. T., Cincinnati 1881
Wilbur, A. M., West Unity 1888
Willey, A. G., Spencer 1893
Willard, G. P., Tiffin 1891
Wilson, A. C., Youngstown
Wilson, DeWitt C., Ironton 1889
Winn, John J., Norwood 1888
Wire, G. W., Wilmington 1888
Wirt, Wm. E., Cleveland 1892
Withrow, John M., Cincinnati 1888
Wood, John S., Collinwood 1888
Woodbridge, J. E., Youngstown 1869
Woods, J. T., Toledo 1884
Woodward, W. R., Cincinnati 1888
Wright, S. J., Tallmadge 1891
Wuchter, Geo. H., Wadsworth 1892
Zinke, E. G., Cincinnati 1884

OKLAHOMA TERRITORY

Dougan, W. McKay, Otoe 1894
Horner, Levi, Kildare 1890

OREGON

Boys, Wm., Portland 1882
Cromwell, J. N., Union 1894
Dodson, O. M., Baker City 1894
Eaton, F. B., Portland 1894
Fraser, E. P., Portland 1892
Gaff, John B., Portland 1894
Guyon, E. F., Pendleton 1892
Holmes, H. R., Portland 1880
McCormac, J. T., Marshfield 1894
Maston, G. W., Albany 1892
Quigley, John M., E. Portland 1894
Rockey, A. E., Portland 1892
Smith, C. J., Pendleton 1892
Wright, H. A., Linkville 1889

PENNSYLVANIA

Adler, L. H. Jr., Philadelphia 1891
Airey, D. C., New Milford 1884
Allen, E. P., Athens 1860
Allen, Mary E., Philadelphia 1892
Allis, O. H., Philadelphia 1893
Allyn, G. W., Pittsburg 1891
Allyn, H. B., Philadelphia 1891
Andera, Howard S., Philadelphia 1894
Andera, J. M., Philadelphia 1884
Anderson, Jas. W., Ardmore 1889
Anderson, Wm., Indiana 1868
Armstrong, J. A., Leechburg 1892
Artera, J. D., Oil City 1892
Ash, H. St. Clair, Philadelphia 1890
Asdale, W. J., Pittsburg 1860
Ashton, Wm. E., Philadelphia 1892
Atkinson, W. B., Philadelphia 1859
Auide, John, Philadelphia 1889
Ayres, S., Pittsburg 1884
Bacon, W. F., York 1891
Baer, B. F., Philadelphia 1885
Baker, Geo. F., Philadelphia 1892
Ball, F. P., Lock Haven 1891
Balmer, A. F., Brookville 1883
Banes, S. I., Philadelphia 1892
Barker, T. R., Philadelphia 1891
Bartleson, S. P., Clifton Heights 1883
Barr, G. W., Titusville 1868
Batten, J. M., Pittsburg 1876
Baxter, H. F., Philadelphia 1880
Beane, W. H., Middletown 1892
Beaver, D. B. D., Reading 1891
Beates, H. Jr., Philadelphia 1894
Bell, G. Franklin, Williamsport 1883
Bell, S. J., Butler 1892
Bennett, Alice, Norristown 1884
Berlin, J. O., Bath 1881
Bernardy, E. P., Philadelphia 1891
Birch, T. J., Port Carbon 1883
Bishop, W. T., Harrisburg 1884
Bittinger, J. H., Hanover 1881
Blachly, O. L., Wilkinsburg 1880
Blaisdell, I. C., Wilmore 1883
Blumberg, A., Pittsburg 1884
Boal, G. Y., Baden 1887
Bodamer, Geo. A., Philadelphia 1892
Brandes, Charles, Erie
Bower, C. L., Philadelphia 1892
Breinig, P. B., Bethelehem 1865
Brinton, J. H., Philadelphia 1880
Bronson, A. F., Girardville 1892
Brumbaugh, A. B., Huntingdon 1884
Brundage, A. T., Scranton 1880
Buchanan, J. J., Pittsburg 1887
Bucher, I. R., Lebanon 1884
Buckby, W., Philadelphia 1891
Burnett, C. H., Philadelphia 1891
Burnett, J., Scranton 1889
Burns, R. B., Philadelphia 1889
Buttermore S., Connellaville 1874
Cadwallader, C. E., Philadelphia 1887
Caldwell, Joseph R., New Hamburg 1887
Carpenter, John I., Pottsville 1878
Cass, J. T., West Lebanon 1892
Chase, R. H., Frankford 1891
Chestnut, J. H. W., Philadelphia 1889
Chritzman, H. G., Welsh Run 1884
Christy, I. C., Pittsburg 1891
Clagett, L. S., Blairsville 1881
Clark, L. S., Philadelphia 1880
Clarke, Rowan, Tyrone 1880
Clarkson, J. A. C., Lewistown 1888
Cline, G. H., Jersey Shore 1891
Cline, J. C., Derry Station 1891
Cochran, J. C., Big Run 1892
Cohen, S. Solis, Philadelphia 1889
Collins, James, Philadelphia 1868
Connell, J. G., Pittsburg 1882
Connelly, J. P., Williamsport 1890
Coope, A. F., Oil City 1874
Cooper, Alfred M., Point Pleasant 1889
Cooper, W. R., Point Pleasant 1891
Coover, E. H., Harrisburg 1877
Coraon, E. M., Norristown 1891
Corson, Hiram, Plymouth Meeting 1847
Craig, Alex., Columbia 1870
Crawford, J. B., Wilkesbarre 1872
Crawford, J. K., Cooperstown 1876
Cunningham, J. G., Kittanning 1883
Curtin, R. G., Philadelphia 1880
Curwen, John, Warren 1870
DaCosta, J. C., Philadelphia 1871
Daland, Judson, Philadelphia 1892
Daly, W. H., Pittsburg 1887
Davis, E. P., Philadelphia 1891
Davis, F. F., S. Oil City 1883
Davis, Thomas D., Pittsburg 1888
Davison, F. B., Fleetville 1885
Dean, G. E., Scranton 1893
Deaver, John Blair, Philadelphia 1889
Dennis, D. N., Erie 1892
Dercum, F. X., Philadelphia 1892
De Schweinitz, G. E., Philadelphia 1890
Detwiler, B. H., Williamsport 1886
Donaldson, J. B., Canonsburg 1884
Dorland, W. A. N., Philadelphia 1893
Drake, H. H., Norristown 1890
Drysdale, Thomas M., Philadelphia 1873
Duff, J. Milton, Pittsburg 1892
Dubring, L. A., Philadelphia 1884
Dundor, A. B., Reading 1873
Dunglison, R. J., Philadelphia 1874
Dunmire, George B., Philadelphia 1884
Dunn, T. D., West Chester 1893
Earley, Charles R., Ridgway 1887
Edsall, F. H., Pittsburg 1891
Eisenberg, P. Y., Norristown 1891
Ellenberger, J. W., Harrisburg 1884
Erdman, M. S., Richlandtown 1891
Erdman, W. B., Macungie 1880
Ewing, W. B., Dixmont 1892
Ewing, R. B., West Grove 1881
Fanlds, W. H., Luzerne 1892
Fay, John, Altoona 1858
Fenton, T. H., Philadelphia 1884
Findley, W. M., Altoona 1869
Fischer, Emil, Philadelphia 1868
Fisher, H. M., Philadelphia 1893
Fleming, J. F., Trout Run 1892
Fletcher, W. W., Susquehanna 1893
Flexer, L. A., Tamanend
Forbes, W. S., Philadelphia 1884
Forster, Wm., S. Oil City 1884
Forwood, W. H., Chester 1879
Foster, C. E., Honesdale 1892
Foster, W. S., Pittsburg 1877

Fox, L. W., Philadelphia 1887
Frank, G. S., Millheim 1893
Frankhauser, F. W., Reading 1891
Frazee, A. Blair, Kipple 1889
Free, S. M., Du Bois 1884
Freeman, W. J., Philadelphia 1892
French, M. S., Philadelphia 1891
Frey, C. L., Scranton 1892
Frichey, John A., Harrisburg 1888
Fricke, Albert, Philadelphia 1872
Friebis, Geo., Philadelphia 1892
Fullerton, A. N., Philadelphia 1893
Gable, I. C., York 1880
Gaddis, L. S., Uniontown 1884
Gale, C., New Brighton 1892
Gallaher, T. J., Pittsburg 1892
Gardner, H. D., Scranton 1891
Gates, L. M., Scranton 1889
Gemmill, J. M. Jr., Tyrone 1884
Gerhard, J. Z., Harrisburg 1878
Gibb, Jos. S., Philadelphia 1889
Gibbs, L. H., Scranton 1881
Gibson, Maria, Wilkesbarre 1892
Gilliford, R. H., Allegheny 1883
Given, S. A. Mercer, Clifton Heights 1889
Goode, S. S., Meyersdale 1891
Goodell, W., Philadelphia 1872
Goodman, H. E., Philadelphia 1875
Gould, G. M., Philadelphia 1891
Graham, E. E., Philadelphia 1893
Graham, S., Butler 1878
Grayson, W., Washington 1892
Green, T., Easton 1853
Green, J. J., Pittsburg 1883
Green, E. M., Easton 1892
Griswold, E., Sharon 1872
Grove, A. P. I., Dallastown 1891
Grove, J. H., Philadelphia 1867
Guilford, W. M., Lebanon 1888
Guth, M. S., Warren 1883
Hallock, Wm. E., Pittsburg 1892
Halberstadt, A. H., Pottsville 1891
Hall, F. L., New Richmond 1891
Hamaker, W. D., Meadville 1891
Hamilton, B. F., Emlenton 1888
Hammer, Robert B., Greensburg 1889
Hare, H. A., Philadelphia 1889
Harman, G. G., Huntingdon 1890
Harrison, A. C., Meyersdale 1891
Hartsell, W. H., Allentown 1892
Hay, Thomas, Philadelphia 1866
Hazzard, T. L., Allegheny 1892
Hearn, W. J., Philadelphia 1884
Heng-t, D. A., Pittsburg 1883
Heury, F. P., Philadelphia 1880
Hermany, P., Mahanoy City 1883
Herr, A. J., Lancaster 1881
Herr, M. L., Lancaster 1880
Highley, G. N., Conshohocken 1892
Hinkie, A. G. B., Philadelphia 1872
Hirst, Barton C., Philadelphia 1889
Hitzrot, H. W., McKeesport 1887
Hoch, W. R., Philadelphia 1891
Hoffmann, J. H., Pittsburg 1884
Hoffman, Jos., Philadelphia 1889
Hoffman, J. G. Reading 1892
Holmes, E. W., Philadelphia 1889
Holtzapple, G. E., Seven Valleys 1892
Hopkins, W. B., Philadelphia 1889
Hornor, C. W., Philadelphia 1890
Horwitz, Orville, Philadelphia 1892
Hosack, J. P., Mercer 1876
Howard, E. C., Philadelphia 1894
Howell, J. T., Wilkesbarre 1891
Howell, W. G., Philadelphia 1892
Hughes, C. W., Big Run 1892
Hughes, D., Philadelphia 1891
Hughes, J. W., Latrobe 1874
Hughes, M. B., Schickshinny 1888
Hull, A. P., Montgomery Station 1891
Hulshizer, A. H., Philadelphia 1889
Huselton, W. S., Allegheny 1872
Huston, J. H., Clintondale 1892
Hummell, A. L., Philadelphia 1892
Iams, J. T., Waynesburg 1892
Jackson, E., Philadelphia 1881
Jackson, C. L., Pittsburg 1892
Janney, W. S., Philadelphia 1880
Johnson, W. H., Robertsdale 1888
Jones, M. O., Pittsburg 1876
Johnston, W. E., Aetna 1892
Kalb, G. B., Jeddo 1894
Kane, Evan O., Kane 1888
Kearns, W. D., Pittsburg 1885
Keen, W. W., Philadelphia 1891
Keim, C. J., Catasauqua 1892
Kerr, Jas. P., Pittsburg 1893
Keyser, P. D., Philadelphia 1870
Kimble, Z. E., Liberty 1891
Kirker, John, Allegheny 1883
Kirkpatrick, A. B., Philadelphia 1893
Kistler, O. F., Neaquehoning 1891
Klugensmith, I. P., Blairsville 1878
Kline, W. J. K., Greensburg 1889
Klump, J. A., Williamsport 1891
Koeller, F., Pittsburg 1891
Koenig, A., Pittsburg 1894
Knapp, C. P., Wyoming 1889
Knipe, J. O., Norristown 1880
Knox, W. F., McKeesport 1870
Landis, H., Reading 1891
Lange, J. C., Pittsburg 1883
Laugfitt, W. J., Allegheny City 1886
Langton, D. J., Shenandoah 1889
Laplace, E., Philadelphia 1892
Lautenbach, L. J., Philadelphia 1891
Leadenham, J. W., Franklin 1882
Leaman, B., Leaman Place 1872
Leaman, H., Philadelphia 1872
Lee, B., Philadelphia 1868
Legge, J. H., Pittsburg 1890
Le Moyne, F., Pittsburg 1883
Lueaweaver, J. K., Columbia 1879
Linn, G. A., Monongahela City 1874
Lippincott, J. A., Pittsburg 1880
Livingston, J. B., West Middlesex 1874
Livingston, T. M., Columbia 1876
Logan, H. V. Scranton 1892
Long, Chas., Wilkesbarre 1893
Longaker, Daniel, Philadelphia 1892
Longshore, W. R., Hazelton 1884
Love, L. F., Philadelphia 1892
McClelland, C., Philadelphia 1882
McClurg, J. R., West Chester 1876
McConnell, H. S., New Brighton 1882
McCormick, H. G., Williamsport 1892
McIntire, Charles, Easton 1891
McKelvy, W. H., Pittsburg 1881
McKelway, G. I., Philadelphia 1892
McKenuan, T. M. T., Pittsburg 1891
McNeil, G. W., Pittsburg 1882
Magoffin, M. M., Mercer 1891
Marbourg, E. L. W., Johnstown 1886
Marchand, J. I., Irwin 1883
Marsh, F. L., Mt. Pleasant 1881
Martin, Edward, Philadelphia 1890
Massey, G. Betton, Philadelphia 1891
Massey, Isaac, West Chester 1883
Mears, J. Ewing, Philadelphia 1870
Mears, D. W., Audenreid 1893
Mercer, W. H., Pittsburg 1892
Miller, A. M., Bird-in-Hand 1880
Miller, D. P., Huntingdon 1872
Miller, Joseph S., York 1887
Mills, C. K., Philadelphia 1892
Minich, A. K., Philadelphia 1884
Mish, G. F., Middletown 1892
Montgomery, E. E., Philadelphia 1889
Montgomery, John, Chambersburg 1880
Moore, C. C., Philadelphia 1893
Morton, T. G., Philadelphia 1876
Morton, Thomas S. K., Philadelphia 1889
Mosaman, B. E., Greenville 1874
Motter, M. G., Lancaster 1891
Mowery, Henry A., Marietta 1888
Mowry, R. B., Allegheny 1850
Muilhaupt, A., St. Mary's 1892
Murdoch, J. B., Pittsburg 1875
Murphy, James A., Wilkesbarre 1878
Musser, Charles S., Aaronsburg 1887
Musser, J. H., Lampeter 1880
Musser, John H., Philadelphia 1889
Nicholson, W. A., Franklin 1892
Noble, C. P., Philadelphia 1891
Nutt, G. D., Williamsport 1884
O'Brien, Wm. D., Pittsburg 1890
O'Hara, M., Philadelphia 1878
Oliver, Charles A., Philadelphia 1890
O'Neal, J. W. C., Gettysburg 1875
Otto, J. V., Port Alleghany 1892
Packard, J. H., Philadelphia 1878
Painter, Wm. P., Darby 1889
Palst, H. C., Philadelphia 1892
Pancoast, W. H., Philadelphia 1876
Park, J. W., Harrisburg 1884
Parke, T. E., Downingtown 1890
Parvin, T., Philadelphia 1867
Peltz, J., Philadelphia 1885
Pepper, Wm., Philadelphia 1872
Perkins, F. M., Philadelphia 1887
Pettit, Albert, Pittsburg 1893
Phillips, E., New Haven 1876
Pillow, R. H., Butler 1884
Price, Joseph, Philadelphia 1888
Price, M., Philadelphia 1891
Pursell, H., Bristol 1889
Putnam, B. H., North East 1892
Putt, Maurice, Oberlin 1892
Rahanser, G. G., Pittsburg 1878
Rahter, C. A., Harrisburg 1884
Ramsey, R. W., Chambersburg 1880
Randall, B. A., Philadelphia 1890
Rankin, D. N., Allegheny 1878
Reber, W. M., Bloomsburg 1884
Reeser, H. S., Reading 1884
Richards, J. N., Fallsington 1889
Richardson, Wm. L., Montrose 1863
Rickards, W. M. L., Philadelphia 1874
Riddle, N. V., Burgettstown 1893
Rigg, J. E., Wilkinsburg 1883
Riggs, E. S., Allegheny 1876
Risley, S. D., Philadelphia 1891
Ritchey, J. A., Oil City 1876
Roberts, J. B., Philadelphia 1881
Robinson, J. Q., West Newton 1888
Rockwell, LaRue D., Union City 1888
Roebuck, P. J., Lititz 1891
Rosenthal, E., Philadelphia 1892
Ross, J. D., Williamsburg 1854
Ross, S. M., Altoona 1882
Ruschenberger, W. S. W., Philadelphia 1850
Russ, E. I., St. Marys 1884
Russell, E. A., Fleming 1892
Schaffer, C., Philadelphia 1892
Scott, Frank P., Monongahela City 1889
Seem, A. A., Bangor 1884
Selbert, W. H., Steelton 1888
Selier, Carl, Philadelphia 1880
Seiss, R. W., Philadelphia 1892
Semple, John, Wilkinsburg 1880
Shaw, Chas. S., Pittsburg 1892
Shaw, T. W., Pittsburg 1892
Shaw, W. C., Pittsburg 1881
Shearer, J. Y., Sinking Spring 1892
Shilito, G. M., Allegheny 1880
Shimwell, B. T., Philadelphia 1879
Shober, J. B., Philadelphia 1890
Shoemaker, J. V., Philadelphia 1890
Silliman, J. E., Erie 1878
Simpson, T. P., Beaver Falls 1884
Slifer, H. F., North Wales 1884
Slocum, H. A., Philadelphia 1893
Small, J. F., York 1893
Smith, S. MacCuen, Philadelphia 1891
Snively, I. N., Waynesboro 1892
Snively, I. N., Philadelphia 1876
Snively, W., Pittsburg 1893
Snodgrass, H. L., Buffalo 1880
Spalding, S. C., Shenandoah 1892
Steinbach, L. W., Philadelphia 1892
Steliwagen, T. C., Media 1889
Stemmetz, E. G., Hokendauqua 1884
Sterrett, J. P., Pittsburg 1878
Stevens, C. L., Athens 1876
Stewart, D. D., Philadelphia 1890
Stewart, Wm. S., Philadelphia 1892
Stewart, W. S., Wilkesbarre 1876
Stiles, G. M., Conshohocken 1892
Stillé, Alfred, Philadelphia 1876
Stoeckel, Louise M., Wilkesbarre 1847
Stout, A., Bethlehem 1893
Straight, A. M. Bradford 1891
Strawbridge, G., Philadelphia 1883
Striekler, A. H., Waynesboro 1876
Strickler, A. W., Scottdale 1884
Strittmatter, I. P., Philadelphia 1884
Strouse, W. S., Beaver 1892
Sturgeon, W. H., Uniontown 1892
Summerville, J. F., Monroe 1891
Taylor, L. H., Wilkesbarre 1892
Thayer, A. Erie 1886
Thayer, H. W., Corry 1878
Thomas, C. H., Philadelphia 1891
Thomas, J. D., Pittsburg 1891
Thomson, Wm., Philadelphia 1880
Thorne, J. M., McKeesport 1892
Tidd, E. J., Clark 1892
Towler, S. S., Marienville 1891
Tracy, E. G., Troy 1892
Trelchler, C. G., Honey Brook 1889
Tweedle, J. B., Weatherly 1880
Twitmyer, J. H., Sharpsville 1883
Tyson, James, Philadelphia 1884
Ulrich, W. B., Chester 1876
Unger, D. F., Mercersburg 1875
Van Kirk, T. R., McKeesport 1880
Vastine, J. H., Catawissa 1890
Vincent, J. R., Pittsburg 1876
Wagoner, G. W., Johnstown 1890
Walker, J. B., Philadelphia 1892
Walter, H. B., Harrisburg 1884
Watson, R. B., Lock Haven 1892
Weaver, J. K., Norristown 1878
Weaver, W. G., Wilkesbarre 1880
Weidman, W. M., Reading 1876
Welch, W. M., Philadelphia 1872
Welchaus, G. R., Lancaster 1884
Wentz, A. C., Hanover 1893
Werder, X. O., Pittsburg 1890
Werner, Marie B., Philadelphia 1890
Whann, W. L., Franklin 1883
Wible, E. E., Munhall 1892
Willard, DeForest, Philadelphia 1880
Williams, W. L., Ridgway 1883
Williams, Roger, Pittsburg 1882
Williams, T. R., De Laucey 1893
Williams, W. T., Mt. Carmel 1890
Wilson, C. A., DuBois 1893
Wilson, C. G., St. Mary's 1884
Wilson, F. S., Jarrettown 1885
Wilson, J. C., Philadelphia 1884
Wilson, J. S., Beaver 1882
Wireback, I. J., St. Petersburg 1883
Wolfe, Samuel, Philadelphia 1890
Wolff, L., Philadelphia 1887
Wood, A. C., Philadelphia 1893
Wood, C. B., Monongahela City 1882
Wood, E. A., Pittsburg 1870
Woods, Matthew, Philadelphia 1892
Woodbury, F., Philadelphia 1877
Worrell, J. W., Brownsville 1883
Yarrow, T. J., Philadelphia 1892
Young, T. J., Titusville 1874
Ziegler, G. J., Philadelphia 1853
Ziegler, I. L., Mount Joy 1891
Ziegler, S. L., Philadelphia 1893

RHODE ISLAND

Briggs, Alex. B., Ashaway 1889
Carr, Geo. W., Providence 1889
Collins, Geo. L., Providence 1889
Farrell, J. T., Providence 1890
Fifield, M., Centreville 1880
Fisher, C. H., Providence 1858
Forsythe, F. L., Providence 1892
French, Chas. H., Pawtucket 1893
Fuller, Frank B., Pawtucket 1889
Gardiner, H. K., Wakefield 1889
Gardner, C. T., Providence 1880
Hunt, S. E. Providence 1885
Keene, Geo. F., Howard 1889
Kenyon, G. H., Providence 1884

Kingman, Eugene, Providence 1889
Miller, H. G., Providence 1891
Mitchell, J. W., Providence 1889
Palmer, W. H., Providence 1889
Remick, A., Providence 1881
Siegfried, C. A., Newport 1892
Shaw, R. H. R., Thornton 1892
Sherman, W. S., Newport 1880
Storer, H. R., Newport 1878
Thoms, J. Aymer, Olneyville 1892
Traver, W. H., Providence 1880
Turner, H. E., Newport 1889

SOUTH CAROLINA

Bally, T. P., Georgetown 1884
Brodie, R. L., Charleston 1891
Croft, T. J., Aiken 1870
De Saussure, P. G., Charleston 1890
Doyle, O. M., Seneca 1892
Du Bose, D. St. Pierre, Ridge Spring 1892
Evans, James, Florence 1881
Iluger, W. H., Charleston 1884
Kendall F. D., Columbia 1892
Kollock, C. W., Charleston 1885
McCoy, Thos. N., Laurens 1890
McIntosh, J., Newberry 1891
McKie, T. J., Woodlawn 1883
Moore, A. A., Camden 1890
Orr, Sam'l M., Anderson 1889
Simons, Manning, Charleston 1870
Stephens, L. C., Blackville 1892
Talley, A. N., Columbia 1858

TENNESSEE

Atchison, T. A., Nashville 1890
Atchison, W. A., Nashville 1890
Barkley, T. C. V., Chattanooga 1890
Beaumont, C. W., Clarksville 1890
Bilbro, Wm. C., Murfreesboro 1893
Black, J. H., Memphis 1885
Bonner, M. H., Nashville 1890
Boyd, John M., Knoxville 1857
Bradley, J. I., Sugar Tree 1890
Branch, B. L., Rossville 1892
Briggs, W. T., Nashville 1869
Buist, John R., Nashville 1890
Cain, John S., Nashville 1890
Callender, Jno. H., Nashville 1887
Carmichael, J. W., Knoxville 1890
Cheatham, Richard, Nashville 1887
Cliffe, D. B., Franklin 1890
Cole, J. D., Newbern 1890
Coop, W. A. H., Lawreneeburg 1883
Cooper, J. H., McEwen 1893
Cox, J. B., Huntington 1890
Cowan, J. B., Tullahoma 1892
Crawford, J. Y., Nashville 1886
Crockett, S. S., Nashville 1890
Crook, J. A., Jackson 1885
Crosthwait, G. W., Florence Station 1890
Curtis, W. E., McKenzie 1890
Doak, W. H., Russellville 1890
Drake, C. M., Knoxville 1891
Ewing, W. G., Nashville 1886
Foute, Wm. T., Lenoir City 1885
Fowler, S. B., Gainesboro 1892
Franklin, W. E., La Grange 1892
Gillespie, G. B., Covington 1886
Gist, D. R., Sparta 1890
Glenn, W. F., Nashville 1880
Grainger, R. A., Paris 1890
Haggard, W. D., Nashville 1885
Handly, J. N., Nashville 1893
Hanner, Jas. P., Franklin 1890
Happel, T. J., Trenton 1888
Harris, J. E., Nashville 1890
Harris, W. A., Somerville 1890
Harrison, W. B., Columbia 1890
Harron, John I., Jackson 1890
Haywood, Jr., J. G., Brownsville 1890
Holtzclaw, C., Chattanooga 1890
Hubbard, G. W., Nashville 1890
Jones, James T., Jackson 1890
Lenoir, B. B., Lenoir's 1840
Lindsley, J. B., Nashville 1851
Lovelace, C. H., Dukedom 1890
McCall, J. W., Huntington 1890
McMasters, D. H., Memphis 1890
McSwain, I. A., Paris 1890
Maddin, Thos. L., Nashville 1890
Marable, T. H., Clarksville 1890
Menees, O. H., Nashville 1890
Mences, T., Nashville 1890
Miller, W. J., Johnson City 1890
Mitchell, R. W., Memphis 1879
Moody, G. W., Shelbyville 1890
Morrison, S. J., Memphis 1882
Murfree, J. B., Murfreesboro 1873
Murrell, T. C., Winchester 1892
Neely, J. J., Bolivar 1890
Nelson, D. E., Chattanooga 1890
Nowlin, J. S., Shelbyville 1890
Omohundro, O. C., Nashville 1890
Orr, W. M., Shelbyville 1890
Pearce, D. M., Union City 1890
Powell, T. K., Eurekaton 1885
Price, Geo. H., Nashville 1890
Ramsey, A. B., McMinnville 1892
Ransom, Wm. C., Farmington 1890
Rathmell, J. R., Chattanooga 1890
Richardson, N. D., Nashville 1890
Robinson, G. L., Lebanon 1890
Rochelle, W. F., Jackson 1890
Runyon, F. J., Clarksville 1890
Sale, E. P., Memphis 1879
Sanford, S. W., Union City 1891
Saunders, D. D., Memphis 1884
Savage, G. C., Nashville 1885
Scates, D. W., Greenfields 1890
Scruggs, A. D., Knoxville 1892
Seay, John, Nashville 1890
Sebastian, C. M., Martin 1890
Shannon, J. D., Greenfield 1890
Shannon, J. E., Sharon 1890
Sheddan, W. K., Williamsport 1890
Shields, David E., Morristown 1888
Sim, F. L., Memphis 1884
Sinclair, A. G., Memphis 1885
Slayden, C., Warner 1887
Smith, F. T., Chattanooga 1890
Snodgrass, J. H., Sparta 1890
Stephens, J. B., Nashville 1890
Tate, H. W., Bolivar 1890
Taylor, W. W., Memphis 1886
Thornton, G. B., Memphis 1877
Trawick, A. M., Nashville 1890
Van Deman, J. H., Chattanooga 1893
Vaught, R. A., Chattanooga 1893
Walker, J. P. C., Dyersburg 1890
Warmuth, H. J., Smyrna 1887
Watkins, G. H., Hollow Rock 1890
Weldon, A. J., Paris Landing 1877
Woodson, L. Miller, Gallatin 1890
Wood, I. H., Nashville 1890
Wright, W. M., Huntingdon 1890
Yarborough, L. A., Covington 1890
Young, W. B., Bon Air Coal Mines

TEXAS

Adams, Wm. A., Ft. Worth 1887
Archer, W. A., Houston 1885
Ashton, L., Dallas 1881
Barker, W. L., San Antonio 1891
Beall, E. J., Ft. Worth 1884
Bell, T. J., Tyler 1892
Blake, Daniel B., Cuero 1885
Braunargel, J., San Antonio 1892
Burroughs, S. R., Raymond 1885
Burts, W. P., Ft. Worth 1885
Carhart, J. W., La Grange 1884
Carter, Robt. H., Waco 1890
Caston, W., Corsicana 1885
Chilton, R. H., Dallas 1885
Christian, G. W., Burnet 1880
Coleman, P. C., Colorado 1892
Cornick, B., Knickerbocker 1886
Cupples, G., San Antonio 1884
Darr, H. H., Caldwell 1883
Dial, J. J., Sulphur Springs 1885
Duringer, W. A., Ft. Worth 1890
Eads, B. F., Marshall 1890
Eastland, O., Wichita Falls 1885
Emanuel, M. T., Weatherford 1891
Ford, F. C., Nacogdoches 1885
Garnett, J. W., Greenville 1886
Ghent, H. C., Belton 1882
Gibson, John E., McKinney 1890
Hale, G. V., Wheatland 1894
Herff, F., San Antonio 1885
Inge, J. M., Denton 1892
Jones, W. T., Georgetown 1885
Jones, J. C., Gonzales 1885
Jordan, J. D., Madisonville 1885
Kendall, O. J., Wichita Falls 1893
Kingsley, B. F., San Antonio 1886
Kirkpatrick, D. F., Waketon 1892
Knox, M. D., Hillsboro 1883
LeGrand, C. W., Hempstead 1886
Link, E. W., Palestine 1892
McCulsion, L. P., Paris 1893
McGee, J. A., Rice 1885
McLaughlin, J. W., Austin 1884
Matthews, C. O., Terrell 1892
Montgomery, D. W., Concord 1892
O'Bryan, A. F., Longview 1892
Oldham, J. P., San Antonio 1888
Paine, J. F. Y., Galveston 1885
Park, R. W., Waco 1884
Paschal, F., San Antonio 1888
Perl, M., Houston 1885
Pope, John H., Marshall 1875
Renfro, J. C. B., La Grange 1886
Saunders, B., Ft. Worth 1885
Sears, J. H., Waco 1881
Sims, R. S., Iowa Park 1892
Smith, H. R., Detroit 1892
Smith, C. A., Tyler 1892
Smith, Q. C., Austin 1885
Stinson, J. B., Sherman 1885
Taylor, M. A., Austin 1874
Thorpe, H. H., Liberty Hill 1890
Tyner, T. J., Austin 1885
Van Gasken, J., Luling 1889
Walker, W. W., Schnlenberg 1885
Webb, J. E., Blue Ridge 1892
West, H. A., Galveston 1892
Wilkes, W. H., Waco 1891
Wilson, J. T., Sherman 1873
Wolf, A. S., Brownsville 1890
Wooten, T. D., Austin 1882

UTAH

Bascom, Francis S., Salt Lake City 1889
Clift, Frederic, St. George 1894
Gage, Ellen C., Salt Lake City 1887
Jones, P. E., Salt Lake City 1887
Meaham, F. A., Salt Lake City 1894
Meyer, T., Salt Lake City 1891
Niles, H. D., Salt Lake City 1894
Pinkerton, S. H., Salt Lake City 1894

VERMONT

Albee, E. S., Bellows Falls 1893
Blake, Wellman C., Lyndon 1894
Campbell, E. R., Bellows Falls 1880
Caverly, C. S., Rutland 1892
Chandler, C. E., Montpelier 1892
Crain, M. R., Rutland 1887
Davenport, George, East Randolph 1889
Dunsmore, George, St. Albans 1882
Fox, Geo. H., Rutland 1894
Hamilton, J. H., Richford 1891
Hawley, D. C., Burlington 1891
Holton, Henry D., Brattleboro 1864
Huntington, Wm. M., Rochester
Hutchinson, W. R., Enosburg Falls 1877
Janes, Henry, Waterbury 1871
Jenne, J. N., St. Albans 1892
Morgan, F. C., Felchville 1894
Rugg, D. F., Hartland 1885
Upham, E. F., West Randolph 1884
Woodward, A. T., Brandon 1853

VIRGINIA

Booth, Chas., Alexandria
Brown, B., Alexandria 1891
Cannaday, C. G., Roanoke City 1891
Carter, D. D., Woodstock 1891
Chancellor, J. E., Charlottesville 1875
Christian, W. S., Urbana 1891
Cooper, W. D., Morrisville 1884
Dabney, W. C., University Station 1875
Drewey, W. F., Petersburg 1891
Edwards, Landon B., Richmond 1879
Flannagan, L. E., Charlottesville 1891
Gibson, J. S. P., Staunton 1881
Gibson, Wm., Alexandria 1884
Gildersleeve, J. R., Tazewell 1892
Goodwin, B. C., Frederick's Hall 1890
Hardee, P. R., Virginius 1886
Harvie, L. E., Danville 1881
Hinton, S. A., Petersburg 1881
Horner, F., Marshall 1884
Keister, B. C., South Boston 1892
Leigh, H. G., Petersburg 1881
Love, W. S., Winchester 1881
McGuire, H., Richmond 1872
Martin, R. W., Chatham 1879
Meeks, W. D., Massie's Mill 1892
Moncure, J. D., Williamsburg 1892
Nash, H. M., Norfolk 1879
O'Brien, M. W., Alexandria 1891
Parker, W. W., Richmond 1891
Perry, T. B., U. S. M. H. S., Fortress Monroe . 1891
Preston, R. J., Marion 1891
Shields, C. M., Richmond 1891
Taylor, H. M., Richmond 1891
Tipton, Joseph S., Allisonia 1875
Wellford, J. S., Richmond 1876
Wheat, Louis, Richmond 1893
White, J. A., Richmond 1870
Wood, E. N. Buchanan 1886

WASHINGTON

Anderson, W. L., Medical Lake 1894
Bell, Frank M., Kelso 1890
Bridenstine, S. J., Sidney 1883
Bories, Emil, Seattle 1893
Brown, W. F., Tacoma 1892
Cobb, J. O., Port Townsend 1892
Eagleson, J. B., Seattle 1891
Essig, N. F., Spokane Falls 1875
Lyon, J. H., Roslyn
Mason, Darius, Spokane Falls 1876
Merriam, C. K., Spokane 1894
Newman, D. C., Spokane Falls 1892
Piettzycki, M., Dayton 1893
Semple, J. M., Medical Lake 1892
Willison, H. C., Port Townsend 1892
Wilson, G. B., Pullman 1894
Wyman, H. S., Olympia 1894

WEST VIRGINIA

Aschman, G. A., Wheeling 1891
Baguley, H. B., Wheeling 1883
Blutbaugh, C. B., Parkersburg 1891
Brock, Luther S., Morgantown 1888
Brownfield, J. R., Fairmount 1884
Cook, J. R., Montana Mines 1892
Cooper, J. M., Wellsburg 1870
Cotton, J. T., Charleston 1892
Dent, Wm. M., Newburg 1870
Guthrie, Alex, Glenelk 1882
Hall, R. W., Moundsville 1883
Hood, Thomas M., Weston 1888
Howell, F., Clarksburg 1885
Jep-on, S. L., Wheeling 1884
Jones, H. B., Wheeling 1891
Kendall, J. E., Parkersburg 1872
Morgan, D. P., Clarksburg 1885
Sharp, Wesley H., Parkersburg 1880
Thayer, A. H., Grafton 1892
Ulrich, C. F., Wheeling 1890
Wilson, L. D., Wheeling 1888

WISCONSIN

Abaly, W. C., Madison 1893
Armstrong, L. G., Boscobel
Atwell, W. F., Stevens Point 1893
Babcock, I. G., Cumberland 1893
Back, Jas. A., Milwaukee 1893
Bacon, J. E., Waukesha 1893

Ballard, J. A., La Crosse 1893
Barnett, J. R., Neenah 1893
Bartlett, E. W., Milwaukee 1893
Bell, S., Beloit 1880
Boorse, Lorenzo, Milwaukee 1893
Borden, W. H., Milton 1888
Brett, B. C., Green Bay 1893
Brodsky, F. A., Racine 1892
Buck, E. J., Platteville 1888
Budge, W. H., Marshfield 1893
Bullard, E. L., Waukesha 1893
Burgess, A. J., Milwaukee 1892
Caldwell, Margaret, Waukesha 1888
Catlin, Geo. E., Lake Geneva 1880
Cavaney, J., Milwaukee 1887
Chase, R. R., Eau Claire 1890
Chandler, Ralph, Milwaukee 1893
Chrysler, Oscar, Milwaukee 1893
Clarke, A., Sheboygan 1882
Coates, J. T., Milwaukee 1893
Collins, D. B., Madison 1887
Comfort, A. I., Milwaukee 1893
Coon, J. W., Milwaukee 1893
Connell, M. E., Wauwatosa 1893
Copelaud, E., Milwaukee 1893
Currens, J. R., Two Rivers 1893
Dawley, Geo. I., New London 1887
Dawley, J. H., Plymouth 1892
Day, D. W., Eau Claire 1892
Day, Henry L., Eau Claire 1887
Deahofe, S. P., Mineral Point 1883
Dodson, B. F., Berlin 1898
Dodson, N. M., Berlin 1872
Dorland, James, Milwaukee 1877
Doyle, James F., Antigo 1892
Drexel, Arnold, Milwaukee 1893
Dudley, E. H., Janesville 1882
Durr, Wm. E. Milwaukee 1893
Earles, W. H., Milwaukee 1891
Earll, R. W., Columbus 1884
Eastman, W., Mineral Point 1882
Edwards, J. B., Manston 1883
Ellis, W. H., Barron 1897
Emmons, J. W., Sparta 1887
Everhard, F. A., Ripon 1890
Farnham, A. B., Milwaukee 1892
Fish, E. F., Milwaukee 1892
Fisk, M. H., Wauwatosa 1882
Fitzgibbon, Thos., Plymouth 1892
Fortier, C. A., Florence 1892
Fox, P. R., Madison 1894
Fox, P., Madison 1877
Fox, Wm., Milwaukee 1876
French, S. W., Milwaukee 1883
Franklin, L. D., Milwaukee 1893
Gage, M. R., Sparta 1881
Garlock, F. R., Racine 1884
Gratiot, C. C., Schullsburg 1888
Graethinger, A., Milwaukee 1876
Gregory, D. M., Stevens Point 1888
Grider, A. B., Milwaukee 1893
Guclex, Val A., Milwaukee 1893
Gudden, Bernard C., Oshkosh 1887
Guernsey, A. H., Amherst 1887
Hall, S. S., Ripon 1893
Hansmann, Wm. Kewaskum 1878
Hardacker, H., Hortonville 1893
Harrison, G. W., Ashland 1893
Hawley, Robt. N., Milwaukee 1887
Hay, Thos. H., Milwaukee 1893
Hayes, D. J., Milwaukee 1893
Hayman, E. H., Boscobel 1887
Hayward, John C., Marshfield 1887
Hidershide, G. N., Arcadia 1881
Hill, W. B., Milwaukee 1893
Hiltz, Henry B., Milwaukee 1892
Hodgson, A. J., Palmyra 1893
Hosmer, Andrew, Ashland 1892
Hougen, Ole T., Grand Rapids 1893
Howard, A. Z., Dartford 1892
Howard, J. I. D., Keshena 1894
Jacobs, Benj. M., Wankesha 1893
Jameson, Thos., Two Rivers 1893
Jenkins, Geo. W., Kilbourn City 1878
Jobse, Wm., Milwaukee 1893
Johnson, Sam C., Hudson 1882
Johnson, H. P., La Crosse 1887
Kahn, Jas., Milwaukee
Kaumheimer, G. J., Milwaukee 1891
Kean, N. L., La Crosse 1884
Kelly, E. J., Milwaukee 1893
Kellogg, E. W., Milwaukee 1893
Kermott, E. P., Richland Centre 1893
Knapp, L. L., New Richmond 1893
LaCount, D., Wausau 1873
Ladd, G. D., Milwaukee 1892
Langland, P., Milwaukee 1893
Lawrence, J. C. H., Oconto 1893
Lemon, C. H., Milwaukee 1893
Levings, A. H., Milwaukee 1892
McArthur, Daniel S., La Crosse 1887
McBride, J. H., Wauwatosa 1893
McComb, I. N., Brillion 1893
McDill, J. R., Milwaukee
McDonald, E. M., Beaver Dam 1887
McGovern, W. P., Cedarburg 1892
Mackie, W., Milwaukee 1888
Mailer, A. C., De Pere 1893
Malone, Ed., Waukesha 1893
Malone, E. W. F., Milwaukee 1893
Marks, S., Milwaukee
Meacham, J. G., Racine 1886
Meacher, W., Portage 1893
Mead, S. W., Plymouth 1893
Mears, G. V., Fond du Lac 1893
Mereness, D., Milwaukee 1893
Miller, D. McL., Oconomowoc 1887
Mishoff, I. D., Milwaukee 1893
Moore, D. W., Waupun 1887
Moorehouse W. D., Wauwatosa 1893
Neilson, W. H., Milwaukee 1892
Neyman, E. H., Milwaukee 1893
Noer, Julius, Stoughton 1893
Nolte, L. G., Milwaukee 1893
Noyes, J. C., Oshkosh 1893
Nye, Fred. T., Beloit 1887
O'Brien, J. N., Milwaukee 1877
O'Keefe, P., Oconto 1892
Ottilie, C., La Crosse 1884
Ovlatt, C. W., Oshkosh 1893
Palmer, H., Janesville 1876
Palmer, Edgar, La Crosse 1893
Pelton, L. H., Waupaca 1893
Pfeiffer, C. W., Sheboygan Falls 1893
Perry, F. J., Ft. Atkinson 1893
Philler, H., Waukesha 1887
Phillips, J., Stevens Point 1884
Prees, G. W., Cambria 1893
Puls, A. J., Milwaukee 1892
Reed, W. A., Necedah 1892
Reeve, J. T., Appleton 1877
Reilly, J. R., Appleton 1892
Reineking, H., Sheboygan 1891
Reynolds, B. O., Lake Geneva 1888
Reynolds, F. R., Eau Claire 1892
Richter, Conrad, Ashland 1893
Riddell, S. S., Chippewa Falls 1884
Riley, C. P. Baraboo 1892
Rinehart, W. T., Ashland 1891
Ritchie, G. A., Manawa 1893
Rogers, F. C., Milwaukee 1893
Rood, G., Stevens Point 1888
Russell, T. P., Oshkosh 1873
Sauerhering, A. T., Mayville 1887
Schiller, L., Milwaukee 1893
Schneider, J., Milwaukee 1892
Schorse, W., Milwaukee 1893
Schweichler, A. J., Milwaukee 1893
Schoen, A. F., Mayville 1893
Scollard, J. T., Milwaukee 1893
Seaman, G. E., Milwaukee 1893
Sears, H. B., Beaver Dam 1893
Seiler, Geo., Alma 1888
Sercomb, H. F., Milwaukee 1893
Sheldon, C. S., Madison 1893
Shimonek, F., Milwaukee 1893
Simms, J. R., Racine 1893
Slaughter, A. W., Green Bay 1893
Snyder, A. F., Baraboo 1893
Sommerville, J. A., Marinette 1893
Southwick, F. A., Stevens Point 1893
Sperry, S. B., Milwaukee 1893
Stansbury, E., Appleton 1882
Steele, Geo. M., Oshkosh 1877
Stoelting, C. W., Oconto 1893
Summers, T. O., Waukesha 1893
Sweeney, W., Milwaukee 1892
Syoldriski, J. V., Milwaukee 1893
Tanner, H. B. S., Kaukauna 1888
Thrane, A. D. H., Eau Claire 1880
Tower, F., Milwaukee 1893
Townsend, E. H., New Lisbon 1887
Trowbridge, J. B., Hayward 1892
Vincent, G. R., Tomah 1887
Von Neupert, C., Stevens Point 1893
Walbridge, J. S., Berlin 1883
Walbridge, F. E., Milwaukee 1892
Wall, H. J., Richland Center 1882
Washburn, W. H., Milwaukee 1892
Waterman, O. M., Milwaukee 1893
Wegge, W. F., Winnebago 1894
Wells, W. H., Marshfield 1893
Wengel, H. P., Milwaukee 1893
Wever, F. R., Milwaukee
Whiting, J. B., Janesville 1891
Whyte, W. F., Watertown 1891
Wigginton, R. M., Waukesha 1882
Wingate, U. O. B., Milwaukee 1886
Witter, G. F., Grand Rapids 1887
Würdemann, H. V., Milwaukee 1892
Youmans, L. E., Mukwonago 1892
Zeit, F. R., Medford 1890

WYOMING

Stuver, E., Rawlins 1890

SOCIETY PROCEEDINGS.

The Illinois State Medical Society.

Abstract of the Proceedings of the Forty-fourth annual meeting held at Decatur, May 15, 16 and 17, 1894.

FIRST DAY—MORNING SESSION.

The Society convened in Powers Opera House, and was called to order by the President, Dr. O. B. Will, of Peoria, at 9:30 A.M.

Prayer was offered by the Rev. W. H. Penhallegon.

The reports of the Executive Committee, Committee of Arrangements, and Committee on Registration were read and accepted.

Section 1.—Chairman, Dr. T. J. Pitner, Jacksonville; Secretary, Dr. H. McKennan, Paris.

DR. J. FIREBAUGH, of Robinson, read a paper entitled

MISTAKES AND SURPRISES IN GENERAL PRACTICE.

The paper consisted of a report of several instructive cases. The essayist said the errors of the physician lived on in his memory, while his patients may be covered up in the ground. It has been his observation during almost twenty years' country practice, that the cases in the management of which he had been conscious of some error, either in diagnosis, prognosis, treatment or general management, however hard it may have been on the patients, were just the ones of which he had thought the most, and therefore just the ones which had been the most instructive to him.

DR. N. S. DAVIS, JR., of Chicago, contributed an interesting paper on "Diabetes Mellitus—Some Statistics." He illustrated his remarks with charts.

ARTERIO-SCLEROSIS,

Was the title of a paper read by DR. FRANK BILLINGS, of Chicago.

This is a chronic degenerative and inflammatory disease of the vascular system, with secondary changes in other organs. Gull and Sutton were the first to describe it as an independent affection. The disease may involve the arteries alone, or it may implicate the veins and capillaries as well. It may be local or general in its manifestations, be confined to the aorta or to the whole arterial system. Involvement of the pulmonary system is rare, and secondary always to lung or heart disease. Arterio-sclerosis is essentially a disease of old age, and is rarely found before the age of 40. According to Nothnagel, arterio-sclerosis occurring before the fortieth year is always due either to syphilis or nephritis.

The treatment must vary with the part of the body involved. Much may be done to retard or modify the disease before irreparable damage is done, and especially in the gouty form of the affection. A diet suitable to the case must be selected. This will consist of the nitrogenous elements chiefly, in some cases, and in others of the cereals and hydrocarbons. When the kidneys are involved a diet as free as possible from urea-forming products should be chosen. In all cases it is important that the existing malnutrition should be overcome by an abundance of proper food. Milk in generous quantities is the food *par excellence* for all patients. If necessary to aid its digestion, it may be

freed from the cream, even diluted with water or peptonized. Excretion should be maintained by giving a large amount of fluid. In addition to the milk a pure water should be taken when the stomach is empty. In all cases it is essential to restore nutrition, and if the diet, medication and general hygienic management are directed to that end much will be accomplished in retarding the course of the disease. Dr. Billings closed his paper with a report of four cases which illustrated some of the conditions peculiar to arteriosclerosis.

FIRST DAY—AFTERNOON SESSION.

Section called to order by the Chairman.

DR. J. T. STEWART, of Peoria, read a paper on

THE MEDICAL PROFESSION.

He said that the practice of medicine is not a science but an art founded upon many sciences. The general impression of the profession, and through it of the laity, that about all that is of value has been acquired in the last fifty years, is a mistake. His personal knowledge extends back forty-seven years, and while he grants many improvements have been made since then, the profession was then on bed rock and fully up to the condition of science at that time. The standard remedies of that day are standard remedies now. Quite a number of invaluable ones have been added since, but not one of the old remedies had been displaced to his knowledge. Practitioners should adapt themselves to the age in which they live.

DR. J. L. REAT, of Tuscola, followed with a paper on

ATROPIA IN SOME FORMS OF GENITO-URINARY DISEASE.

He said that if there is irritability of the bladder, the condition where the desire to micturate comes on suddenly and very frequently, so that a patient is compelled to pass his urine every thirty or sixty minutes, the local use of atropia relieves the urgency of the case promptly. What is known as Ludham's formula was given, and is:

℞ Atropia gr. i.
Aconitin. grs. iss.
Oil Tiglii gtts. ij.
Petrolati. ℥iv.

Apply as much as the size of a pea.

Where the urethra is the seat of the trouble, the essayist uses a forcible catheter with piston attachment, filling the eye of the instrument with the medicament, introducing it into the bladder, then as it is withdrawn, presses out the ointment.

DR. W. C. BOWERS, of La Place, reported an interesting case of aortic regurgitation with symptoms obscuring severe acute pericarditis.

THE PROVISIONAL TREATMENT OF INSANITY.

This was the title of a paper read by DR. SANGER BROWN, of Chicago, in which he said the purpose of the paper was to draw the attention of the general practitioner to the considerations which should prompt him in reaching a decision as to the course to be taken in the treatment of insanity when cases occur in his practice. Those who had studied closely the problem of treatment of insanity in hospitals, had found that quite a considerable proportion of cases under hospital treatment, with what the term usually implies, had been aggravated and the symptoms perpetuated. The associations are certainly to some extent harmful in nearly all cases, and particularly so in the earlier and more curable forms of the disease.

The ideal way of treating a case of insanity consists in having spacious quarters and grounds sufficiently isolated, plenty of experienced attendants and competent medical supervision, and only sane associates, no other insane person on the premises. All desirable forms of mental tonics should be available, including traveling and sojourns at watering places. The author had seen incurable cases taken from the best asylums of the world and treated along these lines with very satisfactory results.

DR. J. B. MAXWELL, of Mount Carmel, read a paper on

EPILEPSY AND ITS TREATMENT.

After defining the disease and dealing with the causes, the author dwelt upon the treatment. Associations of a pleasant character have a very favorable effect upon patients suffering from this disease, and he knew of cases that were much relieved by being taken away from discordant home surroundings and placed in a hospital or boarded in a private family where the environments are more agreeable.

The medicinal treatment may be confined to the bromids, and of the various bromids the salt of potassium he considers the best. The amount and time of administration must be regulated by the age of the patient, frequency and time of the fits. In nocturnal epilepsy a dram dose at bedtime often does the best. In the diurnal form of the disease a scruple, three times daily for adults; for children proportionately less. The best and safest rule is to continue the medicine in the smallest doses that will control the disease.

The author urged the establishment of homes or retreats where these unfortunates can be taken care of and treated in order that they might be cured, if curable, and if not, their condition ameliorated and their intellectual decay prevented.

DR. CARL E. BLACK, of Jacksonville, read a paper on

PHYSICAL EXERCISE AS A THERAPEUTIC AGENT.

He said that many of the ills of humanity came from faulty physical development due to neglected or perverted physical exercise. It behooves the medical profession to become an educator in the matter of physical exercise to develop health. The field for usefulness for exercise as a therapeutic agent is a broad one, if it is properly prescribed. The statistics of Amherst College show a low sick rate where systematic exercise is carried out. Authorities differ, however, somewhat as to the amount of exercise required daily by a well developed adult. It is said that a healthy adult of five feet six inches in height, and weighing from 130 to 140 pounds, should take an amount of physical exercise which is equivalent to a walk of eight miles.

DR. C. BARLOW, of Eaton, read a paper entitled

RHEUMATIC SPINAL AFFECTIONS.

In consulting the literature on this subject, he had found reports of cases of rheumatism of almost every part of the body, but rheumatic affections of the spinal cord, its meninges and nerves had not been much written about. In all cases of rheumatism, where there is marked tenderness over the spinous processes, together with exaggerated reflexes, there is a disordered condition of the spinal cord and its nerves. He had noticed this in old soldiers who contracted rheumatism while in the service, and in sixty-four consecutive cases forty-two had tenderness of the spine, and thirty-two had disturbances of patellar tendon reflexes. Twenty-five of the number had increased knee jerk on both sides, three on one side, and in two the knee jerk was diminished. Forty-one of them had a heart murmur.

Treatment.—Hygienic management, flannel or silk underclothing, traveling, suitable climate, warm baths, laxatives, alteratives, as an occasional dose of mercury or colchicum and the iodid of potash, or nitric acid after meals, continued for several weeks. For the relief of pain salol, phenacetin, antikamnia, etc., should be used. Electricity, tonics and codliver oil in some cases, and above all the patient should be regular in his habits and avoid unnecessary exposure.

DR. GEO. F. BUTLER, of Chicago, read an interesting paper entitled,

ELEMENTS OF UNCERTAINTY IN THERAPEUTICS.

Many of our failures in treatment can be attributed to an incorrect diagnosis. Assuming, however, that a correct diagnosis of the condition of the patient has been made, what then are the elements of uncertainty in therapeutics?

A very common and almost universal practice of prescribing ready-made preparations, which masquerade under a copyrighted name which can claim but the faintest relationship to their empirical constitution, is one of the greatest elements of uncertainty in modern therapeutics. The thousands of proprietary articles on the market are unworthy the distinction of being prescribed by the medical profession. "They are directly at variance with scientific progress, their promoters have contributed absolutely nothing of value, and had they never existed, medicine and pharmacy would have reached a higher plane in the development of science." Every physician knows this, yet there is not a single day but that thousands of these articles are prescribed and dispensed. Through the courtesy of twenty druggists in Chicago, located in widely different parts of the city, the speaker had recently looked over several thousand prescriptions with the result that 15 per cent. were for articles of this character. Several proprietary preparations were cited by the author as examples.

Another element of uncertainty is the variation in strength of many of our pharmaceutical preparations.

DR. E. B. MONTGOMERY, of Quincy, contributed a paper entitled,

SOME OBSERVATIONS CONCERNING THE DISEASES OF OLD AGE, THEIR PROPHYLAXIS AND TREATMENT,

which was read by Dr. C. W. Rook in the absence of the author.

The author summarizes his observations in the following conclusions:

1. There are no diseases that are a necessary result of mere length of life; in other words, that old age is not of necessity pathologic.

2. That diseases of a degenerative nature, occurring in the aged, most frequently, are those most distinctive of the decline of life.

3. That such diseases are either due to faulty heredity, overwork, errors in food and drink, or constitutional dyscrasiæ, than from any necessary wear and tear of the vital mechanism, the result of long life.

4. As a corollary of this, the prophylaxis of such diseases consists in a good heredity and a well ordered life, especially the avoidance of syphilis and alcoholism.

5. That their treatment consists largely in proper personal hygiene and the treatment of the constitutional dyscrasiæ, upon which such degenerations so frequently depend.

DR. WILLIAM F. WAUGH, of Chicago, read a paper on

MANAGEMENT OF VALVULAR HEART DISEASES.

Dr. Waugh's paper called attention to the importance of the mechanical principle in the treatment of acquired valvular lesions of the heart. The progressive deficiency in the heart's power is to be met by diminishing its work: *a*, by limiting the exercise to that necessary to keep up the health; and *b*, by reducing the bulk of the blood by abstention from liquids and from fattening foods.

The recent intravascular deposits may be removed by the iodids. By these means, comfortable and useful life may be prolonged to the full normal limit, barring accidents.

The use of digitalis and its congeners is limited to their temporary administration, to afford relief while waiting the effect of the physiologic treatment.

DR. C. B. JOHNSON, of Champaign, read a paper entitled

STOMATITIS MATERNA,

in which he epitomized some of the more important facts pertaining to this disorder as follows:

1, it is a disease to which certain nursing or pregnant women are subject; 2, it is probably true that the disease has been comparatively infrequent of late years; 3, it is positively true that there has been nothing, or next to nothing, in medical literature of the past twenty or thirty years upon the subject; 4, in consequence of this, many medical men of ten, fifteen, or twenty years' experience are not cognizant of ever having seen a case, and would perhaps not recognize one if met; 5, of the real nature of the disease, nothing is known, even by those who have made it a special study, except that it is a peculiar cachexia to which certain pregnant or nursing women are liable; 6, the alimentary canal is the favorite seat of the disease; but should any nursing or pregnant woman suffer from obscure trouble about the lungs, nose, head or ears, the possibility of stomatitis materna acting as the underlying cause should be carefully considered; 7, when the disorder attends lactation the remedy above all others is the suppression of the secretion of milk; 8, when pregnancy is complicated by the disease, cases of such a grave character may come up as to even justify the bringing on of premature labor.

DR. M. P. HATFIELD, of Chicago, read a paper on

MATERNAL IMPRESSIONS.

He prefaced his remarks by quoting Dewees, as follows: "Nor do we believe in the influence of the imagination upon either the form, color or future destiny of the child, however powerful this faculty may exert itself during gestation." He rejects all the reasoning as well as the appeals of facts, purporting to be illustrative of this wonderful influence. "We conscientiously declare that we have never in a single instance had reason to believe that the imagination had exerted the slightest control upon the fetus in utero—contrary to our early belief upon this subject."

Dr. Hatfield summarizes thus: 1, that such cases must have come under your personal knowledge and reported to you by some one incapable of judging; 2, whether the alleged blemish is not one well recognized in teratology as produced by other causes than maternal impressions; 3, that the possibility of atavic defects must be excluded before any given defect can be admitted to be due to maternal influences; 4, that there will occur from time to time a certain number of remarkable coincidences as yet inexplicable, except by that cast of mind which is always looking for the occult and marvelous.

DR. RICHARD DEWEY, of Chicago, contributed a paper entitled

A COMPARATIVE STUDY OF EARLY LIFE CONDITIONS IN TWO HUNDRED CASES OF SANE AND INSANE PERSONS,

which was read by the Secretary of the Section in the absence of the author. Tables were presented in connection with the paper showing the relative ratio of various early life influences in these cases.

FIRST DAY—EVENING SESSION.

The Association met at 8 P.M., and was called to order by the President.

Introductory remarks were made by Dr. J. N. Randall, of Decatur, after which the first Vice-President, Dr. D. R. Brower, of Chicago, took the chair, and President Will delivered his annual address, his subject being

VIVISECTION IN ITS RELATION TO THE ADVANCEMENT OF MODERN MEDICINE.

The utilization of living beings for the purposes of scientific experiment and investigation was not a new practice, said the speaker. Modern surgery virtually owes its existence to the work of the vivisector, not only in the art but in the science. The very first principles upon which it rests, those of asepsis and antisepsis, have been developed under the pressure of vitality's obedience to experimental force. No more brilliant illustration of the dependence on vivisection for the art of modern surgery can be found than is exemplified in the work of some of those who have been and are honored members of this Association. Who, for instance, with a knowledge of the facts, can for a moment gainsay the value of the results of the work in that direction of an Andrews, a Parkes, or a Senn? The thousands of lives that are every year saved through the merciful instrumentality of modern surgery—especially abdominal—attest the value of that preliminary effort on the lower animals which is necessary to secure not only operative skill, but the most perfect technique. Nearly every principle of modern surgery has been wrought out by the careful study of the vital processes on the lower animals, under artificial conditions and circumstances imposed for the purpose of arriving at a most careful estimate of the correlation of forces or influences involved, and the most practical results in their guidance and application to the welfare of the human race. Upon the basis of such commanding principles as those elucidated by actual experiment on the lower animals, has been built the noble structure of our science and art as it appears to-day, which is a gem of architectural beauty grandly visible here and there, giving promise of the sublime heights and magnificence yet to be attained.

DR. EDMUNDS ANDREWS, of Chicago, delivered the address of Section 2, taking for his subject

A NEW METHOD OF GASTROSTOMY.

The address was illustrated with diagrams. He said impermeable stricture of the esophagus necessitates making an artificial opening in the stomach, for the purpose of feeding the patient. In the old method an unexpected obstacle arose. Though the stomach received and digested the food put into it through the artificial opening, yet it was unable to propel it onward into the intestines, because whenever it contracted for that purpose, the resistance of the pylorus was greater than that of the artificial orifice, and the chyme was forced out of the wound and lost, hence the majority of the patients ultimately, though slowly, died of starvation. Several plans have been devised to overcome this difficulty, notably those of Kocher, Alberti and Wetzel. The respective methods of these gentlemen were then dealt with. Dr. Andrews said the thing needed for permanency is the formation of a valvular canal with a lining of mucous membrane. The mucous membrane of the stomach is separated from the muscular coat by an exceedingly loose stratum of connective tissue. In testing this, he found that the mucous layer could be made to glide to and fro in a remarkable manner over the muscular coat. This exceeding looseness of the membrane greatly facilitates raising flaps from it to construct the valvular mucous canal He describes his procedure as follows: External antisepsis is obtained as usual, but the preliminary washing out of the stomach can not be performed on account of the stricture of the esophagus. The external incision is made in the usual way, and the stomach exposed and identified. It is then drawn out through the wound far enough to give freedom in handling. An incision is then made from near the upper border directly downward about two inches. Before this is done, however, provision must be made to prevent its fluids from getting into the peritoneal cavity by the careful placing of large sponges. As the patient has been prevented by the stricture from taking food, the contents will be found to be only the secreted

fluids. The cavity is now washed out with warm boric acid solution, and the edges of the incision secured against slipping back into the abdomen. Now the lower part of the anterior wall is raised, turned out through the incision and spread out flat. From the lower end of the cut, two incisions are made through the loose mucous membrane, one to the right, and the other to the left, each extending about three-quarters of an inch laterally from the lower end of the main incision. From the end of each of these two mucous membrane incisions, another cut is made downward through mucous membrane, parallel to the axis of the body and to each other for a distance of about one inch and a half. At the lower ends the two incisions are turned at a right angle toward each other, but not meeting, a separation of one-third of an inch being left between them.

A female dog weighing forty-five pounds was subjected to this operation April 5, 1894. There was no leakage of the contents of the stomach whatever. At the end of a month she was in robust health, and on being killed May 4, the valve in the stomach was found in good working order, and readily pervious to tubes. We think that there might be a liability in some cases to a contraction of the external or internal orifice of the channel, and hence after the tube is withdrawn it should be occasionally re-inserted to test the size of the channel and if necessary to dilate it.

The address of Section 3 was next in order, and was delivered by Dr. William E. Quine, of Chicago. Dr. Quine selected for his theme

COMPULSORY VACCINATION.

He said vaccination was introduced to the attention of the medical profession by Edward Jenner in 1798 as the result of investigations that extended over a period of twenty years. During the century preceding, according to the estimates of our most authoritative writers and statisticians, smallpox, "the most terrible of all the ministers of death," destroyed in Europe alone, 50,000,000 human lives. Think of it! Five hundred thousand deaths every year from the most loathsome pestilence known to man; thirteen hundred deaths every day, nearly a death every minute for a hundred years. If it be true, as is believed by enlightened people, that universal vaccination and revaccination, efficiently done, will put an end to all this desolation and horror from epidemics of smallpox, and finally eradicate the disease altogether, it would appear that the discoverer of vaccination is the greatest benefactor that mankind has known. Alexander was great. Cæsar was great. Hannibal was great. Napoleon was great. They were all great—as destroyers. What have they done? What have all the kings and potentates and warriors of earth done, in comparison with one member of the medical profession in the direction of adding to the sum total of human happiness and human life? Are such conceptions of the possibilities of vaccination an idle dream?

As proof of the protective influence of vaccination, many examples were cited by the speaker, and but one will suffice here. A village in Leicestershire of thirteen hundred inhabitants was visited in 1872 with smallpox. All but two of the inhabitants were vaccinated, and they escaped the disease. The two unvaccinated persons contracted the disease and died of it.

Age for Vaccination.—Children are more liable to smallpox than adults, and more liable to die when attacked. The younger the child the greater the danger; hence vaccinate during the first year of life.

The speaker then dwelt eloquently upon inefficient vaccination, susceptibility, anti-vaccination societies, vaccination laws, and finally made an eloquent and earnest plea to more thoroughly educate the profession in regard to the disease and, above all, the press and public schools.

Second Day—Morning Session.

After the transaction of some miscellaneous business, the Society listened to the address of Section 1, which was delivered by Dr. Victor C. Vaughan, of Ann Arbor, Michigan, who selected for his subject, "Nucleins and Nuclein Therapy."

Section 2.—Chairman, Dr. D. W. Graham, Chicago; Secretary, Dr. Ellen H. Heise, Canton.

Section called to order by the Chairman.

Under the head of

SURGICAL SHOCK,

Dr. Lester Curtis, of Chicago, made some remarks on its physiology and pathology. He said that Billroth states that he had never lost a case from shock within twenty-four hours after operation, which would almost preclude the possibility of shock, and still surgeons had seen patients suffer from railroad injuries with depression and other symptoms so well known, that the fact of such a thing as surgical shock could hardly be doubted. Surgical shock is a condition of the nervous system that is produced by any sudden or violent injury without any lesion that can be demonstrated after death. The speaker then dwelt upon the different varieties of shock.

Dr. Wm. Barnes, of Decatur, followed with a paper on

THE DIFFERENTIAL DIAGNOSIS AND ELEMENTS OF PROGNOSIS OF SURGICAL SHOCK.

The relation of cause and effect is usually so apparent that the question of diagnosis of shock rarely presents any difficulty, so little in fact that in most treatises on surgery there is no mention whatever made of the subject, and in practice the physician seldom gives much thought to the matter. As regards prognosis the very young and very old are especially prone to severe shock, but in the former the reaction is apt to be rapid and complete, while in the latter it is often slow and feeble. The extent, character and seat of the injury must always be considered in prognosis. The more profound the prostration, and longer the condition prevails, the greater is the danger. Increasing rapidity of the pulse with diminution of force and volume in connection with continued subnormal temperature almost always indicate a fatal termination.

TREATMENT—WHAT TO EXPECT FROM DRUGS IN SURGICAL SHOCK.

By Dr. E. W. Weise, of Ottawa. In the absence of the author of this paper, Dr. Wm. E. Quine was called upon by the Chairman of this Section to make some remarks. Dr. Quine said that treatment in relation to the management of any morbid condition refers to the removal of the cause. If the cause of the shock be violent, accompanied with agonizing pain, the immediate or rapid control of the element of pain contributes to the prompt removal of the consequences of that suffering. The employment, therefore, of medicinal agents to control pain and relax the spasm of the cutaneous blood vessels can usually be resorted to with satisfactory results. His conception of the medical management of shock relates first of all to the immediate control of pain, and second to the restoration of the functions of circulation and metabolism which were profoundly and instantaneously interfered with by reason of the operation of the primary disturbing cause.

Dr. C. C. Hunt, of Dixon, contributed a paper entitled

SOME OBSERVATIONS ON THE TREATMENT OF FRACTURES OF THE NECK OF THE FEMUR WITH ILLUSTRATIONS SHOWING A PRACTICAL AND EFFICIENT METHOD.

In the absence of the author, this paper was read by the Secretary, Dr. John B. Hamilton.

The point brought out in the paper was that union by bone of non-impacted intracapsular fractures of the neck of the femur is now accepted as proven. The principles governing the treatment of fractures within and without the capsule are the same. Then followed a statement of the conditions favorable for repair by bone. The author thought the comfort of the patient was too often overlooked by the desire on the part of the surgeon to effect fixation and equal length of the limb. A report of cases followed and photographs were exhibited illustrating the method of treatment by Hunt's modification of Dr. Verity's splint with lateral as well as longitudinal extension.

Dr. William J. Eddy, of Shelbyville, reported a case of secondary hemorrhage in gunshot fracture. The paper dealt principally with gunshot fractures of the long bones of the leg and the manner of dealing with them in the light of to-day.

Dr. F. C. Vandervoort, of Bloomington, read a paper entitled,

PEROXID OF HYDROGEN AND THE RESULT OF ITS USE IN MY HANDS.

He considered the drug one of the most important additions to our list, and one that will give entire satisfaction in properly selected cases. He has used it in cases of empyema and in abscesses of all kinds, and especially in large ones with very small openings, with gratifying results.

OPERATIVE TREATMENT OF PROSTATIC OBSTRUCTION.

Dr. Lewis L. McArthur, of Chicago, read a paper with this caption.

At various times, by different authors, the following plans of treatment have been more or less strongly advocated for the relief of prostatic obstruction: Electrolysis, cauterization (actual or galvanic), castration, prostatectomy (partial or complete), drainage, perineal or suprapubic.

With regard to suprapubic drainage, the technique is to be found in all of the more recent works on vesical surgery, but the essayist recalled some of the special points as follows:

1. After irrigation with an antiseptic solution, distend, but do not rupture, the bladder with your antiseptic solution, and constrict the penis.

2. Put the rectal bag in place and gently distend with water.

3. In all the dissection do not tear, but cut.

4. Gently separate the recti and pyramidales with few cuts, cut slowly through the presenting transversalis fascia with its fat, after pushing that at the upper angle forward. When muscular wall of the bladder is reached, pack the wound with gauze for twenty-four or forty-eight hours at the point where you desire to puncture.

Drainage tubes of various kinds are recommended, but the speaker had found Andrews' empyema tube to answer the purpose. The nature of the siphon and its method of working should be made clear to the attendant. Broome suggests the use of a trocar for making the perforation in the bladder wall, and then using a tube of the same dimensions. It prevents all leakage, and when siphonage is employed it insures the good action of the latter by preventing the aspiration of air into the bladder, which is likely to occur if the drain fits the wound loosely.

DR. WILLIAM E. GUTHRIE, of Bloomington, reported an interesting case of resection of the shoulder joint with especial reference to restoration of function, and exhibited the patient. The case was unique on account of the amount of bone restored and the remarkable restoration of function in a short time.

DR. A. E. HOADLEY, of Chicago, read a paper entitled,

INDICATIONS FOR MECHANICAL TREATMENT IN THE VARIOUS STAGES OF HIP JOINT DISEASE.

He said the first indication for mechanical treatment in hip joint disease is a diagnosis of the affection, and that just as soon as this can be made, mechanical treatment should be instituted. The first stage of hip joint disease was characterized by fixation and abduction, and more cases could be cured at this time than at any other. The author emphasized the importance of early treatment. Relative to traction, he favors a degree of traction that is comfortable. If three or four pounds of traction are sufficient to relieve the muscular irritability, in his opinion it is sufficient. As far as lateral traction was concerned, there were only a few cases in which it was particularly indicated or advantageous. Direct traction in a great majority of cases was ample.

SECOND DAY—AFTERNOON SESSION.

DR. FRANK H. MONTGOMERY, of Chicago, contributed a paper entitled

SOME COMMON ERRORS IN THE TREATMENT OF INFANTILE ECZEMA,

which was read by the Secretary of the Section in the absence of the author. Statistics show that more than one-third of the cases of infantile eczema originate during the first twelve months after birth. They also show that in over 80 per cent. of these cases some portions of the face and head are affected. These reports are based largely on dispensary and hospital practice where eczema of the covered parts of the body is much more common, caused by the presence of lice, dirt, by rough, coarse clothing colored with cheap dyes and by secretions and excretions retained in contact with the unwashed skin. The questions that enter into the treatment are a proper diet, and the judicious selection of local remedies, etc.

DR. E. FLETCHER INGALS, of Chicago, followed with a paper entitled

CAUTERIZATION OF THE NARES AND ACCIDENTS THAT MAY FOLLOW.

Although from time to time articles have been written to show that serious accidents often follow cauterization of the nares, the author thinks, when properly done, this operation is quite as free from discomfort or danger as any other minor surgical procedure. Serious results following these operations, he thought, were due to carelessness or inexperience upon the part of the operator which induced him to make extensive wounds. or to repeat burnings too frequently.

The essayist summarized as follows:

1. It is important that antiseptic applications be regularly employed after cauterization of the nasal mucous membrane, and that the nostril be closed by cotton for several days, whenever the patient is out of doors, to prevent taking cold.

2. As a rule, at least two weeks should intervene between operations upon opposite sides, and three or four weeks between those on the same side.

3. No serious results are at all likely to follow cauterizations made in this way.

4. Practically all cases of hypertrophic or intumescent rhinitis may be cured by this treatment, though occasionally portions of the turbinated body must be removed.

DR. NORVAL H. PIERCE, of Chicago, read a paper entitled "The Treatment of Otitis Media Purulenta Chronica."

DR. T. MELVILLE HARDIE, of Chicago, reported an interesting case of empyema of the sphenoidal sinus and posterior ethmoid cells.

If one is to judge from the great rarity with which the sphenoidal sinus is mentioned in current medical literature, it must be considered in a great measure an unknown land, so that the history of the case as presented by the essayist was very interesting. The patient was nine and a half years of age.

DR. J. ELLIOTT COLBURN, of Chicago, read a paper entitled

PROGRESSIVE MYOPIA,

in which he took up the physical side of the subject in its relation to the development of the eyes, and then especially in relation to the causes of progressive myopia. Myopia of a low degree is a serious inconvenience, but when it reaches four or five dioptrics it is a calamity. It would seem from looking over the statistics of various observers that a refraction in the newly born infant is that described as hyperopic, the static refraction being too low for the length of the eye. The evolution of the eye from that time is toward the emmetropic eye. In case of arrested development the result is hyperopia of varying degrees, or if the evolution is carried beyond emmetropia, it becomes myopia of low or high degree. The author cited three cases illustrating the development of myopia from hyperopic eyes. The treatment of progressive myopia consists in correcting the error of refraction, giving general tonics, prohibiting the use of the eyes for close work, and instilling atropin.

Under the head of

FIBROID TUMORS OF THE UTERUS,

the following divisions of the subject were considered:

a, "Natural History," by Dr. L. A. Malone, of Jacksonville; *b*, "Their Complications," by Dr. Marie J. Mergler, of Chicago. Dr. Mergler's paper was read by the Secretary of the Section, Dr. Heise, in the absence of the author.

As we have no reliable data as to the relative frequency of fibroid tumors of the uterus, it is impossible to state even approximately, what proportion of fibroids are complicated with other morbid conditions, for there is still much diversity of opinion as to the relative frequency with which the fibroid *per se* occurs.

In a series of fifty-three consecutive cases, observed in the gynecological clinic of the Woman's Medical School, in which the presence of one or more fibroids was discovered, only three were sufficiently large to lead the patient to suspect the growth, and in every instance the patient applied for treatment of some marked symptom or complication—for example, sterility, repeated miscarriages, dysmenorrhea, menorrhagia, and irritation of the bladder. Six of these cases applied with sterility; seventeen gave a history of one or more miscarriages; twenty-eight suffered with dysmenorrhea; seventeen with menorrhagia; two with amenorrhea; thirteen with irritable bladder, and four with the symptoms of chronic nephritis.

c, "To What Extent are they Influenced by Medical Treatment?" by DR. WALTER RYAN, of Chicago.

The author said it was essential, before attributing curative results to any medicinal agent, to exclude all *post hoc non ergo propter hoc* cases, otherwise medicines might be given more credit than they deserved. Numerous medicinal agents have been recommended from time to time for the treatment of fibroid tumors with an enthusiasm which amounts to fanaticism. These were gallic acid, cannabis indica, hydrastis, cinnamon, ergot and many others, but we had seen very few cases really cured by drugs. In the imagination of Apostoli and the many little apostles, we had seen uterine fibroids almost universally cured by electricity, but after their treatment by electricity and other medicinal means, the surgeon was called upon to remove them by surgical interference. In general, uterine fibroids are influenced by drugs only to a slight extent, but in exceptional cases apparently to a considerable extent.

d, "The Palliative Operations and their Comparative Value." This paper was read by DR. F. HENROTIN, of Chicago.

e, "Choice of Radical Operations for the Cure of Uterine Fibroids," by Dr. Henry T. Byford, of Chicago.

Polypoid fibroids should always be removed per vaginam when smaller than a child's head, and the same may be said of the submucous variety when not complicated by other tumors of good size belonging to other classes. Submucous tumors larger than a child's head usually require abdominal section. In such cases the uterus may be incised, the tumor enucleated, the bed sewed up, and the uterine cavity drained with gauze.

Intramural fibroids are usually multiple. When small they can sometimes be radically cured by ergot, electricity, oöphorectomy, or vaginal ligature of the uterus, as recommended by Dr. Franklin H. Martin. When they press injuriously upon surrounding tissues or occlude the cervix and can not be enucleated, the uterus may be removed, per vaginam, with or without *morcellement*, provided the whole mass is not larger than a child's head.

Single subserous and pedunculated growths can be removed without taking out the uterus. Multiple subserous, intraligamentous tumors require supravaginal amputation or total extirpation.

f, "The Radical Operations—a Review, with Description of Technique," by Dr. N. Senn, of Chicago.

Dr. A. R. Small, of Chicago, read a paper entitled

SHOULD LACERATIONS OF THE CERVIX UTERI BE MORE FREQUENTLY REPAIRED?

This question the author answered in the affirmative. Few would believe, unless they had had personal experience in repairing these lesions, that even a slight tear in the cervix uteri would give rise to as many and varied symptoms, as those who had performed trachelorrhaphy many times know to be the case. He knew of no lesion, so apparently slight, which was capable of producing so many and varied symptoms as a lacerated cervix. He believes every woman should be examined within three months after confinement, and if her cervix is lacerated it should be repaired at that time.

Dr. J. F. Percy, of Galesburg, reported a case of tubal pregnancy upon which he had operated, with recovery of the patient.

Dr. C. W. Rook, of Quincy, reported a case of parotitis with metastatic metritis of the pregnant uterus, resulting in the miscarriage of a three months' fetus. The patient was 30 years of age. In consulting the literature he was unable to find but one recorded case in which the pregnant uterus was the seat of metastasis, and this case is recorded by Dr. F. D. Haldeman, in the Journal of the American Medical Association, May 14, 1887.

All writers on parotitis refer to a possible metastasis of the testicle, mammæ, ovaries, etc. Niemeyer and Constatt include the uterus, while a study of parotitis, such as can be obtained from current medical literature, shows that nearly every organ and tissue of the body have figured in the metastatic complications of parotitis.

ABORTION.

This subject was dealt with in a series of papers as follows:

a, "The Prophylactic Management," by Dr. J. C. McKinney, of Barry.

According to Schuhl, repeated abortions in the same woman are usually traceable to some one cause. More rarely, there is a different cause for each one.

Treatment should be begun in the intervals of pregnancy, or after the beginning of gestation. The cause is to be sought for and treated. Some diseases, such as nephritis, pulmonary tuberculosis and cardiac affections are not amenable to treatment, and are aggravated by pregnancy. Such patients should be advised to avoid pregnancy. The prophylaxis depends altogether on finding the cause and removing it if possible.

b, "Management of Inevitable Abortion," by Dr. C. W. Sibley, of Fairchild.

To decide just when a threatened abortion becomes inevitable is always desirable and sometimes difficult. When it is decided in a given instance that an abortion is inevitable, the case loses none of its interest, for there is no class of cases which cause more anxiety to the average medical man than abortions. Until comparatively recent years extreme conservatism was the rule of practice, this being more especially so before the prevention and treatment of sepsis were brought to their present state. Even now a practitioner may follow any course he may fancy and find some authority for his course; and yet the trend of modern practice is undoubtedly toward radical methods, and this because the two chief sources of danger in abortion are best thus avoided. Of these two principal sources of danger, hemorrhage is the most immediate, and sepsis, while more remote, the most far-reaching and terrible in the suffering it may cause and the sequelæ liable to follow it.

The tampon, hot and cold douches, ergot, quinin and aortic compression are resources likely to be efficient in the control of hemorrhage until the uterine cavity can be emptied. With the danger in this direction, when proper after-treatment has passed, as the dangers of sepsis are all augmented by delay, and as sepsis is always easier prevented than remedied, the only safe rule is to immediately evacuate the contents of the womb in all cases where it is decided that abortion is inevitable, due care being taken to avoid rupture of the membranes, which accident facilitates the escape of the ovum and the retention of the membranes.

c, "Management of Neglected Cases," by Dr. Abbe F. Rooney, of Quincy.

The essayist said he supposed by neglected cases was meant such cases as call no doctor, and those in which the doctor does nothing when he is called. When the physician can convince himself either by the profuseness of hemorrhage or its long continuance, or by the odor of decomposition and upon bimanual touch note the loss of elasticity which accompanies an unruptured fetal envelope, then an effort should at once be made to remove thoroughly whatever may be found within the uterine cavity. Having douched the vagina with a bichlorid solution—1–4000—to avoid any external infection, Sims' speculum and a tenaculum will bring the cervix clearly under control, and slight dilatation will enable one to carry Emmett's curette forceps into the cavity and grasp whatever is loosely attached therein. Now, swab the cavity with a bichlorid solution on cotton held in the forceps before proceeding to pass a dull wire curette about in all directions to discover adherent particles of the placenta that have escaped the forceps. Hemorrhage is sometimes quite free, but it lessens after all the shreds are removed and if the cavity is swabbed with a saturated solution of iodin crystals in a 95 per cent. solution of carbolic acid, there will be provoked a contraction of muscular tissue and closure of torn vessels, so that there is no danger of subsequent hemorrhage.

d, "The Sequelæ—Their Importance to the Gynecologist," by Dr. Henry P. Newman, of Chicago.

The importance of the subject of abortions in their connection with the causation of gynecic disease, can be somewhat appreciated when we consider that their frequency is placed by the most conservative writers as about one in nine normal deliveries, and the French writers so far exceed this estimate that according to Pajot and Verrier, it may be stated that abortion is more frequent than delivery.

First upon the list of unfortunate consequences of abortion is acute sepsis. This complication may occur by infection *in loco*, or by infection from without. The former is more rare, but the latter not infrequent, and this is largely owing to the neglect which prevails among women who abort, particularly those who have induced the occurrence. Infection from without, while more common, is a complication which should always be prevented, and is caused by the introduction of pus-producing bacteria through the use of various instruments, the hands, or some mechanical agents.

The author also referred to subinvolution as a complication following abortion. This may be produced by retained secundines, keeping the uterus distended, engorged and inflamed along its inner lining, or it may be the result of a metritis proper, or inflammation of its adnexæ, set up by trauma and acute infection. It is well known that a single abortion predisposes to recurrence, this in turn to a third and fourth, and hence what is termed the abortive habit is produced.

A paper on "Conduct of Natural Labor in Country Practice," contributed by Dr. Jas. E. Sutton, of Canton, was read by the Secretary of the Section in the absence of the author.

THIRD DAY—MORNING SESSION.

Section 3.—Chairman, Dr. Geo. W. Webster, Chicago; Secretary, Dr. G. A. Zeller, Peoria.

Section called to order by the Chairman.

Dr. M. S. Marcy, of Peoria, read a paper on

WHAT IS THE PROPER MODE OF EXECUTING CRIMINALS?

The author suggested as one of the best means morphin and asphyxia. A criminal who is condemned to die should be placed in an air-tight cell, a large dose of morphin given hypodermatically, and while he peacefully sleeps the gas should be turned on in his cell and continued until he ceases to breathe.

In this way, the author said justice could be meted out,

death would be sure, and none of the horrors incidental to the customary mode of executing criminals would linger in the minds of the sheriff and his aids.

DR. ROBERT BOAL, of Lacon, followed with a paper in a similar line, which was entitled,

EMASCULATION AND OVARIOTOMY AS A PENALTY FOR CRIME IN THE REFORMATION OF CRIMINALS,

in which he took strong and advanced ground in favor of unsexing, by law, habitual criminals as the best means of preventing or minimizing the grosser crimes. The essayist had been in active practice for more than sixteen years, and has been during that time a close observer of the efforts at the reformation of criminals, and considers that these efforts have been in a large degree failures.

DR. W. R. ALLISON, of Peoria, read a paper with the following caption:

THE CORRECTION OF CRIMINALS BY EDUCATION.

He said that while public punishment and execution may not accord with the prevailing opinion of to-day, it is a fact that punishment by burning at the stake, if secretly executed, would have no influence upon the individuals whose penalties for crime are intended. It is the result of crimes acting as an effect by education through reason or fear that will check the cause. Perverted bodily functions which stimulate immoral and criminal acts, if not amenable to an educational equilibrium, should be removed, when they can be, without shortening longevity and preventing crime. Abnormal or criminal masculine acts, for which the rapist is punished, should be emasculated, not secretly, for that would be revolting to a few.

DR. BOERNE BETTMAN, of Chicago, followed with a paper entitled

LEGISLATION FOR THE PREVENTION OF BLINDNESS,

in which he advocated and urged the adoption of legislative measures for its prevention. He offered the following resolutions which were adopted:

WHEREAS, Statistics compiled in this country and in Europe demonstrate that fully 25 per cent. of our blind owe their affliction to an inflammation of the eyes appearing a few days after the birth; and

WHEREAS, Experience has proved that the inflammation can be cured and the eyesight saved in the majority of cases if treatment is instituted at an early stage of the disease; and

WHEREAS, The destruction of the eye and blindness are usually the result of delay in treatment; be it

Resolved, That we heartily recommend that the people of the State of Illinois represented in Senate and Assembly, do enact as follows:

SECTION 1.—Should one or both eyes of an infant become inflamed, swollen or reddened at any time within two weeks after its birth, it shall be the duty of the midwife or nurse having charge of such infant, to report in writing, within six hours to the health officer or some legally qualified practitioner of the city, town or district, in which the parents of the infant reside, the fact that such inflammation or swelling or redness of the eyes exists.

SEC. 2.—Any failure to comply with the provisions of this Act shall be punishable by a fine not to exceed two hundred dollars, or imprisonment not to exceed six months, or both.

DR. D. R. BROWER, of Chicago, read a paper on

MEDICAL EXPERT TESTIMONY,

in which he said he believed every member of the Society would agree with him that the display of medical expert testimony in the Cronin and Prendergast cases of Chicago, and the Hart case of Rockford, were not creditable to the medical profession, had not promoted the cause of justice, and had not protected the interests of society by the suppression of crime. He said we had seen in these several cases medical men arrayed against medical men with precisely the same set of facts reaching diametrically opposite conclusions, as though all medicine was but empiricism, while the reputable and true physician knows that the laws upon which it is based are scientific and that two persons equally competent, with the same facts to consider, must of necessity reach the same conclusion.

At the conclusion of the paper, Dr. Brower presented the draft of a bill for an Act authorizing the judges of criminal jurisprudence in the State of Illinois to appoint persons to act as expert witnesses, which was approved by the Society. It is as follows:

Be it Enacted, By the people of the State of Illinois in the General Assembly represented, that the judges of the Circuit and Superior Courts of the State of Illinois, be and the same are hereby authorized to appoint in the month of January of each year, persons who shall act as expert witnesses in the medical and other sciences in giving opinion upon the evidence, as presented in a hypothetical form, of criminal causes that may be on hearing in the courts presided over by the said judges. Such expert witnesses shall hold their said appointments for one year or until their successors are appointed and qualified. They shall be entered as expert witnesses upon a list of such witnesses kept by the circuit clerk, and the said clerk shall issue a certificate of appointment as such expert witness to the person appointed as above.

Such expert witnesses shall be citizens of the State of Illinois and shall be known in the communities where they reside for their professional competency and personal probity, and if physicians they shall have been at least five years in regular and active practice. When expert opinion is desired in any cause pending in a criminal court, the trial judge presiding in such cause may, at his discretion, summon for duty under this Act, such expert witnesses to the number of three. Such expert witnesses shall be paid for their services by the county in which the trial for which they are summoned is held, in such sums as may be named by the judge.

It shall be the duty of such expert witnesses to give an opinion on the evidence as presented in hypothetical form in the case in which they are called. Such experts shall be subject to cross-examination by both prosecution and defense; but such cross-examinations shall be limited entirely to the subjects embraced in their opinion.

In criminal cases previous to trial, if the State's Attorney deems it advisable to have expert opinion, he shall so state to the court having jurisdiction of the cause, and the judge receiving such statement may summons expert witnesses to serve under this Act.

DR. SANGER BROWN, of Chicago, read the

REPORT OF THE COMMITTEE ON INFORMATION,

of which Dr. E. F. Ingals is Chairman. Among other things, the report dealt with the prevention of smallpox, and the cocain habit.

Before the days of vaccination, the annual mortality from smallpox in England averaged about three thousand to each million inhabitants. In France there were 30,000 deaths per annum, and in Russia smallpox is said to have destroyed 200,000 of the inhabitants in one year. The Committee urged the necessity of re-vaccination at least once in seven years, or oftener in case of unusual danger from the disease.

Another subject of much interest to the profession was the alarming increase of the cocain habit due to the promiscuous sale of various catarrh powders containing a dangerous quantity of this drug. The Committee said they could not urge too strongly upon the profession that prescriptions containing cocain, which may be repeated, should never be given, and it should be considered criminal practice to place this drug in the hands of the laity for their unrestricted use.

The following resolutions were read and adopted:

By J. B. Maxwell, of Mount Carmel:

Resolved, That the Illinois State Medical Society give the scheme for an epileptic colony, as proposed, its emphatic and unqualified indorsement:

By A. C. Corr, of Carlinville:

Resolved, That the Secretary be hereby instructed to request Senators and Representatives in Congress from the State of Illinois to use all means in their power to secure the passage of the AMERICAN MEDICAL ASSOCIATION Bill for the establishment of a Department of Public Health, with a competent medical man at the head.

By Dr. Graham:

WHEREAS, The bill making appropriation for the support of the army for the fiscal year ending June 30, 1895, was passed by the House of Representatives with the proviso "that hereafter no appointments shall be made to the office of Assistant Surgeon until the number of Assistant Surgeons shall be reduced below ninety, and thereafter the number of officers in that grade in the Medical Department shall be fixed at ninety;" and

WHEREAS, Such a reduction in the number of medical officers would seriously impede the administration of the Army Medical Department and greatly interfere with a continuance of the high standard of proficiency that has heretofore characterized that department, therefore be it

Resolved, That this Society earnestly protest against the proposed reduction, and urge the Representatives and Senators from this State to prevent its enactment.

Adopted unanimously. The Secretary was instructed to so inform our Senators and Representatives in Congress.

By Wm. E. Quine, of Chicago:

Resolved, That the Committee on Legislation be and hereby is instructed to use its best efforts to secure the adoption of a law prohibiting the sale of proprietary and other medicines in this State except on the prescription of duly licensed physicians; and except as

Provided, That such medicines may be sold if accompanied by a certificate from the State Board of Health to the effect that said medicines contain no ingredient hurtful to the public health.

The following officers were elected:

President—Dr. D. R. Brower, of Chicago.

First Vice-President—Dr. A. C. Corr, of Carlinville.

Second Vice-President—Dr. C. B. Johnson, of Champaign.

Permanent Secretary—Dr. John B. Hamilton, of Chicago.

Assistant Secretary—Dr. E. P. Bartlett, of Springfield.

Treasurer—Dr. George N. Kreider, of Springfield.

Dr. J. Homer Coulter, of Chicago, offered resolutions thanking the retiring President for his work in behalf of the Association, and also thanking the Committee of Arrangements, the Decatur Club, and the press for their excellent reports, all of which were unanimously adopted.

The retiring President thanked the Society for courtesies extended to him during his presidency.

Dr. Brower, the President-elect, was then presented, and made a few timely and appropriate remarks. There being no further business, the Society, on motion, adjourned to meet in Springfield, the third Tuesday in May, 1895.

Note.—By reason of the expeditious manner in which the President and the Chairmen of the respective Sections discharged their duties, forty-six papers were read, four addresses delivered, and the regular and miscellaneous business that came before the General Sessions disposed of.

Nebraska State Medical Society Votes for Revision.

Report of Committee on President Mansfelde's Address.

Lincoln, Neb., May 18, 1894.

To the President and Members of the Nebraska State Medical Society:

Your Committee to whom was referred the address of the President beg leave to report: That a careful consideration convinces them that the earnest attention given the Constitution, By-laws and Code of the American Medical Association by the profession all over the country, makes the action of the Association in referring the matter to the several State Societies, a timely one. We find, also, that two contending opinions exist—one that the Code is good enough as it now stands and should not be altered or amended; the other, the very opposite, that the instrument has long since outgrown its usefulness. Your Committee suggest:

That it is unjust to the labors of the past to abolish its landmarks, the old Constitution and Code of the American Medical Association; and, also, that the assumption of infallibility of these documents is contrary to the spirit of our times, and it is, finally, our opinion that real grievances exist, for the correction of which we beg leave to recommend: That the President and Secretary of the Nebraska State Medical Society, under the seal of the Society, submit to the American Medical Association, for its approval, the following:

That no one shall become a member who has not the qualification hereinafter provided in an amendment to the Code.

That the membership shall be restricted to the members of the State and Territorial Societies, the Medical Corps of the United States Army and Navy, and the Marine-Hospital Service, having subscribed to the Constitution and Code of the American Medical Association, and that representation by delegates be abolished. That in case local and district societies are also admitted, either as such or by delegates, then such societies or delegates shall show that they have subscribed to the Constitution and By-laws of the *State or Territorial* Societies in the jurisdiction of which they are located.

That the existence and duties of the Nominating Committee be left as now provided for.

As to the Code: Article I. Section 1 should read: No student of medicine shall be accepted by any college or school of medicine, whose graduates expect to become members of the regular profession in good standing, who do not possess as a minimum qualification a diploma from a high school, admitting the owner to the first or freshman year of the best universities of the United States.

And further, no graduate of any college, or school of medicine, which does not require a course of medical training, comprising four school years of not less than six months each, or three school years of not less than eight months each, shall be entitled to membership in any subordinate body forming a part of the American Medical Association. And provided further, that the course of study must comprise all the branches now embraced in the curriculum of the Association of American medical colleges, and such requirements shall never be lowered, except by and with the consent of the American Medical Association.

That Article IV, Section 7 be amended to read: Any physician, who is a member of this Association or of one of its subordinate bodies, or any physician who by his qualifications is entitled to be a member thereof, shall enjoy the benefits of *consultations*, and these shall be the prerogatives of such members of the profession only. *Provided*, that this shall not preclude any member, or a physician entitled to membership, from rendering services in which urgency becomes a factor to the saving of life and limb, and such services only shall constitute an emergency, which precludes the possibility of calling into the case of legitimate consultants, who, as defined in this Section, are entitled to such distinction.

A violation of this Section shall be followed by loss of membership, or be a bar to it.

Article II, entitled: "Obligations of patients to their physicians," should be abolished; because the first party to this contract never has fulfilled, and never will keep its part of the compact.

Article I, Section 5, should be amended by striking out the words, surgical instrument or;" thus the Section should read, "equally derogatory to professional character is it for a physician to hold a patent for any medicine or dispense a secret nostrum, etc."

In case the Association will not grant this change, then it should, as a matter of justice and equity, include in the prohibitions: "*The copyrighting of any book on medical subjects;* then the Section should read, equally derogatory for a physician to hold a copyright for any book on any medical subject or a patent for any surgical instrument, etc."

(Drop ordinance Vol. 20, page 28, referring to specialists.)

There should be added a Section 6 to Article I, of the chapter, "On duty of physicians to each other," to read: "The field of medical knowledge is now so vast that no one mind can compass it in all its details. Nor can any one hand obtain the dexterity essential for the successful procedures and daring operations of modern medicine and surgery. Such work has become by selection that of specialists, who have become a decided factor in the progress of the healing art, and should therefore be encouraged."

They should be permitted to give notice, in manner entirely truthful, of their special practices.

Every practitioner shall have the right to state in his card that he gives preference to any one of the specialties now or hereafter recognized by the profession.

Finally your Committee recommend that the American Medical Association be respectfully urged to refer all proposed changes, including our own, to the Council of the Association, with instructions to report such changes to Constitution, By-Laws and Code as a careful consideration of every suggestion submitted may elicit, and that final action may be taken upon such report at the San Francisco meeting.

Your committee further makes suggestion that members of the Association will adopt as a custom for a distinction the signing of the letters A.M.A. after the affix M.D.

And we will ever pray.

George Wilkinson,
J. M. Alder,
E. M. Whitten,
D. C. Bryant,
C. Inches,
P. L. Hall,
A. S. von Mansfelde, *ex-officio*.
Committee.

Moved and seconded that the report be adopted.

Dr. Mitchell moved to adopt that part of the report of the Committee which refers to the requirements for admission to the AMERICAN MEDICAL ASSOCIATION; also including that part relating to Nominating Committee. Motion seconded and carried. He also moved that the remainder of the report referring to the Code of Ethics be referred to a committee of three, who shall report to-night.

THURSDAY EVENING.

Meeting called to order at 7:40 P.M. Vice-President Crummer presiding.

Under miscellaneous and unfinished business, on motion the rules were suspended to elect Dr. S. E. Cook, of Lincoln, whose application was filed during the meeting. The Secretary then announced that those desirous of obtaining credentials to the AMERICAN MEDICAL ASSOCIATION should make themselves known to the Society. The Secretary said further that he held in his hand the message that the Nebraska State Medical Society would send to the AMERICAN MEDICAL ASSOCIATION at San Francisco; that the Society in delivering such a message was acting cowardly. The AMERICAN MEDICAL ASSOCIATION cares little to be told to raise the standard of medical education. "It is doing this with little trouble each year. What it desires of you is to give it some idea of the feeling in the States concerning the Code. Give it some idea on this question. Tell it concerning the questions of consultation and the patenting of instruments, whether they shall remain or whether they shall go, or acknowledge frankly that the matter is too much for you. Let us say something."

Dr. Ely introduced the following resolution:

WHEREAS, This Society is pleaded with by the AMERICAN MEDICAL ASSOCIATION to assume part of the responsibility of the national question, the Code of Ethics; and

WHEREAS, It is right that we do lend ourselves to the responsibility of this issue; and

WHEREAS, It seems impossible for our Committee to point out what changes are desirable; therefore,

Resolved, That in our opinion the interests of professional honor and rectitude will be best served by the entire abrogation of all that portion of the Code which relates to consultation and the patenting of instruments.

Dr. Ely, in answer to a question that if he meant by said resolution to abolish entirely the Code, said: "No; it will only abolish that part of it which makes of the Code, *a questio vexatio*, and that which our Committee on this matter acknowledge, after a night's work, entirely unable to revise. Our vote will in no way bind this Society to anything. It is simply an expression of opinion."

Dr. Wilkinson: Mr. President, before you put this matter to a vote I should like to say a word. Remember this is a serious matter. We do not need to adopt this resolution; adopt or reject, it serves the same purpose. Are you satisfied that the members present will represent the opinion of the Society? This is the important and dominant part.

The resolution was carried.

College of Physicians and Surgeons of Philadelphia.

ORTHOPEDIC SECTION.

EXHIBITION OF APPARATUS FOR PREVENTING AND CORRECTING DEFORMITIES OCCURRING AFTER EXCISION OF THE KNEE JOINT, BY DR. G. G. DAVIS.

DR. G. G. DAVIS—In the treatment of resection of the knee, flexion often occurs. It is difficult to get firm union in a straight line, and I believe this difficulty is not recognized sufficiently, and efficient means are not taken to provide against it. This is seen not only in private practice, but still more frequently in cases on which operation has been previously done, which afterwards apply at our surgical dispensaries. I am quite of the opinion that effective apparatus of some sort is necessary. I do not know what appliances the other members have used for the treatment of this tendency, but the apparatus which I have found to be most efficacious has been as follows:

It consists of two iron sides which are joined at the ankle and have a stirrup beneath the foot; on the inner side the upright reaches to the perineum; on the outer, to above the trochanter.

The outer piece is fastened above to a metal hip band passing three-fourths around the pelvis and lying, like a truss, just below the crests of the ilia. The posterior portion of the leg is supported by the heel in the shoe below, and a piece of sole leather above going around the posterior half of the thigh from one side iron to the other and touching the gluteo-femoral fold. Pressure is made on the front of the knee by a padded sole-leather knee cap, fastened to the inside iron by two straps, while its outer side, passing down between the limb and side iron, is depressed by one or two screws fastened to a plate on the outer side iron.

Antero-posterior displacement is met by turning the screws and thus forcing the knee backward.

Lateral displacement is met by bending the side irons in or out as required by wrenches.

Any tendency to inversion or eversion is met by twisting the outside iron just below the hip joint with wrenches.

A soft leather hip band will not do, as it will not fix the brace firmly enough in relation to the pelvis to prevent rotation. In order to avoid dropping of the toe, while the patient is going around with a high shoe and crutches, the ankle joint should be fixed by locking it with a screw which can be removed when the limb is used for walking.

I am averse to using any apparatus, like plaster-of-paris, that can not be altered, and conceals the part. I wish to see the limb every week, so that if any tendency to deformity shows itself, it can be at once met by applying a positive pressure in the proper direction.

DR. DEFOREST WILLARD—It seems to me questionable whether the plate upon the outer side will make as much pressure as the pad ordinarily placed in this position.

DR. G. G. DAVIS—It is simply a matter of taste. I prefer the screw arrangement because straps are apt to yield and become loose, while with it the parents can, by turning the screw with a key, always keep the pressure firmly applied.

DR. H. AUGUSTUS WILSON presented a cast of a leg, showing right angle flexion and rotation after excision of the knee, and said: When I first saw this patient five weeks ago at the Jefferson Hospital he said he was aged 14 years, and that nine years previously he was operated upon at St. Petersburg for what appeared to have been tubercular osteitis. The operation seems to have been excision of the knee joint, and it occurred to me it might be of interest to the Section to study the case showing such serious ultimate deformity. For six months the child walked with crutches, but on abandoning them the leg became bent, and at the end of a year the leg presented the appearance of right angle flexion.

At the time I performed secondary resection at the line of the original excision, there was an immense amount of callus. In sawing, I also found a large amount of callus thrown in the popliteal space. The curve which existed was very large in the upper end of the tibia and flexion seemed to have occurred in the callus; the case illustrating one of the unfortunate results of not using absolute fixation and crutches long enough. From the history of this case I judge that the condition of tubercular osteitis existed something like two years previous to the first operation. It is interesting also to know that at the upper end of the tibia, which was the original seat of the tubercular osteitis, there was a clearly marked cavity, and in the center a fibrous mass of cheesy consistency. I gouged this out and the patient did fairly well until the relighting of the tubercular inflammation. There has been primary union and the inflammation has subsided under the use of iodoform injections. The case is interesting in connection with a number of cases which I reported at the Academy of Surgery, in which flexion took place after excision. (*American Journal of the Medical Sciences*, March, 1893.)

DR. F. X. DERCUM—As displacement occurs from active flexion of the muscles, would it not be a good plan to excise the joint and then tenotomize the muscles?

DR. G. G. DAVIS—Tenotomy of the muscles would obviate the tendency to deformity occurring immediately after operation, but would have no influence upon deformity occurring subsequently; that is to say three months, six months, or a year afterwards, because union would already have occurred.

DR. G. G. DAVIS—I would like to say a word about the use of the apparatus of Dr. Goldthwaite which has been exhibited by Dr. Willard, because in it there is an attempt made to exert force in a manner which has not yet been alluded to. Dr. Willard spoke of posterior luxation and said that in such cases he usually used excision. Ordinarily, straightening of a joint is done by simply flexion and extension movements; not only can these movements be made with the apparatus shown to-night but there is a direct pulling forward of the head of the tibia and fibula. If this apparatus will do that satisfactorily, it will obviate the necessity of resection in some of these cases of sub-luxation and therefore I would like to hear the results of its trial.

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All members of the Association should send their Annual Dues to the Treasurer, RICHARD J. DUNGLISON, M.D., Lock Box 1274, Philadelphia, Pa.

SATURDAY, MAY 26, 1894.

ABORTION.

In its consequences, there is no accident that can befall the child-bearing woman more serious than abortion. There is no doubt that a long period of invalidism, ending perhaps in a trying and critical operation or a tedious convalescence and slow regaining of a shadow of the former health, may have a starting point in an abortion. The picture is a familiar one to the gynecologist. A recent writer[1] has declared: "In my private or dispensary practice, it is an almost daily experience to meet a new case of advanced disease of the uterus and its adnexæ which from the history elicited can be clearly traced to an abortion." If such be the case, it behooves the physician to look upon abortion in its true light and prevent the unfortunate sequelæ, as far as possible, instead of regarding it as unlucky accident which will keep the woman in bed for a few days and there end.

The treatment naturally resolves itself into that of two periods; before the abortion has become inevitable and after the fetus has been expelled. In the early stages, while the fetus is yet alive, rest and opium in full doses may quiet the contractions of the uterus, stay the hemorrhage and enable the woman to go to term. When the hemorrhage is great, ergot in small doses, either alone or combined with hydrastis, has succeeded. Quinin in 2 grain doses every hour till cinchonism occurs has had a happy effect where a malarial taint was at the bottom of the mischief. But whatever the drug employed, absolute rest must be enjoined and without this all is futile.

In spite of the best endeavors, the contractions often keep up, and it is in this crisis, when the abortion is inevitable and the womb refuses longer to hold its unwelcome tenant, that the woman has the most need of the doctor's care and skill. He may find that the woman has been lucky enough to expel the whole product of conception—fetus, membranes and placenta—at once. Lucky indeed is the aborting woman who has nature for an accoucheur, when nature does all and leaves nothing for the doctor to do. But should this not happen, what is the attendant to do? Two courses lie open to him: He can either trust to nature that the placenta will be expelled before it becomes putrid and infects the woman, or he may take the better course and empty the uterus with his own hands. If he has true regard for his patient as a woman and a human being he will not allow her to run any risks of possible poisoning from a decomposing placenta. The operation is not a difficult one and while many special instruments have been devised for the removal of the placenta, after all the only instrument required is the hand of the operator. The one secret in the operation is that the woman be placed on a hard unyielding surface, such as a table, instead of the bed which, with its soft mattress, allows the buttocks to sink, thereby adding greatly to the difficulty of introducing the fingers within the uterus. Placing the woman in the lithotomy position, one hand is placed above the pubes to steady the uterus and bring it down on two fingers of the other placed inside. Gently the fingers go all over the cavity of the uterus, peeling off the placenta much as an orange is peeled out of its skin. When all is removed the uterus is washed out with an antiseptic and the woman returned to bed. Clean hands will have done the work and the woman should have no fever, no sequelæ of any kind.

There is little doubt that this is the proper treatment for abortion, and yet there are those who still cling to the older let-alone policy, arguing that all will be well and that nature will take care of the patient. In answer to them we say that the placenta in these cases holds the position of a foreign body and should be treated as such. There is little safety in allowing it to come away piecemeal in the course of days or weeks, and the rational treatment is that it should be removed at once. An adherent placenta would hardly be allowed to remain after natural labor, and it is false reasoning to permit it to stay after abortion.

Delay means the danger of septicemia and this danger may be averted by removing the cause by means of a curette with brains—the fingers. But, mark you, let those fingers be strictly, surgically sweet and clean, or fuel is added to the fire, and the doctor instead of a life and health-giver becomes an assassin who stabs the friend who trusted in him.

[1] Dr. Charles H. Bushong, Virginia Medical Journal, December, 1893.

HEALTH OF LARGE CITIES.

A late bulletin, with statistics, issued by the German Imperial Health Department, claims for Berlin the credit of being the healthiest city in the world. The death rate for 1893 is given as only 16.3 per

thousand. Alexandria in Egypt, despite its unvarying fine weather, its 300 fountains and its soft sea breezes, has a death rate of 52.9 per thousand and is, probably, the unhealthiest city in the world. London, with its enormous aggregate of 4,500,000 inhabitants, has a death rate of 20.3 per thousand.

These figures suggest some comparisons with the large cities of the United States. Among these Chicago ranks highest in point of salubrity. In 1893, with a population of 1,520,000, the death rate was 17.8 per thousand, or 1.5 per thousand greater than that of Berlin, with a population of 1,600,000—substantially the present population of Chicago.

Of other large American cities whose bills of mortality for 1893 are at hand, Baltimore ranks next with a population of 455,427 and a death rate of 20.54 per thousand; Brooklyn, population, 983,841, death rate 20.58; Washington, population, 250,000, death rate, 23.98; New York, population, 1,856,695, death rate 24.; Boston, population, 487,397, death rate, 24.02; Philadelphia, population, 1,115,562, death rate, 24.48.

In order of lowest death rates from zymotic diseases—including the tuberculoses—Chicago also ranks first, with a death rate of 6.8 per thousand; and the other cities named, as follows: Boston, 7 per thousand; Baltimore, 7.2; Brooklyn, 7.28; Philadelphia, 7.88; New York, 8.; Washington, 8.04. As to typhoid prevalence, as indicated by death rates, these cities rank in the following order—the rates given being per 10,000: Brooklyn, 1.83; Boston, 3.03; New York, 3.13; Philadelphia, 3.99; Chicago, 4.66; Baltimore, 4.92; Washington, 7.88.

The typhoid death rate is persistently excessive in Washington. During the six-year period ended May 31, 1890, it averaged annually 7.55 per 10,000 of population, and during the census year it rose to 8.62 per 10,000—only less than the proportions assumed in Philadelphia during the Centennial year. The reduction of typhoid in Chicago is marked. Between 1886 and 1889 the proportion of deaths from typhoid fever to deaths from all causes had fallen from 3.5 per cent. to 2.4 per cent.; but in 1890 it suddenly rose to 4.16 per cent., and in 1891 to 7.19 per cent., with the prodigious death rate for the disease of 16.64 per 10,000 of population; there were 385 more deaths from typhoid fever in the city of Chicago during 1891 than in the whole State of New York, with five times the population, and 1,400 more deaths than in London, with three and a half times the population. In 1892 this enormous rate had fallen to 10.4, and during the past year it has been still further reduced to 4.66 per 10,000 of population. Improvements in the manner of obtaining the water supply from Lake Michigan will, no doubt, still further reduce this rate, which is yet much too high.

KINGS COUNTY (N. Y.) LUNATIC ASYLUM.

The Supervisors of this County have adopted measures for placing the insane poor under the care of the State Board of Lunacy, and after that shall have been accomplished they will sell their asylum property to the State. It will probably be necessary to part with this property at the rate of about one-half million of dollars, the cost of which to the County has been about six times that sum. This sale and transfer of the insane will effect two desirable objects; first, the patients will obtain better care, by being separated from the influence of pot-house politicians; second, the County will be benefited to the extent of an annual saving of $200,000 in the tax-levy. The reason for this latter statement is seen in the fact that the Legislature of the State, when passing the "State Care Law," ordained that each and every county that refused to accept the provisions of State Care should be taxed just the same for the care of the insane of the entire State as if they accepted the terms of the law. If the overtures of Kings County, for the transfer of the County charges to the Lunacy Commission are successful, there will then remain only New York County persisting in its separation from State Care. This separation is dictated by political motives and the retention of a large amount of patronage by the Tammany Hall party now in control, rather than by incentives on behalf of the pauper insane. If Tammany Hall shall be driven out of power next fall, as hundreds of thousands of people believe, the State Care Law will undoubtedly be given full sway over the whole of the Empire State.

PRESUMPTIONS AS TO OPINIONS OF EXPERT WITNESSES.

The fact that a person is called as an expert, the Supreme Court of California holds, in Healy v. Visalia & T. R. Co., decided March 14, 1894, assumes that his opinion is based, not merely upon the empirical knowledge which he has gained through his own practice, but also upon that which he has acquired in the study of his profession, and from his intercourse with other members of the same profession. As an expert it is competent for him to give the grounds upon which he bases his opinion, as well as the opinion itself; and the fact that his opinion is based upon information derived from his reading does not make it incompetent for him to so state. It is entirely different for an expert witness, in making his answer to a question as to what are likely to be the results of certain injuries, to give as a reason for his opinion, "because" there are cases on record which have resulted in death, from reading medical or scientific books to the jury, or seeking to influence them by opinions or theories contained in such books. The witness being only asked to give his

own opinion, which he does under the sanction of his oath, it must be assumed to be a conclusion reached by him after a judicious comparison of all that he has read or learned upon the subject; and upon this opinion, as well as its source, he can be subjected to the most rigid cross-examination. Thus, in an English case it was held that medical books themselves can not be read, but that the witness, who was the President of the College of Physicians, could state, not only his judgment, but the grounds of it, which were in some degree founded on books, as a part of his general knowledge.

THE DEATH OF DR. ALBERT DAY.

Dr. Albert Day, for nearly forty years identified with the Washingtonian Home for Inebriates, Boston, as its Superintendent, died recently. He was the pioneer in the establishment of these useful institutions in our country. A scholar, a gentleman, a courteous man of the world, a true philanthropist, he will leave a vacant place very hard to supply. His modesty was in keeping with his great knowledge, and his thorough understanding of the physical conditions and psychic state of the inebriate, never led him into any species of personal advertising. He was content, in his unassuming way, to devote his life and talents to the service of the unfortunate creatures for whose benefit the Washingtonian Home was instituted. He did his work well, and we should not be stinted in praising the character of one who has done so much for suffering humanity, and so much to restore to manhood those who lost it by their own act, perhaps, but yet through defects in original constitution or acquired obliquity. May he sleep well.

LIABILITY FOR UNHEALTHFUL CONDITION OF JAILS.

The Supreme Court of Michigan holds, in the case of Webster v. Hillsdale County, decided March 6, 1894, that counties are not liable in damages for injuries to the health of prisoners in consequence of the unsafe, unsuitable, unwholesome, unventilated and unhealthful condition of their jails. The basis of this non-liability is said to be that counties are involuntarily territorial and political divisions of the State, created for the convenience of the government, and that certain public duties are imposed upon them as a part of the machinery of the State, for the performance of which no liability should attach, any more than it would to the State itself. The Legislature of Michigan, recognizing that cases might arise where prisoners would be injured in health by the unsanitary conditions of jails, enacted that when a jail should become unfit for occupation the judge of the circuit court should designate the jail of some other county for the confinement of prisoners. There would be as much good sense, the Court says, in holding the county liable for the neglect of the circuit judge as to hold it liable for the neglect of its supervisors. The duty in the one case is as imperative as in the other.

PHYSICAL EXAMINATIONS UNDER NEW YORK'S NEW LAW.

The General Term of the New York Court of Common Pleas holds, in Lyon v. Manhattan Railway Company, decided March 9, 1894, that under the new legislative enactment of 1893, an order for a physical examination of the plaintiff in personal injury litigation can not be made except in connection with, or as a part of, an order for the oral examination of the plaintiff before trial. This statute, the court says, leaves the question of ordering a physical examination in actions for personal injuries, to the discretion of the judge, unless the defendant proves "that he is ignorant of the nature and extent of the injuries complained of," in which case the court is bound to grant the order. The reason for connecting the physical examination with the oral examination is to afford the plaintiff, who is examined, as well as the defendant, who has demanded the examination, the benefit of such examination on the trial, and to that end to preserve the record of it. Where a physical examination is had, the questions put to the plaintiff, the answers thereto, and the testimony of the physicians by whom the examination is made, are (so far as required by either party) to be reduced to writing, verified, certified and filed, and may be read by either party.

CORRESPONDENCE.

Relation of the American Medical Association to the State, Interstate, and Railway and National Guard Surgeons Associations.

Kansas City, Mo., May 19, 1894.

To the Editor:—The writer drew up resolutions below given to present to the Tri-State Medical Society, Iowa, Illinois and Missouri, at its Kansas City meeting, April 3 and 4, 1894, and again prepared them for presentation at the meeting of the Medical Society of Missouri at Lebanon, Mo., May 15, 16, and 17, 1894, but it so happened that he was not present when opportunity offered for bringing up such matters, and therefore they were not offered at either time. However, a number of members of these Societies have read them, and urged him to present them, even at a very late hour, at the meetings of these Societies, all expressing the opinion that the measures would be of the very greatest benefit to the Associations interested. As the carrying out of these resolutions involves many very radical changes in Constitutions and By-Laws, they are matters not to be hastily considered. I therefore send them to you to publish, if possible before the San Francisco meeting, as there can be no harm in canvassing the matter.

Resolutions offered for adoption at the thirty-seventh annual meeting of the Medical Association of the State of Missouri, May, 1894.

Preamble:—Whereas, the American Medical Association, and the Journal of the American Medical Associa-

TION, are representative organs of the medical profession of this country, and this Association, and similar State associations are the representative societies of the States and territories; and

WHEREAS, A number of societies, representative of the general profession of two or more States, and other associations, representing large numbers of the profession engaged in special lines of professional work, have been formed throughout the country; and

WHEREAS, The interests of these State societies and associations would be advanced by a more intimate relation with the AMERICAN MEDICAL ASSOCIATION, and their proceedings would, if published in the JOURNAL, reach a much greater number of readers, and the strength and usefulness, and the higher character and efficiency of officers of the American and the State and Inter-State organizations would be reached, if these officers were, in part, chosen in common to the subordinate and national societies. Therefore be it

Resolved, That this Association respectfully petitions the AMERICAN MEDICAL ASSOCIATION to become a local branch of that body, and to have its President, and the Presidents of other societies having received a like recognition, and having a membership of over one hundred members be *ex-officio* Vice-Presidents of the AMERICAN MEDICAL ASSOCIATION, and that all such branches shall annually elect five Vice-Presidents, the first of whom shall be *ex-officio* member of the Executive and Nominating Committees of the AMERICAN MEDICAL ASSOCIATION, with the remaining Vice-Presidents in the order of succession as alternates; the Secretaries of such branch societies be made *ex-officio* associate editors of the JOURNAL. That the proceedings of these subordinate bodies after reference to their own committees on publications, and the editorial staff of the JOURNAL, (as much as is not unsuitable), shall be published in the JOURNAL. The privilege of the membership of the branch society constituting also a membership in the American society, be conditional on the payment of a membership fee, which shall be agreed upon and established by the By-Laws of the two societies; a percentage of which will go to the support of the JOURNAL.

Further resolved. That a copy of these resolutions be transmitted to the AMERICAN MEDICAL ASSOCIATION, the representative State and Territorial medical societies, and the State, and Inter-State societies, and Associations of Railway Surgeons, Military and National Guard Surgeons.

Some of the advantages that it seems to the writer would come from adopting the plan above outlined, would be: First, doubling or trebling the membership of the ASSOCIATION, and the subscribers to the JOURNAL, increasing the dignity and importance of the offices of the subordinate associations, and bringing to the meetings of the AMERICAN MEDICAL ASSOCIATION a larger body of well-qualified men from which to select the President and other officers, to increase the quality of the papers prepared for the meetings of these associations, by making the feeling in those preparing papers that they were addressing the profession of the country through a widely distributed JOURNAL, rather than burying their work in a publication of Transactions seldom read by fifty members of the profession, either members of the society, or outside of the society. It would better provide for weeding out the inferior papers, by having them pass through the hands of the local committee, and then through the hands of the editors of the JOURNAL, by taking the responsibility of rejection away from home.

The Executive Nominating Committee constituted outside of the AMERICAN MEDICAL ASSOCIATION would do away with the so-called medical politics, of which the writer knows nothing excepting hearsay from his fellow-members of the ASSOCIATION, yet he has heard that frequently enough to believe that there must be some fire where there is so much smoke, and judging from the men who have represented his State in the years he has been a member of the ASSOCIATION, he is inclined to think the methods of the politician stand a good chance.

The officers selected in the subordinate societies would be of higher character, from the very fact that a position in the AMERICAN MEDICAL ASSOCIATION was assured by election to certain offices in the home society.

It seems to the writer that the interest in all of these bodies would be increased by this relation, and that there is no reason why the JOURNAL should not have 25,000 or 30,000 subscribers, instead of less than 5,000, if this arrangement was made.

There is nothing new in the suggestion, as it is very much the one in practice by the British Medical Association, the journal of which is said to have 70,000 subscribers.

JOSEPH SHARP, M.D.

ASSOCIATION NEWS.

Executive or Business Committee.—The first meeting of the Business Committee of the ASSOCIATION will be held in Parlor A, Palace Hotel, San Francisco, on Monday, June 4, at 5 o'clock.

A full attendance is requested in order that the Committee may get to work early, and be ready for business referred to it by the ASSOCIATION.

Subsequent daily meetings will be held in the same place, which has been secured for the purpose by the Committee of Arrangements. The time of subsequent meetings will be determined by the Business Committee.

L. DUNCAN BULKLEY, M.D., Secretary.

The Forty-fifth Annual Meeting.—The AMERICAN MEDICAL ASSOCIATION will meet in San Francisco June 5 to 8 inclusive.

The entire work of the ASSOCIATION will be done in Odd Fellows Building, Cor. Market and Seventh Streets.

Exhibition room for instruments, pharmaceutical preparations, etc., is also in this building.

Registration will begin in Marble Hall, Palace Hotel, on Monday, June 4, when all who arrive early enough should register to avoid the rush on Tuesday. Working hours of the Sections will be from 9 to 12 and 2 to 5—except the forenoon of the first day. The General Assembly will convene at 10 o'clock on Tuesday.

The following hotels have quoted special rates for members and their families: Palace, Grand, Lick, Russ, Occidental, California, Baldwin and Pleasanton.

There will be room for all. Visitors desiring to engage rooms in advance can do so by communicating directly with the hotels or with R. A. McLean, 305 Kearny Street, Chairman Committee on Hotels. Headquarters at Palace Hotel where there will be a concert in the Grand Court, Monday evening, June 4.

Tuesday evening a reception will be held at Pioneer Hall; Wednesday evening at Cooper Medical College; Thursday evening at the Mid-winter Fair, and Friday evening at the Hopkins Art Institute. The Ladies' Committee on Reception—Headquarters Palace Hotel—will provide entertainment for visiting ladies during the day.

Saturday will be devoted to an excursion around the Bay, starting at 9 o'clock and returning at 5, passing in view of the Irving Scott Ship-building Yards, Spreckles' Sugar Refinery, United States Military Posts—Alcatraz, Fort Mason, Presidio, Fort Winfield Scott, and out to the "Heads" for a touch of old ocean; returning pass United States Quarantine Station and land at Mare Island where an hour will be spent inspecting the Government Hospital and reconstruction works.

Railroad tickets will be good for return till July 15. Members will therefore have time to make numerous side excursions in the State, after the meeting. On the S. F. & N. P. Railway the rate for such excursions will be a single fare for a round trip.

The Southern Pacific Company's rate will be one and a fifth to one and a third fare for a round trip. Some of our

seaside and mountain resorts, mineral springs and sanitariums will well repay for time spent on a visit. Among them are Santa Cruz, Del Monte, Santa Barbara, Santa Monica and Coronado; peerless Yosemite and her giant sequoia forests, Lake Tahoe and Mount Shasta, Pass Robles, Arrowhead, Gilroy Hot, Byron, Soda, Vichy, Geysers, Harbin, Bartlett, and Highland Springs, all possessing medicinal virtues, and justly popular with our own people. Special inducements are offered at all these places. Pass Robles Hotel offers the best entertainment for members at half regular rates, and Highland Springs, in the Switzerland of America, with its latchstring on the outside, invites members to come and partake of its hospitality, free as the bubbling waters of its Springs.

June will be the height of the season for the Alaska excursion, unequaled by any other trip in the world save that to North Cape. Members who desire to secure accommodations in advance for this trip can do so by applying to the Committee of Arrangements.

Any one desiring to secure space in Exhibition Hall should apply to R. L. Rigdon, Nucleus Building, Chairman Committee on Exhibits.

If members who are getting up excursions will immediately send us approximately the number we may expect from their respective localities it will simplify our work of preparation for reception and entertainment.

We request also, that they will wire us the exact number on departure of their trains.

R. H. Plummer, Chairman.

Section on Diseases of Children.—Address of the Chairman, W. S. Christopher, Chicago.

Tuberculosis Largely Preventable in Children of Rural Districts, W. A. Dixon, Ripley, Ohio.

Some Hints as to the Management of Children Predisposed to Pulmonary Tuberculosis, Jos. W. Stickler, Orange, N. J.

Some Practical Points on the Care of the Newly-born, Henry E. Tuley, Louisville, Ky.

Derangements of the Kidneys in the Lithemia of Children, J. M. G. Carter, Waukegan, Ill.

Continuous Malarial Fever in Children, H. H. Sutton, Aurora, Ind.

A Case of Exophthalmus in an Infant of Three Months, Harriet E. Garrison, Dixon, Ill.

Infantile Spinal Paralysis, Wm. E. Wirt, Cleveland, Ohio.

Chorea, Geo. N. Highley, Conshohocken, Pa.

Differential Diagnosis between Acute Meningitis and Stercoraceous Poisoning, with Report of Twenty Cases, B. A. Waddington, Salem, N. J.

Auto-intoxications, and the Acquired Neurotic Disease in Children, Jas. G. Kiernan, Chicago.

A Unique Case of Epileptiform Convulsions in an Infant, J. A. Hoffheimer, New York.

Epilepsy in Children, Frank P. Norbury, Jacksonville, Ill.

Overfed Infants—Some of the Results—Treatment, J. A. Work, Elkhart, Ind.

Cholera Infantum, H. Illoway, Cincinnati.

The Use of Physostigma in Cholera Infantum, and Cerebro-Spinal Congestions, J. Schneck, Mt. Carmel, Ill.

Some Obscure Bowel Lesions in Childhood, S. J. Radcliffe, Washington, D. C.

Developmental Defects of Childhood in their Practical Bearings, J. Madison Taylor, Philadelphia.

The Use of Methyl Violet in Diphtheria, Wm. P. Munn, Denver, Col.

Treatment of Diphtheria, H. S. Anders, Philadelphia.

Empyema in Children, Robert Carothers, Newport, Ky.

The Diagnosis of Pneumonia in Children, Edward H. Small, Pittsburg, Pa.

Treatment of Pneumonic Fever in Children, Edward F. Wells, Chicago.

Scarlatina and Streptococcic Infections, Rosa Engelmann, Chicago.

Osteo-plastic Manipulations by an adjunct in the Effective Surgical Treatment of Hare-lip, T. W. Manley, New York.

Malformations of the Rectum in New-born Children, J. C. Oliver, Cincinnati, Ohio.

Some Remarks on Eczema of Children, W. M. Holton, New Harmony, Ind.

A Paper, C. A. Brandt, Savannah, Ga.

SOCIETY NEWS.

American Orthopedic Association.—Program of the eighth annual meeting, to be held at Washington, D. C., May 29, 30, 31 and June 1, inclusive.

The sessions will be held in the Preparatory Department, Columbian University, H. near 14th Street. The annual dinner will be omitted, and instead a breakfast will be given by the outgoing President at 2 P.M. on Wednesday at the Shoreham, to members of the Association. This will give the members an opportunity to attend the dinner of the General Congress on Wednesday evening, to which they are all invited. The President's address will be delivered on Wednesday after the Executive Session, on: Orthopedic Surgery, of the Past and Future, and the Influence of Surgical Bacteriology and Modern Pathology upon the Subject.

Officers for 1894: President, Dr. A. M. Phelps, New York; First Vice-President, Dr. Augustus Wilson, Philadelphia; Second Vice-President, Dr. Harry M. Sherman, San Francisco; Secretary, Dr. John Ridlon, Chicago; Treasurer, Dr. E. G. Brackett, Boston.

Member of the Committee on Arrangements for the Congress of American Physicians and Surgeons: Dr. DeForest Willard, Philadelphia.

Committee on Membership: Dr. L. A. Weigel, Dr. A. J. Gillett, Dr. Ansel G. Cook, Dr. J. D. Griffith, Dr. John C. Schapps.

Publication Committee: Dr. E. H. Bradford, Dr. J. E. Goldthwait, Dr. Samuel Ketch.

Member of Executive Committee, Congress of Physicians and Surgeons: Dr. Newton M. Shaffer; *Alternate*, Dr. Ap Morgan Vance.

The Treatment of Severe Forms of Club-foot, Dr. Edmon Owen, London.

Tarso-Clasis for Club-foot, Mr. Nicholas Grattan, Cork.

The Abuse of Phelps' Operation for Club-foot, Dr. James E. Moore, Minneapolis.

Phelps' Method for Talipes Varo-Equinus, Dr. H. P. Kaptyn, Abcande, Holland.

Phelps' Method for the Cure of Club-foot in Adults, Dr. Wm. E. Wirt, Cleveland, Ohio.

Phelps' Method of Treating Severe forms of Club-foot, Dr. Cordua, Hamburg, Germany.

The Place of Traction in the Treatment of Club-foot, Dr. Newton M. Shaffer, New York.

Elastic Traction in the Immediate Treatment of Club-foot, Dr. Bernard Bartow, Buffalo.

Some Observations on the Anterior Transverse Arch of the Foot and its Obliteration as a Cause of Metatarsalgia, Dr. Joel E. Goldthwait, Boston.

Final Results in 100 Cases for Operation of Deformities, following Hip-Joint Disease, Dr. V. P. Gibney, New York.

The Treatment of Hip Disease and the Application of Lateral Traction, Robert W. Lovett, Boston.

a, the Question of Priority in the Application of Lateral Traction to Relieve Intra-Articular Pressure in Hip-Joint Disease; *b*, the Presentation of New Knee and Ankle Splints; *c*, the New Improved Celluloid Corset; *d*, an Original Operation for Wry-Neck, Dr. A. M. Phelps, New York.

Blanchard's Hip Splint, Dr. Wallace Blanchard, Chicago.

What Results should We try to Attain in the Treatment of Hip-Joint Disease, Dr. Reginald Sayre, New York.

Cases of Hoffa's Operation for Congenital Dislocation of the Hip-Joint, Dr. E. H. Bradford, Boston.

Lorenz's Operation for Congenital Dislocation of the Hip, Dr. A. Lorenz, Vienna.

Congenital Dislocation of the Hip, Dr. T. Halsted Myers, New York.

a, the Results in Talipes Varo-Equinus after Phelps' Operation; *b*, the Limits of Operative Treatment in Congenital Dislocation of the Hip, Dr. Sigfred Levy, Copenhagen.

Congenital Dislocation of the Hip, Dr. L. A. Weigel, Rochester.

Peculiar Nervous Symptoms occurring in Pott's Disease of the Spine, Dr. Leroy W. Hubbard, New York.

Relief of the Spondylitic Spine from the Concussion of Walking, Dr. John C. Schapps, Brooklyn.

Spondylitis, Dr. A. J. Steele, St. Louis.

The Treatment of Old Neglected Cases of Deformity following Polio-Myelitis, Dr. S. L. McCurdy, Dennison.

Observations on Rachitic Distortions of the Neck of the Femur in Adolescence and its Significance, Dr. Royal Whitman, New York.

Infantile Apoplexy and Paralysis, and some of their Consequences, Mr. W. J. Little, England.

The Etiology of Deformities in Knee-Joint Disease, Dr. A. E. Hoadley, Chicago.

The Care of the Bony Frame in Infancy and Childhood, Dr. J. B. Ransom, Dannemora, N. Y.

Diseases of the Knee-Joint, Dr. J. D. Griffith, Kansas City.

Excision of the Knee for Relief of Crippling from Infantile Paralysis, Dr. Ap. Morgan Vance, Louisville.

The Treatment of Lateral Rotary Curvature of the Spine by Non-Restorative and Developmental Methods, Dr. B. E. McKenzie, Toronto.

The Improved Machine for Treating Scoliosis, Dr. Max Schede, Hamburg.

Scoliosis, Dr. A. B. Hosmer, Chicago.

Excision of the Sac in Spina Bifida, Dr. DeForest Willard, Philadelphia.

On the Application of the Principle of Extension in the Treatment of Wry-Neck, Messrs. Wm. Adams, F. R. C. S., and R. W. de Sante, F. R. C. S., London.

Lorenz Osteoclast, Dr. F. S. Coolridge, Chicago.

A Case of Ankylosis of the Jaw in a Child; Resection, Recovery, with Good Motion. Dr. Dillon Brown, New York.

Excision of the Wrist-Joint by a New Method, Dr. Herman Myner, Buffalo.

Disease of the Shoulder-Joint, Dr. W. R. Townsend, New York.

Titles to be announced, Drs. W. J. Taylor, Philadelphia, and W. O. Plimpton, New York.

Fixation and Traction in the Treatment of Fractures into Joints, Dr. Ansel G. Cook, Hartford.

Title to be Announced. Dr. James Kerr, Washington, D. C.

First Discussion, first day: Flat Foot. *a*, Its Etiology and Mechanism of its Production, Dr. Newton M. Shaffer, New York; *b*, Pathology, Prognosis and Mechanical and Surgical Treatment, Dr. T. C. Morton, Philadelphia; *c*, Gymnastic Treatment, Dr. H. Augustus Wilson.

Drs. Royal Whitman, New York, Sidney Roberts, Philadelphia; J. D. Griffith, Kansas City, Roswell Park, and others will take part in the discussion.

Second Discussion, second day: Rachitic Deformities. *a*, Etiology, Clinical History and Lesions, Dr. A. Jacobi, New York; *b*, Its Various Manifestations, Diagnosis, Differential Diagnosis and Prognosis, Dr. Benj. Lee, Philadelphia; *c*, Mechanical and Constitutional Treatment, Dr. Samuel Ketch, New York; *d*, Operative Treatment, Dr. DeForest Willard, Philadelphia.

Third Discussion, third day: Paralytic Deformities. *a*, Etiology, Clinical History, and Pathological Conditions producing them, Dr. E. H. Bradford, Boston; *b*, Varieties, Diagnosis, Differential Diagnosis and Prognosis, Dr. E. G. Brackett, Boston; *c*, Mechanical Treatment, Drs. John Ridlon, Chicago, and Joel Goldthwait, Boston; *d*, Operative Treatment, Paralytic and Rachitic Deformities, Dr. DeForest Willard, Philadelphia.

The Red Cross.—The following report of the Committee of the Association of Military Surgeons of the United States on the proposed Act of Congress for the protection of the insignia and name of the Red Cross, was unanimously adopted and has been transmitted to the President of the Senate by the President of the Association, Surgeon-General George M. Sternberg, U. S. Army:

WHEREAS, In the International Convention at Geneva, Switzerland, Aug. 22, 1864, twelve nations of the world met and formulated Articles of Treaty, for the purpose of mitigating the evils inseparable from war; of suppressing the needless severity, and particularly providing that persons employed in hospitals, and affording relief to the sick and wounded, and supplies for this purpose, shall be deemed neutral and entitled to protection; and that a distinctive and uniform flag shall be adopted for hospitals and ambulances, and convoys of sick and wounded, and an arm badge for individuals neutralized; and

WHEREAS, Said treaty has been ratified by every civilized nation of the world with one or two exceptions of minor importance; and

WHEREAS, The flag adopted was the distinctive sign of the Red Cross alone, under which insignia or sign, the purposes of the treaty shall be carried into effect, the same being a red Greek cross on a white ground, and which shall constitute the military hospital flag of all the nations within the treaty and designate all persons serving under it; and the same is adopted and used throughout the world; and

WHEREAS, The United States gave its adhesion by Act of Congress, March 1, 1882, which was ratified by the International Congress of Berne, June 9, 1882, and proclaimed by President Arthur, July 26, 1882, thus adopting by solemn compact and treaty this universal and only military hospital flag; and as the insignia is prescribed in the United States Army Regulations, they are a part of the equipment of regular armies and militia and are incorporated in the rules of the government and regulations of the land forces; and

WHEREAS, The unauthorized use of said insignia in all countries within the treaty, becoming a source of embarrassment and serious injury causing perplexing complications to arise, all of the nations under said treaty have taken vigorous action against this evil, and have passed stringent laws with heavy penalties for the protection of this special insignia; and

WHEREAS, The same great evil exists to-day in this country—the merchant prince, the manufacturing chemist, the speculator and huckster alike, seizing upon and adopting for purposes of trade and barter, this greatest of humanitarian emblems, made sacred by solemn compact and the wisest of counsel; and

WHEREAS, The fact becoming known that this country has no laws for the protection of the Red Cross, the whiskies, drugs, pills and nostrums of the world, bearing the Red Cross on their labels, are being imported; thus the laws for the protection of the sign in other countries, are working us positive and fatal injury and, unless this wrong shall be righted and this Congress protect the interests of the Government, the Red Cross will be brought into such contempt that its value as a relief sign will be gone and its usefulness utterly destroyed; and

WHEREAS, The American National Red Cross—the United States branch of the International Red Cross—has, through its honored President, Miss Clara Barton, been endeavoring for five years to secure by Act of Congress, at least a measure of the protection which is accorded this emblem in other countries; and

WHEREAS, A Bill "to protect the insignia and the name of the Red Cross" was introduced in the House of Representatives this session and, on March 23, passed unanimously without alteration or amendment, referred to the Senate, read twice and referred to the Committee on Foreign Relations; and, therefore, be it

Resolved, That we, the Association of Military Surgeons of the United States, in Congress assembled, do earnestly recommend the Bill now before the Committee on Foreign Relations for the protection of the insignia and name of the Red Cross, and urge its immediate passage.

Respectfully submitted,

ALBERT L. GIHON,
Medical Director U. S. Navy, Chairman.
LEONARD B. ALMY,
Lieut.-Col. and Medical Director Ct. N. G.
CHARLES SMART,
Major and Surgeon U. S. Army.

NECROLOGY.

MARTIN LUTHER, M.D., of Reading, Pa., died on February 23.

EDWARD F. DRAYTON, M.D., of Brooklyn, N. Y., died Saturday, May 5, in the sixty-sixth year of his age. He was a naval surgeon during the late war. After the war he settled in Brooklyn and interested himself in certain matters of public improvement, especially in street transit. He was for a time the president of one of the important companies. His death was due to lobar pneumonia.

DAVID CRARY, M.D., probably the senior medical man of Connecticut, died April 16, at Hartford, from senile asthenia. He was born in Wellingford, Vt., April 18, 1806, and had practiced medicine there and in Hartford since 1838. He had assisted at the birth of more than three thousand children. He was a member of the Hartford County Medical Society and the Connecticut Medical Society and was a noted fox hunter. He has been twice married and leaves three children. Dr. David Crary, Jr., and Edwin Crary, of Hartford, and Frank Crary, of Wisconsin.

PUBLIC HEALTH.

Physical Education.—At a recent meeting in Exeter Hall, London, Eng., the appointment of a Minister of Physical Education was suggested and seriously discussed. One of the speakers, the Marquis of Caermarthen, M.P., said that gymnasiums should receive substantial aid from the government, "the proper physical culture of the people being a matter of greatest national importance."

Compulsory Vaccination in Public Schools.—The U. S. Commissioner of Education, the Hon. W. T. Harris, in a recent interview, expresses himself as "opposed to the compulsory vaccination of public school pupils." He adds: "However, I believe that children should be refused admission to the schools when it is found that they lack evidence of having been vaccinated." It would be interesting to learn the Commissioner's definition of "compulsory vaccination." He would not compel a public school pupil to be vaccinated; but—if it didn't show evidence of having been vaccinated he would compel it to cease to be a public school pupil.

Sanitation of Mexico.—For centuries the City of Mexico has suffered from the pestilential exhalations of the bed of the lake which is the site of the city, and its growth has thereby been seriously retarded. The great sewer, intended to drain this area is now completed at a cost of nearly $10,000,000, and is pronounced as important a work in modern engineering as the Manchester ship canal; while, as a sanitary undertaking, it is expected to benefit the Mexican capital to a greater extent even than the English city will be benefited commercially by her enterprise.

Yellow Fever.—The attention of the Treasury Department having been called to the fears of a possible recurrence of yellow fever at Brunswick, Ga., Acting Secretary Curtis has requested the Department of State to instruct United States consuls stationed in the Atlantic seaports of South America, Central America, Mexico and in all the West Indian ports, particularly those of Cuba, to notify masters of vessels leaving such ports for any port in the United States between the southern boundary of Virginia and the western extremity of the Mississippi coast, that "if yellow fever or if fever suspected of being yellow fever, appears on board any such vessel during the voyage; or if the master has reason to believe during the voyage that the vessel is infected with yellow fever, said vessel, en route to her port of destination, should repair to the United States quarantine station at Dry Tortugas, Fla., or if more convenient, to the United States quarantine station at Blackbeard Island, Sapelo Sound, Ga., for inspection or treatment."

Smallpox.—With the gradual subsidence of the smallpox epidemic, reports become more and more meager and incomplete. The following is a summary of those received during the past week:

Dr. Benjamin Lee, Secretary Pennsylvania State Board of Health, reports May 17, since April 11, a total of 61 cases at 17 different points, to-wit: Philadelphia 5 (2 traced to Danville or neighborhood), Harrisburg 2, Danville 6, Lee 16 (origin Danville), Shickshinny 7, (origin Danville), Muncy 1, Jerseytown 1 (origin Danville), Reading 4, Lewisburg 1, Blandon 4, Walnuttown 1, Lidel's 1, Hyde Park 2, West Hempfield 1, Derry Township 3, Lewistown 3 (origin Danville), Dorrancetown 1 (origin Danville). Dr. Lee also reports 3 cases of typhus, isolated in the Municipal Hospital, Philadelphia, "probably imported via New York."

Dr. J. W. Scott, Secretary Illinois State Board of Health, reports, May 22, for the State outside of Chicago, only three infected points remaining, to-wit: Havana 1, Evanston 2, Aurora 1; origin in all cases, Chicago. In Chicago there has been a notable decrease since May 18, the daily reported cases since last summary being as follows: May 15, 37 cases; May 16, 28; May 17, 33; May 18, 14; May 19, 8; May 20, 6; May 21, 5. Total cases from January 1 to May 21, 1,690. The energetic enforcement of the measures detailed in the last smallpox summary would seem to have got the outbreak under control for the present season; and there is ground to hope for an avoidance of any recurrence next fall in the wholesale vaccination still being vigorously carried on. Between May 1 and 21 inclusive, the Health Department used 304,900 vaccine points, and this is exclusive of the vaccinations by private physicians.

Dr. C. N. Metcalf, Secretary Indiana State Board of Health reports cases in Fulton, Marshall, Pulaski and Wayne Counties. He also reports that there had been 31 cases with 10 deaths in Fulton County; that the greatest negligence had characterized the treatment of the outbreak and that the local health officer had been removed for incompetency. All State benevolent and penal institutions have been closed to visitors by order of the State Board of Health; neither patients, visitors or other persons are admitted without a permit from the Board.

No new cases reported in Minnesota—the last having been two cases at Duluth, announced May 8.

Dr. M. O'Brien, Secretary Kansas State Board of Health, reports, May 22, 30 cases in Atchison.

Dr. J. T. Reeve, Secretary Wisconsin State Board of Health reports, May 19, a case at Wausau and one at Milwaukee, "both traceable to Chicago."

Suppression of Tuberculosis.—The crusade against consumption is growing. The Massachusetts State Board of Health, in a recent exhaustive circular, recommends local boards of health to distribute widely a notice, in substance as follows:

"Consumption is the most destructive disease of New England, the number of persons dying annually from this cause in Massachusetts amounting to nearly six thousand.

"The disease is infectious and can be communicated from one person to another. The chief danger consists in the expectoration of the sick; if the expectorations be carefully destroyed little danger need be feared.

"Consumptives should be instructed not to spit upon the floors of rooms, public halls, street and railway cars and other vehicles, nor in the streets; but into pieces of cloth or receptacles made for the purpose containing water or a saturated solution of carbolic acid. Such bits of cloth should be destroyed by fire before the sputa becomes dry; and other receptacles should be cleansed with scalding water—their contents having been destroyed or otherwise carefully disposed of. Handkerchiefs, which may have been used from necessity, should be boiled half an hour before being washed.

"A healthy person should not sleep in the same room with a consumptive.

"Remember that sputa must never be allowed to become dry."

The Committee on Tuberculosis of the District Medical Association of Washington, D. C., in its report, submitted at the meeting of May 16, shows that in the District of Columbia from 1883 to 1892 8,091 persons died from tuberculosis, the percentage of deaths from that disease to all deaths being 15.87 during the ten years. In Philadelphia there were 76,272 deaths from this disease from July, 1860, to April, 1892. In New York the autopsies in hospitals show that 60 per cent. of the patients were affected with the disease, though they did not die of it, and it is estimated that one death in seven throughout the whole world is due to tuberculosis. The committee recommends:

"1. That a committee be appointed to prepare the manuscript for circulars or pamphlets, with the view of having the same distributed among the people, setting forth the facts, that each person having consumption is a constant source of danger to others not thus afflicted; that the disease is curable, and, above all, that it is easily preventable.

"2. That hospital authorities be urged to set apart certain

wards for the exclusive use of consumptives; although the committee believes that special hospitals for this purpose are preferable.

"3. That physicians be especially requested to inform their consumptive patients of the necessity of thorough disinfection of the sputa and of the methods by which this can be accomplished; and further, that they insist that the rooms once occupied by consumptives be thoroughly disinfected before they are again inhabited.

"4. That the Society take such action as will best procure the enactment of a law whereby no milk can be offered for sale until the cows from which said milk was taken have been tested and found to be free from tuberculosis. Furthermore, it is recommended that the health officer of the District of Columbia shall be requested to formulate such regulations as will insure to all persons purchasing vaccine virus in this District a guaranty that the animals whence such material has been obtained were treated with tuberculin and proved free from tuberculosis."

Epidemic Smallpox in Large Cities.—At the recent Conference on the smallpox situation, the following measures were recommended for adoption in dealing with an epidemic outbreak of smallpox in a large city:

1. The city should be divided into districts containing not more than 10,000 people.

2. Each district should be placed under the supervision of a competent medical inspector with necessary assistants: *a*, to make a house-to-house inspection; *b*, to successfully vaccinate, within the shortest possible time, all persons who have not been vaccinated during the outbreak—the first vaccination to be completed within seven days; *c*, to properly disinfect all houses and their contents where smallpox occurs.

3. Necessary means and appliances for efficient disinfection of materials, premises, etc., should be provided as the exigencies of each district may require.

4. Each case of smallpox should be immediately removed to a suitably constructed and properly equipped and officered isolation hospital.

5. Except in extreme cold weather, hospital tents, as prescribed in the United States Army Regulations, floored and warmed, are preferable to the average hospital or private dwelling, and increase the chances of recovery of the patients. Cases of smallpox necessarily retained in their own homes should, with their attendants, be rigidly isolated during the period of danger, and physicians visiting such patients professionally should be subject to such regulations as may be prescribed by the local health officer.

6. Persons exposed to smallpox contagion should be immediately vaccinated and kept under observation for not less than fourteen days from time of last exposure.

7. It is the sense of this Conference that unless such measures are enforced, it will be necessary for neighboring cities and States to exclude all persons from such city who are not protected against smallpox by recent vaccination, and to require proper disinfection of all clothing, baggage and merchandise capable of conveying smallpox infection.

Signed by JOHN B. HAMILTON,
Surgeon U. S. Marine-Hospital Service.
ARTHUR R. REYNOLDS,
Health Commissioner of Chicago.
C. N. METCALF,
Secretary Indiana State Board of Health.
D. C. RAMSEY, and
L. L. WHITESIDE,
Members Indiana State Board of Health.
J. T. REEVE,
Secretary Wisconsin State Board of Health.
HENRY B. BAKER,
Secretary Michigan State Board of Health.
F. W. REILLY,
Ex-Secretary Illinois State Board of Health.
J. W. SCOTT,
Secretary Illinois State Board of Health, and Chairman of the Conference.
C. O. PROBST,
Secretary Ohio State Board of Health, and Secretary of the Conference.

MISCELLANY.

No Code Instructions.—The Illinois Medical Society, at its last annual meeting appointed its delegates to the AMERICAN MEDICAL ASSOCIATION without instructions on the Code revision.

Charity Hospital for Consumptives.—A number of wealthy New York women have purchased a large tract of land at the foot of the Saranac Mountains near Liberty, N. Y., and intend to erect thereon a charity hospital for consumptives.

Deep Artesian Well in Lower New York.—An artesian well, 1,056 feet deep, was completed last week at the home office of the Manhattan Life Insurance Company, on New Street, New York City. The water that will thus be obtained will be used for sanitary purposes and for the elevators.

Dr. Balch's Successor.—Dr. J. F. Barnes, of Watson, N. Y., has been elected Secretary of the New York State Board of Health, to succeed Dr. Balch, whose resignation has been accepted, to take effect June 1, prox. Dr. Florence O'Donohue was reëlected President for the ensuing term.

A New Disease.—"Mary," said a lady to her colored servant; "you said you lived with a man and his wife and one of them died?"

"Yes, mum; Dr. Blank said she had 'intejection' so long before he saw her that he could not cure her."

A Nobly Generous Doctor.—The *Congregationalist* states that Dr. W. Pepper, LL.D., after thirteen years' service has resigned as Provost of the University of Pennsylvania. A check for $50,000 accompanied the letter. It states also that he has during each year of service given from between $20,000 to $30,000! Such beneficence deserves the highest approval.

New York Post-Graduate Hospital.—On May 8 the new buildings belonging to this school, at the corner of Twentieth Street and Second Avenue, were thrown open to the profession and the public. The babies' ward is the first to be occupied and is regarded as a model apartment for invalid infants. One of the new features of this ward is an ingeniously devised *couveuse*, or incubator for prematurely born and asthenic infants. This *couveuse* has an unfailing supply of fresh air drawn into its interior through a filter of antiseptic cotton, and a weighing attachment or balance whereby the weight of its inmate can be ascertained at any time; also, an improved means of effecting the uniform radiation of heat for the benefit of the child. The other wards or rooms are to be completed for occupancy during the present month.

Summer College of Biology.—The third annual session of the Cold Spring, New York, Biological Laboratory will open July 5. Lectures will begin on the following day. The regular courses of instruction include comparative embryology, bacteriology, advanced botany, elementary zoölogy and elementary botany. In addition will be given a series of fifteen illustrated lectures on popular scientific subjects. For young folks who have a liking for out-door study and natural history, the opportunities for a rational use of vacation time are scarcely to be surpassed anywhere in the wide country. Cold Spring Harbor is thirty-two miles from Brooklyn and New York on the Long Island Railroad. The Laboratory is at the head of the harbor and on the north shore of Long Island. The Laboratory fee for five weeks is $15; for eight weeks, $24; rooms cost from $1.50 to $3 per week and board about $4.50 per week.

Washington Notes.

Central Dispensary and Emergency Hospital.—The election of officers of the Board of Directors of the Central Dispensary and Emergency Hospital on May 11, resulted in the selection of Mr. C. J. Bell for President; Mr. Henry F. Blount, Vice-President; Mr. Wm. B. Gurley, Treasurer, and Mr. H. Randall Webb, Secretary.

Dr. Leonard Bell, of Indianapolis, Ind., who for the past year has been Second Assistant, was elected to fill the office of Resident Physician.

Assistant Resident Physicians.—A competitive examination for First and Second Assistant Resident Physician, will be held on the 25th instant. This is open to any graduate of any regular medical college in this country.

A Colored Man with confluent smallpox arrived in this city on the 12th instant, via railroad, and was promptly taken to the pest house. Dr. J. R. Nevit has charge of that institution and this case, and reports the patient to be in a dangerous condition. Previous to going to the hospital the patient was in close association with a number of persons on the train and in the depot. It is hoped that the powers that be will exhibit more discretion in dealing with this dreaded disease than they did in the health affairs of the Coxey camp.

Medical Department Georgetown University.—The graduating exercises of the Medical Department Georgetown University were held May 8, and twenty students received their diplomas. Professor William H. Hawkes A.M., M.D., delivered the annual address to the graduates, advising them that their profession is also a business and urged them to place a proper estimate upon their medical services, and to use every honorable business means for the enforcement of their just claims.

The Article in the Journal of May 5, referring to the bad sanitary condition of the Coxey camp had a decided influence on the lay press and health authorities here. Of the former, the Washington *Post* was the first to urge the abating of the nuisance. Notwithstanding the daily accounts of the bad conditions existing, the local authorities did not declare the camp "unsanitary and a menace to the public health" until May 9. Three days later (the 12th) the army left the city, camping in Bladensburg, Md., where they have again selected an unhealthy location. It would appear to be decidedly prejudicial to public health for large numbers of men under the conditions found in this army to travel about, from more or less infected districts, and finally locate in unhealthy portions of any large city.

Philadelphia Notes.

The Medico-Chirurgical College graduated a class of forty-four on the 11th inst.

The State Medical Society held its annual meeting in this city from the 15th to the 18th inst. The sessions were well attended.

The Jefferson Medical College Commencement was held on the 9th inst., when 163 students were graduated. The Trustees conferred the honorary degree of Doctor of Laws upon Prof. William Goodell, M.D.

The Wistar Institute of Anatomy and Biology of the University of Pennsylvania was formally opened on May 21 in the afternoon. An introductory address was made by Prof. William Pepper, M.D., President of the Board of Managers, followed by addresses by Prof. William Osler, M.D., of Johns Hopkins, and Prof. Harrison Allen, M.D., Director of the Institute. An elaborate program has been prepared by the Alumni Committee which has in charge the exercises for Commencement Week, in which some radical changes have been introduced in the usual routine, which will make the exercises more in accord with those of other American universities. The Baccalaureate Sermon, as the opening event of the week, will take place on Sunday evening, June 3, and will be delivered to the graduates of all departments. Monday, June 4, has been set aside as Class Day, the exercises taking place at the Chestnut Street Opera House, at 11 A.M., after which there will be a ball game, at 3 P.M., and the ivy planting on the campus at 5. In the evening the Law School will hald a banquet in the Library Building, and the Zelosophic Society will hold its annual commencement in College Hall. For Tuesday, Commencement Day, an elaborate program has been arranged. The usual exercises are to be preceded by a procession from the University grounds to the Academy of Music. The procession will be headed by Governor Pattison and his staff, Mayor Stuart and cabinet, and the City Troop, followed by the University Faculty, Trustees and students in cap and gown. The afternoon is taken up with the open track games of the Athletic Association, with several important events, and the evening by a banquet of the Alumni of the College department in the Library Building and the Philomathean Society commencement in College Hall. Wednesday has been designated as Alumni Day; Franklin's statute will be unveiled at 11 A.M., and Russell Duane, a great-grandson of Franklin, will make the address. At noon Horace Howard Furnace will make the formal transfer of a fine bust of Provost Pepper to the University. A ball game will be the attraction in the afternoon, and in the evening the Mask and Wig Club will give a benefit performance of "King Arthur," and the Veterinary department will hold a banquet. On Thursday morning the Medical School will hold its commencement exercises at the Academy of Music. The Phi Betta Kappa exercises will take place in the afternoon, the address being delivered by Hampton L. Carson. A promenade concert on the College campus is being talked of for the evening. The Sophomore Cremation has not yet been assigned a place, and it will probably have to take place on Friday evening.

Medical College Notes.

Another Missouri College.—The Central Medical College of St. Joseph, Mo., has been organized to replace the Northwestern Medical College of that city—suspended because of the refusal of the Missouri State Board of Health to recognize its diplomas.

"Mushroom" Colleges.—Moved thereto by the apprehension that the degree of M.D. "is in danger of being greatly reduced by the organization of mushroom colleges in various parts of the State as well as in other States," the State Board of Medical Examiners of Iowa adopted the following resolution at its recent meeting:

"*Resolved*, That no medical college shall be recognized by this Board as in good standing until it has maintained a reputable existence for five years, provided this regulation shall not apply to colleges already so recognized."

A similar resolution of the Illinois Board, adopted in July, 1892, was rescinded at its January, 1894, meeting.

Rush Medical College.—At the Class Day exercises of Rush Medical College, Chicago, portraits of Prof. DeLaskie Miller, and of Prof. Ephraim Ingals were presented to the College. Prof. Henry M. Lyman accepted the portrait of Prof. Ingals, on behalf of the Faculty, and Prof. John B. Hamilton accepted that of Prof. Miller. Dr. Hamilton said:

We accept from the original himself, at your hands, this faithful representation of an ideal teacher, an accomplished obstetrician, a scholar, a sagacious counselor and a patriotic citizen. Prof. DeLaskie Miller has been identified with Rush Medical College almost from its beginning, and although still vigorous in mind and body, he has been actively associated with every movement which step by step has

placed this College in the advance rank of American educational institutions. His early career as a medical journalist, and his Presidency of the Section on Obstetrics of the International Medical Congress at Washington extended a knowledge of his worth and ability beyond the confines of his city to other lands; for at the close of that now historic Congress, he had acquired friends and admirers almost to the ends of the earth. I need scarcely speak in this presence, of his long and faithful service as a Professor in this College; hundreds of Alumni have heard his voice, and thanks to the instruction those Alumni received, thousands of American citizens that otherwise might have blighted as mere experimental suggestions, were born to the glory of God and the increase of the population of the Republic. We need not enlarge on this topic; we need only say that in the presentation of this picture, the generous donor has added another jewel to the Rush Medical College collection. We read in Northern mythology of the Walhalla, that the building itself whose dome was so high that its summit could scarcely be seen, was as marvelous as the heroes whose virtues it was built to commemorate; that its location was in the midst of the grove "Mansur," where all the trees bore leaves of gold. In time this will become our Walhalla, although we lay no stress on architectural display as did those who designed that famous structure. In years to come Alumni visiting Rush Memorial Hall of the future may truthfully say of this picture, as of the "animated bust" and "storied urn" of song:

> "Bright Fancy, hovering o'er,
> Scatters from her pictured urn
> Thoughts that breathe, and words that burn."

An Adult Insane Native Killed by Driver Ants in Africa.—Dr. Robert Hamill Nassau, a medical missionary stationed at Gaboon, Africa, narrates the following incident of native life in a letter recently addressed to Dr. Thomas G. Morton, of Philadelphia, who has kindly placed it at our disposal. The following extracts may interest the readers of the JOURNAL, as they solve the question whether or not human life could be destroyed by ants, as Eugene Sue described in his "Chronicles of a Family."

After mentioning the killing of two pet gorillas by the ants, and stating that human lives have also been lost in this way, Dr. Nassau explains that this occurs only when the person or animal is tied or confined so as to be unable to escape, because "the ants do not pursue but only attack what happens to lie in their way, and they conquer by their immense number and their persistence." The case he graphically describes as follows:

"An instance occurred here some six months ago. There was a crazy man who for several years had been a nuisance in the community. He had formerly been rich, but loss of his property, *i. e.*, his wives, his goods, etc., had turned his head. He belonged properly across the Gaboon estuary, but he had wandered over on this side. Most of the time he was harmless except that he annoyed women by offers of marriage. . . . Mostly, his nuisances were entering people's houses uninvited, sitting down to eat with them and appropriating pieces of clothing, etc. He was always worse at the new and full moons; then he was really dangerous. If at all crossed in his wishes he would beat the offenders with his staff or flourish his knife, and smash plates or other furniture. People did not dare defend themselves; they dreaded his threats of revenge, or were patient, not regarding him as responsible, or awed by superstitious fears of the spirits by whom some supposed him possessed. They often complained to the French magistrate asking that he might be confined; but the government here has no place in which to confine such and treated the matter lightly, bidding the complainants to endure, that he was irresponsible, etc.

"Finally, some six months ago, complaints became so numerous that the magistrate ordered his relatives across the estuary to come and remove him. They accordingly came and with the aid of the police he was bound, placed in a canoe, and taken across the estuary.

"Until they could decide among themselves just where he should stay and who should assume the burden of the care of him, they left him bound that night in a hut. He had been protesting, shouting, and swearing; but his complaints were not heeded; even when his words were not incoherent, they were not regarded as true, (and it is currently believed that the relatives did not care to believe or understand even when they did hear, for they must have heard enough to know what was going on in the hut).

"Lying there bound in the hut and alone, a wandering army of "drivers" came across him, and attacked him. (Those ants *never* let go of a victim). He was helpless; his screams and calls were unresponded to. Those hundreds of thousands of ants filled his eyes, mouth, ears, and every opening of his body; and fiercely bit at every square inch of his entire naked body. What torture! If one were sane, those hours of agony would drive one mad!

"In the morning he was dead. The statement of the relatives that they had not supposed that the cries they heard were other than his usual mad ravings, was accepted by the government, though, by the public, quietly disbelieved. Neither the relatives nor the public were very sorry, even for the tragedy that relieved the latter of a constant dread and the former of a prospective burden."

[The Rev. Dr. H. C. McCook of Philadelphia, who has given such an interesting account of "The Ants of the Garden of the Gods" and is particularly devoted to the study of their habits, upon reading the above letter of Dr. Nassau's, wrote to Dr. Morton that the "incident of the killing of a native by the driver ants, was certainly an interesting one, though horribly realistic in its description," and requested that it be put upon record, as "an authentic case of the power and disposition of those insects to destroy human life."]

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from May 12, 1894, to May 18, 1894.

Major VAN BUREN HUBBARD, Surgeon, is granted leave of absence for four months, on surgeon's certificate of disability.

Capt. ALONZO R. CHAPIN, Asst. Surgeon, is granted leave of absence for three months, on account of disability, with permission to leave the Department of Texas.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending May 19, 1894.

Surgeon JOHN W. ROSS, placed on the retired list, May 11, 1894.

LETTERS RECEIVED.

(A) American Druggist Publishing Co., New York, N. Y.
(B) Bryan, J. D., Ottawa, Kansas; Bergen, S. C., Philadelphia, Pa.; Bassett, M. F., Quincy, Ill.; Bulkley, L. Duncan, New York, N. Y.
(C) Christopher, W. S., Chicago, Ill.; Cochran, Jerome, Montgomery, Ala.; Chesman, Nelson & Co., St. Louis, Mo.
(E) Ellis, T. B., Bethany, Mo.
(F) Ferguson, E. D., Troy, N.Y.; Frew, W.C., Coshocton, Ohio; Fulton, M. C., Decatur, Ga.; Fox, L. Webster, Philadelphia, Pa.
(G) Green, H. L., Chicago, Ill.
(H) Hummel, A. L., Philadelphia, Pa., 2; Hibberd, Jas. F. Richmond, Ind., 2; Haller, J., Lanark, Ill.; Hutchins, W. A., Orangeville, Ill.; Hawes, J. H., Castine, Ohio.
(K) Keating, John William, Ann Arbor, Mich.; Kerrick, H. C., Brocton, Ill.; King, Geo. D., New York, N. Y.; Keister, B. C., South Boston, Va.; Kelly, W. R., Watonga, O. T.
(L) Lehman, V., Hahnville P. O., La.; Lall, Leopold, Orange, Conn. Lord & Thomas, Chicago, Ill.; Lowrie, W. M., Chicago, Ill.
(M) Millard, Perry H., St. Paul, Minn.; Manley, T. H., New York, N.Y.; Magee, W. H., Duluth, Minn.; Mott, J. W., Dexter, Mo.; Mercer Chemical Co., Omaha, Neb.
(P) Plummer, R. H., San Francisco, Cal.; Pendleton, F. M., Chicago, Ill.; Parkinson, J. H., Sacramento, Cal.
(R) Rosenberger, J. L., Chicago, Ill.; Rio Chemical Co., St. Louis, Mo.; Reyburn, Robt., Washington, D. C.; Rumbold, Thos. F., San Francisco, Cal.; Rosson, John B., Tulare, Cal.; Reed, R. Harvey, Columbus, Ohio.
(S) Souchon, Ed., New Orleans, La.; Sercomb, H. F., Milwaukee, Wis.; Stearns, F. & Co., Detroit, Mich., 2; Sharp, Joseph, Kansas City, Mo.; Schenck, W. L., New Castle, Colo.
(T) The W. T. Keener Co., Chicago, Ill.; The Cincinnati Medical Journal, Cincinnati, Ohio.
(W) Wilkinson, George, Omaha, Neb.; Witte, Max E., Mt. Pleasant, Iowa; Wyman, H. S., Moreuci, Mich.

PAMPHLETS RECEIVED.

Recent Studies in Naupathia or Seasickness, by W. W. Skinner, M.D.
Relation of the Climate of the Lake Region to Catarrhal Diseases of the Respiratory Organs, by J. M. G. Carter, M.D., Sc.D., Ph.D.
Some Points on the Treatment of Typhoid Fever, by J. M. G. Carter, M.D., Sc.D., Ph.D.
Celiotomy for Bilateral Pyosalpinx followed Four Days later by Appendicitis. Operation. Recovery, by F. H. Wiggin, M.D.
Dr. Unna's Plaster-Mulls, by H. Bigelow, M.D.
On the Clinical Use and Physiological Action of Bromo-Caffeine, by J. W. Fahr, M.D.
Twentieth Annual Report, Supt. of Cincinnati Sanitarium, Nov. 30, 1893.
The Difference between Chemically Pure and Commercial Bromids.
Report of Rush Hospital for Consumption and Allied Diseases. Feb. 1, 1892-Feb. 1, 1894.
Address of Welcome to the Association of Military Surgeons, by S. C. Busey, M.D.
Brain Surgery with Report of Nine Cases, by F. C. Schaeffer, M.D.
Report of Surgical Clinic, Wesley Hospital, by F. C. Schaeffer, M.D.
Neurotrophia, Neurasthenia and Neuriatra, by C. H. Hughes, M.D.
Notes on Naval Hospitals, Medical Schools and Training School for Nurses—with Sketch of Hospital History, by J. D. Gatewood, M.D.

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ADDRESS.

THE NUCLEINS AND NUCLEIN THERAPY.

Being the Annual Address of Section One of the Illinois State Medical Society, read by invitation.

BY VICTOR C. VAUGHAN, M.D.
ANN ARBOR, MICH.

Some recent investigations indicate that a knowledge of the nucleins is likely to be of service, as well as of interest, to the practitioner. These studies have already thrown some light upon certain physiologic problems and have enabled us to interpret more correctly some pathologic conditions. Moreover, some of the nucleins promise to be of value therapeutically. These facts make it desirable for us to familiarize ourselves, as far as possible, with these substances. I have therefore decided to discuss the nucleins in this address.

Physiologically, nucleins may be said to form the chief chemical constituents of the living parts of cells. Speaking broadly, we may say that the nuclein is that constituent of the cell by virtue of which this histologic unit grows, develops and reproduces itself. It is the function of the nuclein of the cell to utilize the pabulum within its reach. It must be evident that those tissues most abounding in cellular elements contain relatively the largest amounts of nuclein. It must also be seen that it is by virtue of their nuclein that the cells of various organs and organisms possess and manifest their individual peculiarities. We should therefore expect to find that the nuclein of the yeast cell is not identical with that of the bacillus tuberculosis, and that the nuclein of the spleen differs from that of the thyroid gland. The number of kinds of nuclein is limited only by the varieties of cells. Nuclein is the chemical basis of that part of the cell designated by the histologist as the nucleus, sometimes called chromatin on account of the readiness with which it absorbs and holds coloring agents. It is the nuclein of the bacterium which takes up and retains the stains, and it is on account of this fact, that the nuclein of the bacillus tuberculosis differs from that of other bacilli, that we are able to distinguish the former from the latter by its tinctorial properties. Differences in reaction with staining reagents, so plainly seen under the microscope, are only outward manifestations of less apparent and more important differences in chemical composition.

Chemically, the nucleins are complex, proteid bodies, characterized especially by the large amount of phosphorus which they contain. The phosphorus exists in the form of nucleinic acid, which is combined with a highly complex basic substance. So far as we know at present, the nucleinic acid of all nucleins is the same, yet the basic part differs in the various nucleins. This basic substance yields, as decomposition products, one or more of the so-called xanthin bodies; adenin, guanin, sarkin and xanthin. Some nucleins yield only adenin, and these may be designated as adenyl nucleinic acids. Those which furnish xanthin most abundantly may be called xanthyl nucleinic acids. Generally speaking, the nucleins are insoluble in dilute acids and soluble in dilute alkalies. They resist peptic digestion and in this way may be separated from most other proteid bodies.

Certain substances which are histologically and functionally nucleins do not yield any xanthin base as a decomposition product. These are now called paranucleins. Some of these are the antecedents of true nucleins. Thus the yolk of the egg contains a paranuclein, which may be isolated by removing the accompanying proteids by peptic digestion. This substance does not yield any xanthin base, but during the process of incubation it develops into a true nuclein.

Some nucleins are combined with albumens, forming compounds known as nucleo-albumens. When one of these bodies is submitted to peptic digestion, the albumen is converted into a peptone and the nuclein forms an insoluble precipitate. The casein of milk is a nucleo-albumen, the albumen of which is peptonized by gastric digestion.

The literature on this subject is not very extensive and a brief epitome of it at this time may be of some interest. Braconnot (1831), Quevene (1838), Schlossberger (1844), Mitscherlich (1845) and Bechamp (1865), all studied substances which we now know belonged to the nucleins. Chemically, their work was fairly accurate as far as it went, but no physiologic importance was attached to this substance thus early in their study, and as a consequence even those facts which were discovered, could not be properly interpreted.

Miescher was the first to study the nucleins with a fair appreciation of their importance and it was he who named them. The corpuscles from pus were obtained by the addition of dilute solution of sodium sulphate, subsidence and decantation. Then they were digested with pepsin and hydrochloric acid so long as peptones were formed. This left the nuclei of the cells. These were found to be rich in phosphorus and soluble in dilute alkalies. From the alkalin solution the substance is precipitated by dilute acids.

Hoppe-Seyler prepared nucleins from yeast; Lubavin, from casein; Plösz, from the nuclei of the blood corpuscles of birds; and Miescher from the yolks of eggs.

In 1874, Miescher made his most important contribution to the knowledge of nucleins. The material with which he worked consisted of the spermatozoa of salmon. The cells were best separated by feebly acidifying the spermatic fluid with acetic acid.

A small amount of albumen was carried down at the same time, but the quantity was so small that it did not interfere with the microscopic examination of the cells. In the fresh state, the spermatozoa were found to be very resistant to chemical agents. Strange to say, however, dilute solutions (10 to 15 per cent.) of common salt were found to be more destructive to them than boiling alkali or concentrated hydrochloric acid. Microscopically it could be seen that salt solutions cause the thick membrane of the head of the spermatozoön to first swell and then become invisible. The middle portion and the tail remain unchanged and indeed are less affected than by water. These parts are soluble in dilute hydrochloric acid (0.1 per cent.) and consist of an albuminous material.

The removal of fat from the spermatozoa is best accomplished with warm alcohol. Lecithin and cholesterin are removed with the fat. The greater part of the residue, insoluble in hot alcohol, consists of an organic base very rich in nitrogen, combined with an acid-like body rich in phosphorus. This compound is nuclein. The organic base is the substance which yields the xanthin bases, and the acid-like body is now known as nucleinic acid. Miescher called the complex, organic basic substance protamin. The readiness with which protamin may be split up into xanthin bases probably depends upon the period in their development which the spermatozoa have reached. Miescher found protamin a fairly stable body and obtained it in the form of a chlorid. The head of the spermatozoön is practically free from albumen and consists of nuclein with smaller quantities of lecithin, cholesterin and fat.

The wonderful lability of the nuclein molecule and its power of recuperating itself after being partially decomposed, are illustrated by the following experiment reported by Miescher: Well washed sperm, free from fat, is placed in dilute salt solution. Jelly-like lumps are formed and float in a clear fluid. The fluid portion contains protamin chlorid, but no nucleinic acid. The salt solution has partially decomposed the nuclein. On the addition of successive portions of common salt, more and more of the protamin passes into solution. However, the amount passing into solution remains always a fraction of the whole. Now, if the mixture be poured into a large volume of water, the jelly-like lumps disappear, an opaque network forms and all the protamin disappears from solution. A regeneration of the nuclein takes place.

Miescher further shows that certain organic and inorganic bases may be placed within or drawn from the nuclein molecule without modifying visibly the character of the substance. However, while there is no visible change, the nature of the nuclein may be in fact markedly altered. Each new combination is a body *sui generis*, possessing its own distinctive affinities and probably its own peculiar molecular arrangement. We have seen how an apparently indifferent substance, like common salt, may markedly alter the composition of nuclein. One may say that every change in the salt content, in the concentration and in the alkalinity of the fluid surrounding the tissue forming cell, however resistant the cell itself may appear, produces chemical changes which may be of the most vital consequence. With these facts before us, we can no longer be surprised when the pathologist fails to find, either macroscopically or microscopically, lesions commensurate with the symptoms observed during life.

Miescher failed to find any protamin in the sperm of the carp, frog or bull. Piccard found guanin and sarkin along with protamin in the sperm of salmon. Von Jaksch separated nuclein from the brain, and later this was done by Geohegan.

In 1879, Kossel published his first paper on nuclein, and since then he has made repeated and most valuable contributions, especially with reference to the derivation of the xanthin bases from the nucleins.

In 1889, Altmann prepared nucleinic acid from yeast, thymus, yolk of egg and salmon sperm. Impure solutions of nuclein in dilute alkali are rendered feebly acid with acetic acid. This throws down albuminous bodies which are removed by filtration. The filtrate is treated with hydrochloric acid and alcohol. The precipitate which now forms is nucleinic or nucleic acid, which is washed with alcohol and purified. Nucleinic acid contains about 9.4 per cent. of phosphorus and is free from sulphur.

Liebermann has claimed that nuclein is a combination of albumen and metaphosphoric acid, and he has prepared an "artificial nuclein" by precipitating albuminous solutions with this acid. However, since the substance thus formed does not yield xanthin bases, it can not be a true nuclein, but is a paranuclein. This artificial preparation corresponds with nuclein in the following particulars: 1, it is not digested by gastric juice; 2, it reddens moist litmus paper, although aqueous extracts of it are not acid; 3, it burns with difficulty and leaves an acid residue; 4, it is insoluble in dilute acids; 5, it is soluble in dilute alkalies; 6, it takes staining reagents as the nuclei of cells do; 7, it yields, according to Malfatti, nucleinic acid.

In view of these points of resemblance, it will be of great interest and of some importance to determine whether or not the artificial preparation has the germicidal properties which, as we will see later, are possessed by the natural nucleins.

Horbaczewski has made a most valuable contribution to our knowledge of the relation of uric acid to the nucleins. As has been stated, Kossel had demonstrated that the true nucleins yield one or more xanthin bases as decomposition products, but the relations of the nucleins to uric acid could only be surmised from the well-known close chemical connection between xanthin and uric acid. Horbaczewski has ascertained that uric acid is produced from the nuclein of spleen pulp, when the substance is brought in contact with certain oxidizing agents, such as fresh blood or dilute solution of the peroxid of hydrogen. Spleen nuclein does not contain ready formed uric acid, but it does contain the antecedent or mother substance of uric acid. This mother substance yields not only uric acid, but the other xanthin substances, as xanthin, sarkin, guanin and adenin. Uric acid is formed when the antecedent substance is split up in the presence of an oxidizing agent, while the other substances result when the process is carried out in the absence of such agents. This is in complete harmony with the facts which have been ascertained by the conversion of one of these xanthin bodies into other members of the same group. Certain other nucleins, as well as that of the spleen, serve as antecedents of uric acid. This discovery makes clear a hitherto most perplexing problem, which has concerned the chemist, the physiologist

and the clinician. In short, it explains the origin of uric acid in the mammalian body. The chemist had taught us to look upon uric acid as the result of an imperfect oxidation, the completed product of which is urea, but the physiologist has been unable to demonstrate this supposed relationship between urea and uric acid. The experiments of Horbaczewski show that the amount of uric acid and other xanthin bodies formed is a measure of nuclein metabolism. In other words, it indicates the number of nucleated cells which are suffering disintegration processes. Normally, the white blood corpuscles constitute the most important and probably the most numerous nucleated cells daily undergoing destructive changes. Therefore, any condition which induces an abnormal leucocytosis increases the amount of uric acid. In infants the number of nucleated cells is proportionately larger than in adults and the amount of uric acid formed is correspondingly large. In the fasting state, the white blood corpuscles are reduced and the uric acid is also diminished. Meat diet increases the number of white corpuscles and consequently the formation of uric acid. Quinin and atropin diminish the number of these corpuscles and by so doing lessen the amount of uric acid formed; while pilocarpin, antifebrin and antipyrin have been found to increase both. The increased formation of uric acid and xanthin in leukemia, phosphorous poisoning, acute febrile diseases, especially pneumonia, cirrhosis of the liver and pernicious anemia, now finds an explanation.

I should like to follow out this line of my subject and to discuss the significance of that condition which is sometimes designated as a uric acid diathesis, but time will not permit.

With the aid of Drs McClintock and Novy, I have demonstrated that some of the nucleins have germicidal properties. We experimented with nucleins obtained from yeast, eggs, the spleen, thyroid gland, and testes. All of these were found to be distinctly bactericidal. The results of this work were published in detail last year and it is not necessary to go over the subject in this paper. Kossel, of Berlin, has confirmed our statements concerning the germicidal action of the nucleins.

Dr. McClintock and I have also demonstrated that the germicidal constituent of blood serum is a nuclein. This nuclein is undoubtedly furnished by the polynuclear white corpuscles. Having demonstrated that the nucleins are germicidal, it remained to be ascertained whether or not they might be employed to prevent or arrest the growth of germs in the animal body.

I will detail some attempts made to render animals immune to certain diseases, by first treating them with nuclein and subsequently inoculating them with the germs.

The diplococcus of pneumonia is a germ which in its virulent form is, practically without exception, fatal to rabbits, causing death on the second or third day. Immunity to this germ has been secured by Emmerich, and others by previous treatment with the attenuated germ and with sterilized cultures. The following experiments were made in order to see whether or not immunity to the diplococcus pneumoniæ could be secured by previous treatment with nuclein.

The solution used in all of these animals contained about 2 per cent. of yeast nuclein:

Experiment 1.

Rabbit, weight 1,732 grams: Was given subcutaneously one c. c. of nuclein solution November 6, 7 and 9. On November 11, two days after the last nuclein treatment, this animal was inoculated with a virulent culture of the micrococcus. A control, weighing 1,520 grams, was inoculated at the same time and with the same amount of the culture. The control was found dead on the morning of November 13 and the treated animal on the morning of the 14th. The treated animal survived the untreated one twenty-four hours. Both animals showed the characteristic effects of the germ.

Experiment 2.

Rabbit, weight 1,222 grams: Was given subcutaneously one c. c. of the nuclein solution, November 6, 7, 9 and 11. Immediately after the last nuclein treatment, the animal and a control, which weighed 1,325 grams, were inoculated intra-abdominally with 0.2 c. c. of a virulent culture of the germ. On the morning of November 13, the control was found dead. The treated animal was evidently sick and weighed only 1,145 grams, showing a loss of 67 grams, and it continued to lose weight until November 24, when it was reduced to 990 grams. After this it slowly gained, weighing 1,075, December 1; 1,347, January 23; and 1,465, February 27. On the last mentioned day it was killed and found to be sound in every organ.

Experiment 3.

Rabbit, weight 1,130 grams: Was given subcutaneously one c. c. of the nuclein solution November 6, 7, 9, 11, 13 and 18. Immediately after the last nuclein treatment, this animal and a control weighing 1,325 grams were inoculated intra-abdominally with 0.2 c. c. of a virulent culture. On the morning of November 20, the control was found dead. The treated animal sickened, lost flesh and died November 27 from the effects of the germ.

The explanation of the failure to secure so good a result in this case as in the preceding is easily seen. In this experiment, five days elapsed between the last and the preceding injection of nuclein, and two days between that and the one preceding it. In other words, the intervals between the nuclein treatments were too long. This teaches us that the effects of nuclein are transient and that in order to receive any real benefit from its use it must be administered repeatedly and at comparatively short intervals. This lesson must not be lost sight of when we come to consider the therapeutical uses of nuclein.

Experiment 4.

Rabbit, weight 1,735 grams: Was treated subcutaneously with one c. c. of the nuclein solution on November 6, 7, 9, 11, 13, 18, 21, 23 and 24. Immediately after the last nuclein treatment it was inoculated intra-abdominally with 0.2 c. c. of a virulent culture of the germ. At the same time, four controls, weighing 1,395, 1,590, 1,210 and 1,400 grams, received in the same manner like quantities of the same culture. On the morning of November 26 all the controls were found dead. The treated animal lost weight and weighed December 1, 1,540 grams. After this it gained in weight, advancing to 2,200 by January 23 and to 2,460 grams by February 27. On this last mentioned date, this animal was killed and found to be normal in every respect.

EXPERIMENT 5.

Rabbits Nos. 1, 2, 3, 4, 5, 6, 7 and 8, weighing respectively 580, 595, 625, 600, 610, 537, 522, and 387 grams, were treated subcutaneously with the nuclein solution as follows: March 9, 0.3; March 10, 0.5; March 13, 0.6; March 14, 0.7; March 15, 1.0; March 17, 1.0; March 19, 1.0 c. c. Immediately after the last treatment, all were inoculated with 0.2 c. c of a virulent culture of the diplococcus. At the same time, control rabbits, A and B, weighing respectively 550 and 365 grams were inoculated in like manner with the same culture. On the morning of March 21, both controls and rabbits 2 and 8 were found dead. All the other treated animals remain well and healthy to-day (May 3). In this experiment, immunity was conferred upon 75 per cent. of the treated animals, while all of the controls in all the experiments died.

At this point in my experimentation, the following interesting question suggested itself: Is the immunity thus secured due to the direct germicidal action of the nuclein, or does the nuclein act by stimulating some organ whose duty it is to protect the body against bacterial invasion? An attempt to answer this question was made in the following experiment:

EXPERIMENT 6.

Rabbits Nos. 1, 2, 3, 4, 5, 6, 7, and 8, weighing respectively 344, 400, 415, 391, 365, 414, 287 and 417 grams, received injections of two c.c. of the nuclein solution intra-abdominally March 20, immediately after each had been inoculated with 0.2 c.c. of a virulent culture of the diplococcus of pneumonia. At the same time, rabbits, A and B, weighing respectively 394 and 397 grams, were inoculated with like amounts of the same culture, but received no nuclein. On the morning of March 22, all of these animals were found dead, and section showed that they died from the effects of the germ. Evidently when used in this way, the nuclein affords no protection against this germ. This confirms the view which I have before expressed, that the production of immunity is an educational process. I can hardly believe that as much of the nuclein as two c.c. existed in the body of any one of the animals which had been rendered immune, but this amount failed to protect when injected into the body immediately after inoculation. I conclude from this that the immunity which had been secured by repeated injections of smaller quantities of the nuclein was not due to the direct germicidal effects of this substance, but to its stimulating effect upon some organ. I will return to this point later.

It seemed desirable to test the immunizing effects of nuclein upon some other species of animal. Guinea pigs were selected and the results are given in the following experiments:

EXPERIMENT 7.

Guinea pig, weight 487 grams, was treated with nuclein solution as follows: October 23, 0.2; October 24, 0.4; October 25, 0.6; November 3, 0.6; November 4, 0.8; November 6, 1.0; November 7, 1.0; November 9, 1 c.c. November 11, two days after the last nuclein treatment, this pig (now weighing 560 grams) was inoculated with 0.2 c.c. of a virulent culture of the pneumonia germ. At the same time, a control pig, weighing 492 grams, was inoculated with a like amount of the same culture. The control died November 15, and the treated one November 21. Both animals showed the characteristic lesions and the germ was recovered in pure culture from each. Evidently in this case, the nuclein gave partial, but not complete, protection.

EXPERIMENT 8.

Guinea pig, weight 514 grams, had the same nuclein treatments as the preceding and an additional one of one c.c. November 11. Immediately after the last treatment it was inoculated. The same animal, used as a control in the preceding experiment served a like purpose in this. The treated animal died November 22.

EXPERIMENT 9.

Pigs 1 and 2, weighing 299 and 317 grams, had the same nuclein treatments as the preceding, with the addition of one c.c. each on November 13 and 18. Immediately after the last treatment, these animals, together with a control weighing 965 grams, were inoculated with the germ. The control died November 23. Of the treated pigs, No. 2 died from the effects of the germ December 1, and No. 1 was killed December 19 and found to be normal. When killed, this pig weighed 525 grams.

EXPERIMENT 10.

Pigs 1 and 2, weighing 317 and 364 grams, were treated with the same nuclein solution as the preceding, with the addition of one c.c. each November 18 and 21. November 23, two days after the last nuclein treatment, they were inoculated with the pneumonia germ. A control, weighing 617 grams, was inoculated with the same amount of the culture at the same time. The control died November 27. The treated animals were killed February 22 and found to be normal. They weighed 785 and 695 grams respectively when killed.

EXPERIMENT 11.

Pigs 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10, weighing 314, 335, 330, 265, 240, 275, 283, 435, 300 and 392, had on five successive days 1 c.c. each of the nuclein solution. Immediately after the last treatment, each pig received 0.2 c.c. of a virulent culture in the abdominal cavity. At the same time, two controls weighing 320 and 400 grams, were inoculated with the same culture. Both controls died on the fourth day, while all of the treated animals survived.

From the experiments detailed above, I draw the following conclusions:

1. Rabbits and guinea pigs may be protected against virulent cultures of the diplococcus of pneumonia by previous treatment with hypodermatic injections of a solution of yeast nuclein.

2. The immunity thus secured is not due to the action of the nuclein, as a germicide, directly.

3. The process of securing this immunity is an educational one, and, most probably, depends upon the stimulating effect of the nuclein upon some organ, whose function it is to protect the body against bacterial invasion.

4. The longer the nuclein injections are continued and the more frequently they are administered, the more complete is the immunity which is secured.

5. In order to obtain this immunity, the inoculation with the germ must follow soon after the last treatment with the nuclein.

I have made some attempts to render guinea pigs immune to tuberculosis. So far the results have been

not altogether satisfactory and in some instances contradictory. However, I will give these results, hoping that they may throw some light on the subject, and may possibly lead to something better.

In the first place it is desirable to ascertain whether the nuclein has any germicidal effects upon the bacillus tuberculosis outside the body.

Experiment 12.

August 8, 1893. Stirred up a large loop of a virulent sputum with one part of a 2 per cent. yeast nuclein solution diluted with five parts of sterilized, physiologic salt solution. Immediately injected three c.c. of this mixture into the abdominal cavity of pig 50, weighing 330 grams. August 18, killed the pig. There was a very slight, but perceptible, tubercular thickening of the border of the omentum. Result, failure.

Experiment 13.

August 8, 1892. After the above-mentioned mixture of sputum and dilute nuclein solution has stood for one hour in an incubator at 38 C., 3 c. c. of it was injected into the abdominal cavity of pig 51, weighing 625 grams. September 27, killed this pig, now weighing 575 grams. Found a tubercular nodule in the abdominal wall at the point of inoculation. This nodule was the size of a pea and contained caseous matter in which a few granular bacilli were found. The border of the omentum was thickened and this was tubercular. Result, failure.

Experiment 14.

August 9, 1892. Injected three c. c. of the above-mentioned mixture of sputum and dilute nuclein solution, after it had stood for twenty-four hours in an incubator at 38 C., into the abdominal cavity of pig 42, weighing 360 grams. August 18, killed this pig, now weighing 390 grams, and found it normal in every respect. The point of inoculation could not be detected. Result, positive.

Experiment 15.

August 18, 1892. About five c. c. of thick, ropy, virulent sputum was placed in an Esmarch dish, covered with twenty c. c. of the nuclein solution undiluted. After this had stood for twenty-four hours in an incubator at a temperature of 38 C., it was examined microscopically and the tubercle bacilli were found to be present in great numbers and to stain normally. August 19, one loop of this sputum was stirred up with one c. c. of salt solution and injected into the abdominal cavity of pig 52, weighing 402 grams. September 1, this pig, now weighing 415 grams, was killed and found to be normal. Result, positive.

Experiment 16.

Feb. 3, 1894. Stirred up one part of virulent sputum with five parts of nuclein solution and allowed to stand in an incubator at 38 C., for four days. At the expiration of this time, microscopic examination showed the tubercle germs present in large numbers and staining well. February 9, inoculated pig 120, weighing 300 grams, with the sputum. February 29, killed the pig, now weighing 340 grams, and found it to be perfectly normal. Result, positive.

It might possibly have happened, had these pigs been allowed to live longer, that some of them, found free from tuberculosis, would have developed the disease. Further experiments upon this point must be made.

Experiment 17.

Pigs 122 and 123, weighing respectively 202 and 495 grams, received hypodermatic injections of yeast nuclein solution (2 per cent,) as follows: February 10, 0.1; February 12, 0.2; February 13, 0.3; February 14, 0.4; February 15, 0.5; February 17, 0.5; February 19, 0.6: February 21, 0.7; February 23, 0.8; February 24, 0.9; February 26, 1.0; February 27, 1.0; February 28 1.0; March 1, 1.0

March 1, these pigs, now weighing 289 and 557 grams respectively, together with a control (No. 134, weight 20 grams) were inoculated with a pure culture of the bacillus tuberculosis. The control was found dead March 26. Section showed a small nodule at the point of inoculation. The omentum was thickened and tuberculous. The spleen, both kidneys, and the lower lobe of one lung are involved.

March 26, pig 122, weighing 339 grams, was killed and found to be perfectly normal. April 23, pig 123, weighing 597 grams was killed. There is a nodule as large as a filbert at the point of inoculation. This contains caseous matter filled with bacilli. The omentum contains numerous caseous nodules, in which germs are found. Other organs are normal. Whether No. 122 would have developed tuberculosis, had it been allowed to live longer, no one can say.

Experiment 18.

Pigs 124 and 125, weighing 227 and 255 grams, received the same treatment as Nos. 122 and 123 with the addition of one c. c. each on March 2 and 3. Immediately after the last treatment, these pigs, now weighing 340 grams each, were inoculated with a virulent sputum. At the same time a control (No. 135, weight 242 grams) received the same inoculation.

April 3, the control (weight 282 grams) was killed and the omentum, spleen and liver were found filled with tuberculous nodules.

April 3, No. 125 (weight 400 grams) was killed. With the exception of a small nodule containing caseous matter with few bacilli, at the point of inoculation, no abnormality could be found.

April 24, No. 124 (weight 455 grams) was killed. There were a few small nodules in the omentum. These contained bacilli. In all other respects the animal was normal.

While all of these animals were infected, the disease had made most extensive and rapid progress in the untreated one.

Experiment 19.

Pigs 126 and 127 (weight 215 and 300 grams) received one more nuclein treatment, March 5, than Nos. 124 and 125. Immediately after last treatment, these pigs (weight 314 and 475 grams) were inoculated with a virulent sputum. At the same time a control (No. 137, weight 332 grams) was inoculated with a like amount of the same sputum.

April 25, the control (weight 365 grams) was killed. There is a small tubercular nodule at the place of inoculation. The inguinal glands on both sides are greatly enlarged and tuberculous. The spleen is much enlarged and tuberculous. The omentum contains numerous tubercular nodules.

April 25, No. 126 (weight 365 grams) was killed and found to be perfectly normal in every respect.

April 25, No. 127 (weight 580 grams) is reserved in order to see whether it will become tuberculous.

EXPERIMENT 20.

Pigs 128 and 129, weighing 307 and 230 grams, received one more nuclein treatment than Nos. 126 and 127. Immediately after the last treatment, they (weight 480 and 340 grams) were inoculated with sputum. At the same time a control (No. 138, weight 315 grams) was inoculated with the same sputum.

April 25, the control (weight 427 grams) was killed. There was a tubercular nodule as large as a filbert at the point of inoculation. The inguinal glands on both sides were enlarged and tuberculous. The spleen was enlarged and filled with pin-head tubercles. The liver was filled with pin point nodules.

April 25, No. 129 (weight 427 grams) was killed. There was a pin-head nodule at the point of inoculation and the large gland in the omentum was enlarged to the size of a pea and tubercular. All other organs were normal. No. 128 has been reserved in order to observe the result of further time.

These experiments seem to indicate that previous treatments with nuclein retard, but in the majority of cases do not prevent, the development of tuberculosis from subsequent inoculations. I have made a number of experiments in which the nuclein treatment was not begun until some days after the animals had been inoculated. The following statements detail some of the results obtained:

EXPERIMENT 21.

Dec. 27, 1892, four glycerin agar tubes of the tubercle bacillus were rubbed up with twenty c. c. of beef tea, and guinea pigs Nos. 9, 10, 11, 12, 13, 14, 15, 16, 18 and 19 were inoculated by injection into the abdominal cavity. Nos. 7, 8 and 17 were used as healthy controls. Of those inoculated, Nos. 9, 11, 13, 14 and 18 were selected for treatment, while Nos. 10, 12, 15, 16 and 19 were kept as untreated controls.

The weights of these animals December 27 were as follows:

No. 7—747 grams.	No. 12—667 grams.	No. 16—607 grams.
No. 8—889 grams.	No. 13—724 grams.	No. 17—747 grams.
No. 9—709 grams.	No. 14—525 grams.	No. 18—629 grams.
No. 10—759 grams.	No. 15—744 grams.	No. 19—560 grams.
No. 11—614 grams.		

The solution used in the treatment of this series is known as solution C, and it was obtained in the following manner: Some brewer's yeast was extracted with dilute alkali and filtered. The filtrate was precipitated with dilute hydrochloric acid. The precipitate was re-dissolved in alkali and re-precipitated with acid several times. Finally the precipitate was dissolved in .25 per cent. of potassium hydrate. This solution gives the biuret, xanthoproteic and Millon reactions. It contains a nucleoalbumen which is soluble in a 0.2 per cent. solution of hydrochloric acid, but is precipitated on the further addition of acid. The amount of nucleoalbumen in the solution was determined and found to be .9 of one milligram per cubic centimeter. This solution was found during the experiment to be too alkalin, the excess of alkali causing sloughing of the tissue. After this was discovered the solution was diluted with a sterilized 6 per cent. solution of common salt, and then neutralized by the addition of dilute acetic acid. However, the fact that the solution was too alkalin was not discovered until some of the animals had been seriously injured by the treatment, as will be subsequently shown.

Of the healthy controls, all remained in perfect condition. The fate of each of the untreated tuberculous animals was as follows:

No. 10 died Jan. 7, 1893. Post-mortem examination showed internal hemorrhage, clots of blood being found under the liver and stomach. Undoubtedly some small blood vessel was wounded at the time of inoculation and the slow oozing of blood had led to death. The site of the wound could not be located. It is probable that the needle punctured the liver. The extent of the tuberculosis was surprising. The border of the great omentum was a mass of tuberculous nodules. The surface of the liver was dotted with tubercles and the germ was found not only in all these nodules, but also in a bloody exudate in the pleural cavity.

No. 12 was killed by chloroform April 3, 1893. Post-mortem examination showed the great omentum to be a tuberculous mass. One lump was as large as a hickory nut and was filled with cheesy matter. In fact, all of the tuberculous nodules contained caseous substance. This was very soft, and I suppose that it would soon have broken down and spread the disease to other parts of the body. Other organs than those mentioned above were normal.

No. 15 died Jan. 13, 1893. Post-mortem showed extensive tuberculosis. The liver was dotted with tuberculous nodules. The kidneys and spleen also showed numerous pin-head points of infection. The germs stained in a normal manner. The pleural cavity was again found filled with a bloody exudate. The lungs were infiltrated and solidified in places. There was no noticeable phagocytosis.

No. 16 died Jan. 12, 1893. The liver was filled with fine tubercles, from those barely visible to those the size of a pin-head. The fringe of the omentum was tuberculous. There was an exudate in the pleural cavity. Germs were found in all of these places and stained normally.

No. 19 was pregnant at the time of inoculation, and gave birth to one pig January 10. After this, the animal seemed to improve. It was killed May 24, 1893. The post-mortem examination showed a widely extended tuberculosis. The great omentum contained tubercles as large as almonds. These were filled with a creamy matter, in which millions of germs were found. A tuberculous nodule as large as a filbert was found in the lower margin of the liver, and smaller nodules existed in other parts of this organ. Tubercles of the size of a pea were found scattered through the meseutery, peritoneum and diaphragm. The kidneys were also tuberculous. The spleen and lungs remained unaffected. The germs found in the places above mentioned stained normally. The treatment was begun six days after the inoculation.

The following table will show the dates of treatment and the amounts of solution C injected. These injections were made under the skin over the abdomen:

Jan'y No.	2 c.c.	4 c.c.	6 c.c.	8 c.c.	10 c.c.	12 c.c.	13 c.c.	14 c.c.	15 c.c.	16 c.c
9	.2	.3	.5	.25	.02	4.	. .	5.	5.	5.
11	.4	.3	.5	.25	.01	6.	. .	. .	5.	. .
13	.6	.3	.5	.25	.01	1.	5.	. .	5.	. .
14	.6	.3	.5	.25	.01	.5	5.	4.	5.	3.5
18	.6	.3	.5	.25	.01	.5	5.	. .	5.	. .

Jan'y	17	18	19	20	21	22	23	24
No.	c.c.	c.c.	c.c.	c.c.	c.c.	c.c.	c.c.	c.c
9	5.	5.	. .	. .	. .	. .	. .	. .
11	5.	. .	. .	. .	. .	. .	. .	. .
13	5.	. .	5.	5.	5.	5.	5.	5.
14	5.	5.	5.	. .	. .	. .	. .	. .
18	5.	. .	5.	5.	5.	5.	5.	5.

February	1	2	13	14
No.	c.c.	c.c.	c.c.	c.c.
9	. .	5.	5.	5.
11	5.	5.	5.	. .
13	. .	. .	. .	. .
14	. .	. .	5.	. .
18	. .	. .	. .	. .

The large injections given Nos. 9 and 12 on January 12 caused extensive sloughing of the skin. The fate of the treated pigs was as follows:

No 9 received, as is shown in the above table, four c.c. on January 12. Before the injection, the animal seemed to be dying. The respirations were shallow and rapid, and the peculiar pumping motion of the body which had been observed in other guinea pigs just before death was very marked. After this large injection, and notwithstanding the sloughing of the skin which followed, the animal improved. February 16, No. 9 was killed, on account of the extensive sloughing which now existed on the abdomen. The fringe of the omentum was lined with tubercular nodules from the size of a pin-head to that of a hazel nut. The base of the liver was tuberculous. Tubercular nodules were found on the diaphragm and in the pleura. The lungs were free from disease. All of the above-mentioned nodules contained numerous bacilli, which showed granular degeneration. Phagocytosis was marked. The spleen was enormously enlarged and weighed 18.2 grams. Two glycerin agar tubes were inoculated with the germs taken from this animal. These tubes did not develop. One of the nodules from the omentum was rubbed up with 1.5 c.c. of beef tea, and the whole of this was injected into the abdominal cavity of guinea pig 28.

Guinea pig 28 was killed May 23, 1893. It weighed at the time of inoculation 490 grams, and on the day it was killed, 610 grams. The animal was found to be very fat, apparently well, and the post-mortem examination failed to reveal any trace of tuberculosis or any other trouble.

No. 11 had an injection of six c.c. of the strongly alkalin solution of nuclein on January 12. The condition of this animal at that date was practically the same as that of No. 9, and both seemed to be in a worse condition than No. 15. After this injection, this animal gradually decreased in weight until it died March 3, at which time it weighed 375 grams. The skin over the thighs and arms was covered with thick scales. Over the abdomen there was quite a slough, and the skin was adherent to the muscular walls. The condition of the skin and the sloughing were due to excess of alkali. The fringe of the omentum was lined with tubercular nodules, one of which was as large as a hazel nut. These were filled with germs, many but not all of which showed the granular degeneration. Tubes were made from these, and although slow to develop, both showed an abundant growth on April 3. The lungs were somewhat congested, but not tuberculous. The fluid usually found was present in the pleural cavity. The liver was dark and congested, but not tuberculous. The spleen weighed 5.85 grams. At the same time that the tubes were inoculated, guinea pig 30 was also inoculated with a tubercular nodule from the omentum, rubbed up in beef tea.

No. 30 was killed May 30. This animal was well nourished, having gained in weight from the day of inoculation, March 3, from 480 grams to 587 grams. The only abnormality which could be found in the animal was a nodule not larger than a flaxseed in the great omentum. On cutting this open it was found to contain a cheesy matter, and this, after proper staining formed a most interesting study. The cheesy mass was made up of polynuclear cells, the nuclei taking the blue stain so deeply that they might have been mistaken for micrococci. After searching through many fields, the granular *débris* of a bacillus was found, and in the whole of the contents of the nodule less than a dozen of these remnants of bacilli were detected.

No. 13 was killed April 2, 1893. It weighed at this date 797 grams. There was a tubercular nodule under the skin of the abdomen at the place of inoculation. This was as large as a small cherry. It contained cheesy matter. There were also three very small nodules in the great omentum. All of these nodules contained the bacillus, which showed a marked beaded degeneration. Four glycerin agar tubes were made from these nodules. On May 23, two of these tubes showed no growth, while the other two showed slight growth. No animal was inoculated with this material.

No. 14, having lost in weight until it was reduced to 300 grams, died April 20. There were two small tubercular nodules one-eighth of an inch in diameter in the omentum. There were no other signs of tuberculosis in any part of the body. No tubercle germs could be found anywhere. The spleen was enlarged and adherent. This organ contained a small abscess, cultures from which developed a small bacillus giving bipolar staining. The kidneys were diseased, whitish on the surface, and the cut surfaces showed infiltrated blood. The contents of one tubercular nodule were rubbed up with three c.c. of beef tea and one c.c. of this was injected into the abdominal cavity of guinea pig 31.

No. 31 was killed Oct. 20, 1893. It weighed at the time of inoculation 792 grams, and at the time of killing 920 grams. The animal was very fat, and post-mortem examination showed no abnormality.

No. 18 was killed May 24, 1893. The animal was well nourished. Post-mortem examination showed only two small tubercles. One of these was in the great omentum and about the size of a small pea. This contained cheesy matter, in which only a few germs could be found. The other was of about the same size and was found in the lower margin of the liver. In this the germs were relatively somewhat more abundant, but were absolutely few. All other organs were normal. Guinea pig 37 was inoculated with the contents of the nodule taken from the omentum.

No. 37 was killed Oct. 20, 1893. At the time of inoculation it weighed 414 grams, and at the time of killing 720 grams. This animal was found to be in a perfectly healthy condition in every respect.

The germ with which these animals were inoculated was evidently markedly virulent. It is impossible to tell how far the disease had progressed in each animal when the treatment was begun. I think that I am justified in concluding that the progress of the disease was retarded and the virulence of the germ reduced (as was shown by the results of the secondary inoculations) by the treatment.

EXPERIMENT 22.

April 28, 1893, pigs 7, 8, 17, 26, 27, 32, 33 and 34 were inoculated with a pure culture of the bacillus tuberculosis.

The weights of these pigs, April 28, were as follows:

No. 7— 987 grams. No. 26—705 grams. No. 33—597 grams.
No. 8—1147 grams. No. 27—685 grams. No. 24—950 grams.
No. 17— 972 grams. No. 32—717 grams.

Nos. 7, 8, 17, 26 and 27 were treated, while Nos. 32, 33 and 34 were left without treatment.

The solution used in the treatment of these animals was one of paranuclein, obtained from the yolks of eggs, of unknown strength.

The fate of each of the untreated animals was as herewith given:

No. 32 was killed Oct. 20, 1893. At this time it weighed 945 grams, a gain of more than two hundred grams since the time of inoculation. Examination showed two tubercular nodules in the omentum. One was as large as a hazelnut, while the other was smaller. These were filled with bacilli, normal in appearance and staining well. All other organs were normal.

No. 33 was killed Sept. 22, 1893. It then weighed 885 grams, a gain of nearly three hundred grams since inoculation. The omentum was filled with tubercular nodules. These contained numerous bacilli. Many of the mesenteric glands were tuberculous and the peritoneal covering of the stomach was dotted with pin-head tubercles. All other organs were normal.

No. 34 was killed Sept. 22, 1893. At this time it weighed 1,020 grams, a gain of 70 grams since inoculation. There was a tubercular nodule the size of a hazelnut in the omentum. This contained a purulent fluid, in which a few bacilli were found. These germs stained poorly. The rest of the omentum was thickened but not nodular. The lungs contained numerous tubercular nodules.

The treatment of Nos. 7, 8, 17, 26 and 27 was begun May 2, four days after the inoculation. The amounts received by each of these animals are stated in the following table:

May	2	3	4	5	8	9	10	11
No.	c.c.	c.c.	c.c.	c.c.	c.c.	c.c.	c.c.	c.c.
7	2.5	2.5	2.5	2.5	1.66	1.	1.	1.
8	. .	2.5	2.5	2.5	1.66	1.	1.	1.
17	. .	2.5	2.5	2.5	1.66	1.	1.	1,
26	. .	2.5	2.5	2.5	1.66	1.	1.	1.
27	. .	2.5	2.5	2.5	1.66	1.	1.	1.

May	12	15	16	17	18	19	22
No.	c.c.	c.c.	c.c.	c.c.	c.c.	c.c.	c.c.
7	1.	1.	1.	1.	1.	1.	1.
8	1.	1.	1.	1.	1.	1.	1.
17	1.	1.	1.	1.	1.	1.	1.
26	1.	1.	1.	1.	1.	1.	1.
27	1.	1.	1.	1.	1.	1.	1.

The fate of these animals was as follows:

No. 7 was killed Sept. 24, 1893. At this time it weighed 1,010 grams, a gain of 37 grams since inoculation. Examination failed to reveal any abnormality.

No. 8 was killed Feb. 20, 1894; weight 1,240 grams a gain of 100 grains since inocculation. Post-mortem showed an excessively fat animal. At one point the omentum was slightly adherent to the liver. On carefully detaching the parts, a nodule the size of a pea was found. This nodule contained cheesy matter in which no germs could be found. In all other respects this animal was normal.

No. 17 was killed Oct. 20, 1893, weight 1,015 grams, a gain of 43 grams since inoculation. Examination failed to reveal any abnormality.

No. 26 was killed Oct. 17, 1893, weight 845 grams, a gain of 140 grams since inoculation. The omentum contained a large amount of fat. In this fat I found one nodule the size of a flaxseed. I could find no germs in this. In the lower border of the liver a nodule the size of a pea was found. This contained caseous matter in which a few germs were found. In all other respects this pig was normal.

No. 27 was killed Sept. 27, 1893, weight 750 grams, a gain of 65 grams since inoculation. Examination showed tubercular nodules in the great omentum. These contained purulent matter with a few bacilli. All other organs were normal. The condition of this animal did not differ materially from that of the untreated ones.

It should be remarked that about the middle of May, Nos. 26 and 27 seemed quite sick. On May 19, they weighed 630 and 552 grams respectively. It is evident that the germ used in this experiment was not very virulent. Three out of five of the treated pigs were practically free from tuberculosis.

In what manner may nuclein be of therapeutic value? What properties has it which may be of service in the treatment of disease? What is its physiologic effect? These questions can not yet be answered in detail and without reservation. In the first place, I may say that I believe the nucleins to be wholly free from poisonous properties. I have injected subcutaneously in man one and one-half ounces of a 2 per cent. solution of yeast nuclein at one time, without harm other than the temporary irritation caused by the large volume of fluid injected, and I have administered six and eight ounces of the same solution during twenty-four hours by mouth without ill effect. In some persons, however, a much smaller amount than those mentioned above, given hypodermatically, may cause a marked elevation of temperature. In one patient, the hypodermatic injection of forty drops or more of the 2 per cent. solution of yeast nuclein, frequently tried, invariably caused the temperature to rise from 2 to 4 degrees. This patient is a large, apparently robust man, weighing 195 pounds, in whom tuberculosis of the neck of the bladder had been recently detected. It should be stated that this man suffered more or less constantly from muscular rheumatism. In a few instances, the injection of eighty drops or more has been followed by a chill and an elevation of temperature. In some of these an erysipelatous redness has appeared about the point of introduction, but this has always disappeared after twenty-four hours without treatment.

In each of three young men, who were, so far as I could ascertain, in good health, the subcutaneous injection of eighty drops of a 2 per cent. solution of spleen nuclein caused an elevation of temperature of 1 degree at the end of the third hour. In these cases the temperature gradually rose and fell in the same manner. In tuberculous patients, the effect of repeated treatments is a lowering of the temperature.

I have employed daily injections in patients for six months and longer, without seeing any evidence that the nucleins may produce injurious effects when thus continued.

We have, in the nucleins, substances which we have long desired, *i. e.*, non-poisonous germicides. We

reasonably expect to find that such substances possess therapeutic value. The following brief reports will illustrate the character of some of the cases in which I have employed nuclein with benefit:

Case 1.—Membranous Tonsillitis—Leida S.. 10 years old, was seen about 8 P.M. Both tonsils were swollen and covered with a thin white membrane, through which the dark red of the inflamed gland could be seen here and there. The temperature was 102.4 degrees. The tongue was slightly coated. The bowels had moved once during the day. A 2 per cent. solution of yeast nuclein was diluted with an equal volume of sterilized salt solution and the patient was instructed to use this as a gargle every hour until she should go to sleep and to continue the same the next morning. Nothing else was prescribed. The next day about 11 A.M., the little girl came to my office with temperature normal, and throat free from soreness. The membrane had disappeared and the tonsils were much reduced in size.

I have records of some twelve cases similar to this. In all, the fever disappeared within twenty-four or at most forty-eight hours. In none of these was anything, save the nuclein, administered.

These cases are very suitable for the use of nuclein, and especially for yeast nuclein. The germ present in the membrane belongs to the pyogenic organisms, and these are, as we have found by experiment, especially susceptible to the germicidal effects of the yeast nuclein, while they are much more resistant to spleen nuclein.[1] In the second place, the membrane is spread out in a thin layer and therefore the application of the nuclein is direct. Solutions of nucleins diffuse through membranes very slowly and consequently the thinness of the tonsillar deposits is favorable to the rapid action of the germicide.

Case 2.—Streptococcus Diphtheria.—On the evening of April 14, the throat of Denwood Burt, a boy 3 years old, was found to be filled with a thick grayish membrane, which covered the posterior wall of the larynx and extended on each side in front of the pillars of the fauces. The child was very restless and its temperature in the axilla was 102.5 degrees. The only remedy employed was a 2 per cent. solution of yeast nuclein diluted with an equal volume of sterilized salt solution. The child was not old enough to gargle and stoutly resisted every attempt to employ the remedy. An atomizer was used through both the nose and mouth. The spray was used three times during the night of April 14, six times during the 15th, twelve times each during the 16th, 17th and 18th. The temperature ran as follows: April 15, 100 at 12:30 P.M.; 101 at 6:30; and 100 at 8:00; April 16, 8:30 A.M., 98.5; at 8:00 P.M., 101.2; April 17, 12:00, 99.2; 6:00 P.M., 99; April 18, normal all day. The membrane gradually disappeared and was all gone by the evening of April 17.

I have records of three other cases similar to this, but in these the patients were old enough to gargle and the membrane disappeared and the temperature fell more rapidly. I have not had an opportunity to test the value of the nucleins in diphtheria caused by the Löffler bacillus. In the cases mentioned, the streptococcus was present.

Case 3.—Indolent Ulcer.—Mr. Stauch, a printer about 40 years old, had been under treatment in Detroit and Ann Arbor for more than a year for an indolent ulcer of the leg. Various stimulating and antiseptic washes and dressings had been applied. The ulcer measured one and one-quarter inches in length and half an inch in breadth at the widest part. I had this patient under observation some four weeks before I resorted to the nuclein. During this time, I used a mercurial wash and attempted to administer potassium iodid. However, the latter produced a severe acute coryza, and although it was repeatedly discontinued and begun again, the same unpleasant result followed each time. When I began the nuclein, nothing else was used. I injected into the tissue about the ulcer 80 minims of a 2 per cent. solution of yeast nuclein. In all, eight of these injections were made. The ulcer healed perfectly, and although two months have passed since the last treatment, there has been no return. The injections caused a burning sensation at the time, but immediately after each treatment the patient walked half a mile to his work and he stood at his case each working day of the week.

This is the only case of the kind in which I have employed nuclein.

As has been stated, the action of nuclein in giving immunity to the pneumonia germ is not due to its direct germicidal effect. To what is its action due? This is a most important question. In my paper on "Immunity and Cure in the Infectious Diseases," read before the Pan-American Medical Congress last September, I stated that we must look for curative agents in these diseases in one or the other of the following classes: 1, non-poisonous germicides of cellular origin; 2, substances which stimulate the activity of those organs whose function it is to protect the body against these diseases. Now, while we have in the nucleins, substances of the first class (and the action of yeast nuclein in membranous tonsillitis and in streptococcus diphtheria must be due to its direct germicidal action), I believe that the nucleins belong also to the second class mentioned above. The phagocytic theory, developed by Metchnikoff, teaches that the polynuclear white corpuscles are the natural defenders against bacterial invasion. This theory seemed to be disproved by the researches of Nuttall and others, who showed that blood serum freed from corpuscular elements has germicidal properties. However, McClintock and I have shown that the germicidal substance in blood serum is a nuclein, and certainly the most probable source of this nuclein found in blood serum is the polynuclear white corpuscle. Now, the administration of nuclein increases these corpuscles. This is a point which my colleague, Dr. Huber, has kindly consented to investigate, and at present I will give only some general statements of the results which he has thus far reached. These may be condensed as follows:

1. The subcutaneous injection of nuclein increases the number of white blood corpuscles.

2. This increase occurs in both healthy and tuberculous persons.

3. With like quantities of nuclein injected, the increase varies with the person. It may be slight, and it may be three-fold.

4. This increase occurs principally in the polynuclear cells.

It is evident as a rule as soon as the third hour after treatment and generally disappears after the forty-eighth hour.

If the nucleins shall prove of any value in the treatment of tuberculosis, it will most probably be due to the fact that they increase the polynuclear white corpuscles.

I have been using nuclein in the treatment of tuberculosis in man since May 1, 1893. At first I employed only yeast nuclein, but now I am using spleen nuclein in some cases. When sufficient evidence has been obtained either to reject or recommend the treatment, the results will be communicated to the profession. I may say, however, that only in initial cases may we expect any benefit, and even in regard to these I must have more abundant material and a longer experience before I can speak with any certainty.

[1] The fact that nucleins from different sources affect one germ more seriously than another is one which promises to be of importance in the pursuit of these investigations.

ORIGINAL ARTICLES.

REPORT OF CASES OF ABDOMINAL SECTION AT ROBINWOOD HOSPITAL FOR WOMEN, FROM MAY 1, 1893, TO JAN. 1, 1894.

Read before the Detroit Gynecological Society, April 4, 1894.

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It is to be regretted that the entire profession has not yet realized the importance of timely operation in destructive disease of the abdomen and pelvis. By *timely* is meant as soon as operation is clearly indicated. To delay, until the surrounding parts have become involved, or until perforation of some of the viscera has occurred may be mainly attributed the fatal and sometimes imperfect results after operation. The question of palliation and delay in cases of ovarian cyst has long since been settled, not only in the minds of specialists, but also in the minds of the general surgeon and practitioner. Why should any better results be expected from palliation in cases of ovarian abscess, destructive inflammation of the tubes and ectopic pregnancy?

Dr. Chas. P. Noble in his interesting report on "Abdominal Surgery at the Kensington Hospital for Women," very truly says that, "without operation it is only by accident that such cases ever become well, and those who do become well run many risks which could be avoided by prompt operation—risks far exceeding those of the operative treatment." Given a case in which an operation is necessary, nothing can be gained by delay and much may be lost. *Dernier ressort* operations are usually unsatisfactory operations and very frequently fatal. Every fatal result is a reproach to the profession, and especially to gynecologists. While operation for abdominal and pelvic disease should be held in reserve, like every other remedy it should be applied while there is yet hope. The proper time to operate is not easy to determine in all cases. Every case is peculiar in itself, and treatment can only be determined by the condition and peculiarity in each case. Tubo-ovarian inflammation coëxisting with chronic endometritis may, and sometimes does get well after curettage, irrigation and drainage, but if disorganization and suppuration have occurred, as can usually be told by the clinical history and physical signs, any other treatment than total extirpation of those diseased organs is irrational and therefore unscientific. The existing sentiment against removal of the uterine appendages is entirely right, if applied to healthy appendages, which have been and are yet needlessly removed, only by unskilled and untrained hands; but when those organs become so disintegrated and disorganized by disease that the health and life of the patient are in constant peril, that sentiment that is so solicitous about "unsexing" and "mutilating" women and would permit them to die on that account is entirely wrong. Only those who occupy an advanced position have ever practiced or sanctioned the removal of the uterine appendages, except in cases in which function and therefore structure have already been destroyed by disease. Celiotomy is clearly indicated in all such cases, and no other treatment will do the slightest good.

As will be seen in the following report, the chances for recovery in the two fatal cases would have been much better had the operation been done sooner.

The Robinwood Hospital for Women began its career May 1, 1893. It was built and equipped for the care and treatment of women afflicted with diseases peculiar to their sex. Its foundation principle is the well-known fact that such diseases can be more successfully dealt with in a special hospital. The following report emphasizes this fact as applied to abdominal and pelvic disease. Other gynecological cases have been treated, but are excluded from this report. The abdominal cases have been very interesting and the satisfactory results obtained will be seen by a glance at the following table. A number of these cases have been considered of sufficient interest to justify a report in detail:

No.	Date of Operation.	Residence.	Age.	Social Condition.	Occupation.	Medical Attendant.	Disease.	Result.
1	May 2	Toledo, Ohio.	36	Single.	Dressmaker.	Dr. Jno. Gardner.	Fibro-cystic degeneration of ovaries—small myoma.	Recovery.
2	" 5	Bryan, Ohio.	25	Single.	Domestic.	Dr. S. Belle Craver.	Chronic ovaritis and salpingitis.	Recovery.
3	" 13	Dupont, Ohio.	28	Married.	Housewife.	Dr. M. M. Hixon.	Large ovarian abscess.	Death.
4	" 24	Toledo, Ohio.	23	Married.	Housewife.	Dr. C. A. Kirkley.	Double pyosalpinx.	Recovery.
5	Jan. 12	Auburndale.	38	Married.	Housewife.	Dr. C. A. Kirkley.	Double pyosalpinx.	Recovery.
6	" 15	Lima, Ohio.	29	Married.	Housewife.	Dr. S. B. Hiner.	Double pyosalpinx.	Recovery.
7	" 20	Toledo.	51	Married.	Housewife.	Dr. C. L. Van Pelt.	Sub-peritoneal fibroid.	Recovery.
8	July 6	Toledo.	35	Married.	Housewife.	Dr. C. A. Kirkley.	Ovarian fibro-cyst.	Recovery.
9	" 11	Toledo.	32	Married.	Housewife.	Dr. G. A. Hollister.	Double pyosalpinx.	Recovery.
10	" 14	Toledo.	19	Single.	Dressmaker.	Dr. G. A. Hollister.	Infantile uterus—tubo-ovarian degeneration.	Recovery.
11	" 18	Toledo.	28	Married.	Housewife.	Dr. C. A. Kirkley.	Double tubo-ovarian abscess.	Recovery.
12	" 4	Archbold, Ohio.	20	Single.	Seamstress.	Dr. A. J. Murbach.	Hystero epilepsy—chronic ovaritis.	Recovery.
13	" 31	Toledo.	23	Widow.	Waitress.	Dr. C. A. Kirkley.	Double pyosalpinx.	Recovery.
14	Aug. 8	Lima, Ohio.	37	Married.	Housewife.	Dr. R. E. Jones.	Fibro-cystic myoma.	Recovery.
15	" 10	E. Toledo.	29	Married.	Housewife.	Dr. C. A. Kirkley.	Ovarian cystoma.	Recovery.
16	" 28	Toledo.	29	Widow.	Housek'per.	Dr. C. A. Kirkley.	Double pyosalpinx.	Recovery.
17	Oct. 3	Toledo.	32	Married.	Housewife.	Dr. C. A. Kirkley.	Suppurating myoma.	Recovery.
18	" 31	Toledo.	28	Married.	Housewife.	Dr. C. A. Kirkley.	Ovarian cyst.	Recovery.
19	Nov. 7	Toledo.	22	Married.	Housewife.	Dr. S. W. Beckwith.	Large pyosalpinx.	Death.
20	" 20	Toledo.	50	Married.	Housewife.	Dr. W. C. Chapman.	Ovarian cyst.	Recovery.
21	" 28	Toledo.	34	Married.	Housewife.	Dr. G. A. Hollister.	Ovarian fibro-cyst.	Recovery.
22	" 29	Asheville, N. C.	42	Married.	Housewife.	Dr. Karl von Ruck.	Pyosalpinx.	Recovery.
23	Dec. 26	Toledo.	29	Married.	Housewife.	Dr. C. A. Kirkley.	Pyosalpinx.	Recovery.

Case 3.—Came under Dr. Hixon's observation in December, 1892. She was then greatly emaciated and had been discharging pus per rectum for some time. Dr. Hixon at once recognized the condition of things, and advised immediate operation which was declined. When the patient came to Robinwood on May 4, 1893, her condition was anything but encouraging. She was extremely emaciated, abdomen tympanic, temperature 102, and pulse 120. She has had a miscarriage produced a year or more ago, and dated her illness from that time. The dangers of abdominal section were clearly stated to her but she readily consented to the operation. On opening the abdo-

men, adhesions were encountered in every direction and had to be separated with great care, owing to the danger of injury to surrounding structures. Owing to the disorganized condition of the parts within the pelvis, and the extent of the opening into the rectum, its closure was not attempted. The operation was not prolonged; there was very little hemorrhage and very little shock. The abscess contained three or four ounces of pus. Irrigation was thoroughly employed and drain tube inserted. There was slight secondary hemorrhage which soon ceased, but in the exhausted condition of the patient considerable prostration followed. Saline infusion was resorted to twice during the night with apparent temporary benefit. On the following day the condition had slightly improved, the patient expressing herself as feeling much better. The temperature never rose above 99 nor the pulse above 120, except immediately after the operation when the pulse was 160. Death occurred from exhaustion on the fifth day. This case forcibly teaches the danger in delay. Had she consented to an operation when urged by Dr. Hixon her life could, no doubt, have been saved.

Case 10—Was one of unusual interest. The patient was not at all emaciated, but a decided pallor and a countenance expressive of pain clearly told of her illness. She had not been free from pain and tenderness in the lower part of the abdomen for four years. When 15 years old, she had a slight show, the first and only time, followed by a seven months illness. At intervals of four weeks since that age, "cramps" have come on lasting two weeks unless relieved by something. There is constant leucorrhea, albuminous in character, and constant headache. The body of the uterus could not be felt at all though the cervix was normal, and a distinctly fluctuating mass could be felt in the cul-de-sac of Douglas. She had been treated constantly for a year and a half, mainly by galvanism, with a view as she said, of bringing on her menses, before she applied to Dr. Hollister who at once and very kindly referred her to me. The diagnosis was infantile uterus with diseased adnexæ—probably hemato-salpinx. Some kind of an operation had been done about a year ago—presumably divulsion. Abdominal section revealed hydrosalpinx and a broad ligament cyst as large as a goose egg. Whether appendages were naturally developed could not be told, as they were a degenerated mass on either side, as large as a small orange. The body of the uterus was no larger than the end of one's thumb, and about an inch in length. At the end of three months the patient removed to another State and up to that time there had been no return of pain.

Case 11.—Was under observation for about six months prior to operation. She was married in 1881, and stated that she had been pregnant twice a year for the last twelve years. The condition in which her appendages were found would make that statement, to say the least, improbable. The menses would be missed, she states, in the spring and again in the fall, at which times she would apply to so-called doctors who would insert "something" into the uterus, the menses soon after reappearing. She evidently considered herself pregnant at these times and deliberately and systematically had abortion produced. She was very frail, much emaciated and very anemic. She was never free from pain. The uterus was enlarged, movable and tender to the touch. The menses have always been regular; began when she was 16 years old; have been very profuse for the last four or five years, and attended with great suffering. She has had several attacks of pelvic peritonitis. Her ill health began about nine years ago, and for the last four or five years she has had "local treatment for womb trouble." Each tube and ovary contained at least an ounce of pus. Recovery was uninterrupted, the temperature never rising above 101 nor the pulse above 99.

Case 14—Presented some interesting features. The patient had been under the care of my friend, Dr. R. E. Jones, of Gomer, Ohio, who kindly referred her to me. She was the mother of one child now 14 years old. Though very much emaciated, she had not an unhealthy appearance. She had a goitre of considerable size which had given her no trouble for the last few years. There was slight edema in the left leg and foot. The abdomen was very much enlarged; dimensions as follows:

Largest circumference (at umbilicus) . . .	41	inches.
Ensiform cartilage to umbilicus	10.5	"
Umbilicus to symphysis pubis	12	"
Right, A. S. S. of ilium to umbilicus	11	"
Left, A. S. S. of ilium to umbilicus	11.5	"

The veins were enlarged; the lower part of the abdomen was hard and quite tender, and the upper part distinctly fluctuated. The uterine cavity measured 4.5 inches. The cervix was apparently flexed at the os internum and the os externum was patulous. The menses had been somewhat irregular during the last three years but always normal in quantity and began at the age of 13. Specific gravity of urine was 1.018, diminished in quantity and contained 5 per cent. albumen. Patient had never been seriously ill, though for the last seven or eight years her health had not been as good as usual. She first noticed the abdominal enlargement, which for the last three months has been very rapid, in December, 1892.

The operation was especially undertaken to relieve the patient of the large accumulation of fluid which was supposed to be ascitic. Instead, however, it was contained within a thin-walled cyst springing from the summit of the solid and degenerated mass within the lower part of the abdomen and pelvis; after careful examination of which, total extirpation was decided upon. The incision was extended from the umbilicus to within an inch of the os pubis. Dense adhesive bands were found in every direction, and enormous blood vessels were tied and divided as the work of removal progressed. Each ovary was fibrocystic, as large as a goose egg, and the tubes contained two to three ounces of serum, all of which were intimately connected with the degenerated uterus. The cyst springing from the top of the mass contained about two gallons of clear fluid (sixteen pounds). The lowest estimate of the solid mass removed was twenty-five pounds. A low estimate of the weight of the tumor would be forty pounds.

A description of the tumor may not be uninteresting: Springing by a pedicle as thick as a woman's wrist from the summit of the tumor near the origin of the cyst was a liver-sized, liver-colored, and liver-shaped fibrous mass—extending over the entire anterior surface of the tumor—which was first removed. A humorous assistant observed: "You have got her liver now." There then remained three distinct portions which were removed *en masse*. The central portion was the degenerated uterus, covered with nodules varying in size. Its degeneration extended

toward the right and left, forming equally large portions, thus presenting a central and two equally large lateral masses, and still all in one. The right mass was soft and the left hard. The tumor, as a whole, is an example of the cystic, fibro-cystic, fibrous, and edematous myoma; certainly unique in my experience.

An operative peculiarity is worthy of mention, and the excuse for its adoption was the collapsed condition of the patient, which made increased haste to complete the operation necessary, as she had already been under anesthesia three-quarters of an hour. The degeneration had almost obliterated the cervix, thus making abdominal fixation impracticable. Time was too precious to attempt the ideal method—total extirpation. The Staffordshire knot was therefore applied to the short supravaginal portion of the cervix. This may not have been in accord with good surgical principles and may have been unnecessary, as there was not the slightest hemorrhage from the stump. The value of a few minutes' time under such circumstances can hardly be overestimated. This defect in the technique gave me no little uneasiness afterwards.

The shock was terrible. Whisky was given hypodermatically every few minutes during the latter part of operation, and when put to bed she was given $\frac{1}{5}$ grain of strychnia and $\frac{1}{2}$ grain of morphia. She rallied well, however; the pulse varied from 116 to 130, and the temperature from 99 to 102 until the beginning of the fourth day, when she had a violent chill, the temperature rising to 105 immediately afterward and the pulse to 150. The abdominal incision was separated to the peritoneum, which having entirely united the abdomen was not reopened. Fluctuation could be distinctly felt in the cul-de-sac. The os was sufficiently patulous to admit a good-sized rubber drain tube which was passed through it into the pelvic cavity. A free discharge of pus followed and in four hours the temperature had fallen to 101 and the pulse to 130. From this time on, recovery was uninterrupted, and she left the Hospital in five weeks after the operation in excellent condition.

This desperate case points out the propriety of at least explorative operation in such cases, and the possibilities of abdominal surgery, though it is doubtful if even an exploration would have been made in this case had not the patient's sufferings been so great from the accumulated fluid.

Case 17.—Came under observation Sept. 27, 1893. She was markedly septic and had had two profuse uterine hemorrhages within the last two months. The lower part of the abdomen was slightly enlarged, produced by the enlarged, tender and movable uterus. The patient had never been pregnant. The menses had been irregular for the last seven months, with dysmenorrhea, and a purulent offensive leucorrhea had been constantly present. Irregular chills had annoyed her for the last few weeks. Pulse 90, temperature 100. The first sign of ill health was about a year ago, when she discovered a "lump" in her abdomen on the right side and very low down. The striking symptoms were chills followed by fever; extreme pallor and emaciation; pain, tenderness, hemorrhage and an offensive purulent leucorrhea.

Hysterectomy was performed Oct. 3, 1893. The cervix made a good pedicle, and was therefore secured in the lower angle of the incision. The anterior and right lateral wall of the tumor was a suppurating mass, and its estimated weight was four pounds. The highest temperature reached was 103 on the second day. Recovery uneventful.

Case 19.—Came under observation Oct. 31, 1893. Dark complexion, very anemic, considerably emaciated, never pregnant. More or less fever for last two months; normal temperature at this time; the abdomen was about as large as it would have been had she been five months pregnant. The uterus was situated low down in the pelvis, fixed and three and one-half inches deep. The cervix was slightly hypertrophied. The menses reappeared regularly, have been profuse the last three months, amounting to severe hemorrhage, succeeded by an offensive purulent leucorrhea. There was constant pain and tenderness in the lower part of the abdomen on the right side. The abdominal enlargement was symmetrical. The clinical history, confirmed by the physical signs, would seem to indicate that a suppurating myoma was probably the pathologic condition. On opening the abdomen, the large, red and fluctuating tumor was exposed. A trochar was thrust into it, and more than two quarts of pus drawn off. The sac consisting mainly of the right tube and degenerated ovary were enucleated from their bed within the pelvis and ligated off. The left ovary was as large as a hen's egg, and undergoing cystic degeneration. The pus tumor enveloped the fundus and body of the uterus in such a way as to completely fix that organ. The pelvic cavity also contained a parovarian cyst as large as a hen's egg. The symmetrically enlarged and hard abdomen, the fixed uterus and the hemorrhage were the misleading symptoms. Not the slightest fluctuation could be detected before opening the abdomen. Death occurred on the fifth day from septic peritonitis, the infection, no doubt, occurring during the operation, though the irrigation was thorough and though not more than half a drachm of pus escaped within the pelvic cavity.

My acknowledgments are especially due Drs. Collamore and Van Pelt who have so kindly assisted me in most of these operations, also Drs. Reed, Chapman, Tracy, Hollister, Donnelly, Bodman, Gardner, Cherry and Craver. To the gentlemen who have so kindly referred cases to Robinwood Hospital for treatment, I extend my sincere thanks. Without their friendly support much less would have been accomplished.

MIND A PRODUCT OF BRAIN ENERGY.

BY CHARLES J. LEWIS, M.D.
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"What distinguishes the practice of the medical profession, in treating the diseases and repairing the injuries of the *genus homo*, from that of the veterinarian? It is the *worth* of man, he being a rational being, the other being an animal destitute of reason. I would further define the mind as the superintending, the guiding power of corporeal manifestations; it directs all the movements of the body, over which it has complete control; it is to the body what the engineer is to the steam engine, the body being but a mere machine suited to develop the operations of the mind, and preserved and kept in order by the organic functions."

The above question, with its answer in two parts,

is from an article by Dr. John M. Farrington, in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION of March 31, 1894.

Herein, the Doctor utters words to the effect that members of the *genus homo* are intellectually superior to members of the *genus equus*. This is freely admitted to be a statement of facts in the case as to their differences in intelligence *now*. But is he sure, as he says in the body of this long article, that the difference is due to man's brain possessing an inherent power to employ the senses to form ideas, in a manner more advantageous than would the same organs, other means being equal, in the horse? We have evidence that the horse "remembers, combines and reasons."

Let us go back into pre-historic times. In those dull, dim days man and horse, we will assume, were inhabitants of the same fauna. We will also assume though, that man had slightly the larger brain, but that his organism in none of its parts was better adapted for making a record of his experiences—such as naming things, recording sentiments and the like, than was the organism of the horse. Although a larger brain is granted to man, if he could not make a better use of it for perfecting devices for recording his solved problems—wrought-out facts—than was possible for the horse, it is at once apparent that both man and horse would travel down the ages shoulder to shoulder at the same rate of speed, in the acquirement of knowledge.

Man, with a hand armed with thumb and fingers, can make a *record* of his ideas which can be more easily deciphered and appropriated as personal experiences, than could be any *new experiences* by those who succeed him. New experiences require many verifications before admittance into the realm of facts. The horse not having such a limb-instrument as the hand, was and still is incapable of making a record which will be interpretable after the death of the individual experiencing. Thus each oncoming generation of the horse species makes the same round after round of experiences, without an appreciable advancement, simply because their ancestors left no intelligently recorded heritage, either in the description of their enforced slavedom under man or of a stock of useful knowledge. The trust the horse hands down to its succeeding generations we herein show to be exceeding small, thin and easily rusted-out of tradition's memory. Not any smaller, thinner nor more easily rusted-out heritage, however, than would be the trust of a *handless, toeless, and a recordless humanity*. This points to another rendering of the following by the Doctor: "That there is a union of the mind with the body, and he who ignores the mind of man in treating his diseases may well be classed with the veterinarian."

The second part of the answer, "that the mind is to the body, what the engineer is to the steam engine," we are hardly prepared to hear as coming from a member of the medical profession of to-day. However, since I am not hitherto responsible for the medical training of any member of my chosen profession, I cheerfully grant the widest scope of opinion. If a living human being is identical with a dead steam engine which can not modify its output of force, then a comparison between the two is permissible. If not, then not. A steam engine is constructed in such a manner that when a part is worn out, it can be replaced by a new one. But can a hopelessly cirrhosed liver, or an opaque cornea, or a single ganglion-cell in that part of the cerebral cortex known as the granular formation of Meynert, after having lost their function be restored to usefulness again? To this there can be but one answer. The difference, then, between a machine and an organism, lies in the fact that the latter can modify or wholly inhibit an action stimulated by a sensation. But when the steam in the steam-chest of an engine receives an impression from the engineer, it has but one thing to do, namely, to move the piston which turns the drive wheel. It has no choice; it can not assume the position—I may or I may not move the piston. From this we learn that there is nothing gained by comparing things that are clearly dissimilar in their make-up and uses.

All human thought points to the fact that non-living matter yields a different expression from matter which is alive. From this we have accustomed ourselves to declare that there is a difference in the make-up and uses of the two kinds of matter, whether this is so in their ultimate constituent parts or not. To strengthen this diverging view, we need but consult modern biology. H. J. Campbell (1892), makes the statement that the embryonic cells of a fertilized ovum coalesce into three layers; the epiblast (external layer), hypoblast (internal layer), and mesoblast (middle layer). These membranes continuing to develop from food sources, finally enlarge so as to form all the complicated structure of an adult.

Without enumerating them, we will assume that the tissues having their origin in the mesoblast and hypoblast will be coördinate in development with those from the epiblast.

The embryonic membrane—the epiblast—is the outer of the three layers. It is also called ectoderm, and neuro-epithelial layer. This layer is of special interest to the physiologic psychologist, in that from it is developed the nervous and some other tissues of the body. And there is another point of interest connected with this tissue, in the relation which it holds to the others, as one of its names indicates—namely, neuro-epithelium. By this we see that the outside of the body—the epidermis—is formed from this layer, making thereby for the outside of the body a membrane which has its rise in common with the nervous tissue. Hereby the body has sensory tissue overlying its entire outside, fitting it for sensiug environing motions from any possible direction.

There is something remarkable in the statement that the epidermis which covers the body is of the epiblast. Not in the fact of this fact; but in the failure of psychologists hitherto, to fully comprehend the advantages accruing to the animal organism therefrom. In the oncoming of animal life, sensibility made its first appearance in the skin as a special sense. Now by adding to this a clothing—*epithelium*—derived from a tissue in common with the nervous system, every spot of the outside of the body becomes a living sentinel to give information of impingement by environing objects. When these would portend harm, the organism could choose between contending with them and fleeing to a place of safety; or, if pleasurable, it could remain in quiet and enjoy them.

The bodies of all living beings are cellular, and divided into two chief classes—the protozoa and metazoa. An amœba is a single-celled animal, and of the protozoa, while man is of many cells—metazoa.

After we have observed and named every cell and every cell colony in the human embryo, and having become conversant with the action of these protoplasmic bodies in the adult, whether singly as in the protozoa, or in a colony as in the human eye, then, and not until then, will we be able to divest ourselves of the training we have had in mythological lore. A part of this lore is the very prevalent notion that mind, at least in part, has some mysterious origin other than products of vibratory or molecular motions proceeding from the five end-organs into the brain. I do not deprecate the efforts that men have made in the past, but shall simply aim at bringing into view the methods of the past, and contrast them with those of the present.

As to voice: Voice is a sound symbol produced by the organs of speech, interpretable by the center for hearing. The noises made by mammals lower than man by their vocal organs are not regarded by man as speech, on the ground of not being comprehended by him as uttered symbols of ideas. The vocal organs in man and all mammals are essentially the same, while the expression of speech is dependent upon the process of ideation and perception.

The making of these *uttered* symbols of ideas, comprehendable by the visual center of the cerebral cortex, has been effected by a system of graphic characters called letters. Presumably, man's first record of an idea was through depicting the object it represented by some such crude procedure as marking its form with a rod in the sands of the seashore. The stimulus to this might have been the beholding of one's image in the still water near by. But what could be the stimulus which ultimated in representing a sound by a symbol, such for instance as a letter of the alphabet? The *comprehension* of this momentous act marked the initial point of advancement which secured for man an advantage in the race for the acquisition of power over all others of the animal kingdom. Possibly the stimulus might have been a struggle between two individuals of different clans who, though having different languages, nevertheless attempted to understand each other's speech. One being resourceful, attempted to make known to the other his ideas by marking in sand or dust, or some impressionable surface which chanced to be at hand, a picture of some object which might be familiar to both.

Upon comprehending that sounds which were cognizable by the center of hearing could be represented by names recognizable by the center of vision, nothing could be more obvious than that out of man's natural curiosity a few individuals in each generation would become devoted to the work of correcting, improving and enlarging the processes of making an intelligent record of speech. To this end, man soon discovered that his hands were very important factors.

The monkeys—quadrumana—though *four*-handed, have not as yet, awakened to their potentialities in the direction of using their fore-limbs for making a record of ideas which were understandable by succeeding generations. Owing to this, their ideas are few and necessarily of the simplest character. After one of the Simian tribes has obtained only a faintly comprehended notion that he could represent a speech-symbol in such a manner as to have it typify, as though made for the eye, presently others would become associated with him in its development, and the process thus inaugurated would be a substantial beginning of an era of progress. Why it is that some individual of the quadrumana has not taken this initial step of advancement, as well as man, I leave for the future to answer.

For obvious reasons much of the acumen of our forefathers was expended in the direction of establishing language; that is, in forming or agreeing upon words or names for the various objects which cast reflection upon their sense-organs. The five senses are also called end-organs.

Owing to the undeveloped state of the art of making a record of names of things observed in earlier times, success in this direction did not come before printing was invented. This made it possible for the dissemination among the people of all names agreed upon. This stimulated the scholars everywhere to a more constant and systematized effort to collate all fact-words known, and this in turn brought into existence a class of experienced workers in collating fact-words into groups or special departments of science. Among these I might mention mathematics, logic and more recently, the physiology of the brain. Many words, among them sun, moon, stars, day, night, water, man, animal, became permanent through tradition. But for all newly coined words tradition was a very tedious method of giving them permanency. Among objects or supposed objects having names given them in early times, I might mention alchemy, necromancy, witchcraft, soul, spirit, God, mind. This class of words are aptly said to belong to a class of objects which is supposititious when viewed in their commonly supposed meaning. And rightly, too, for it is undetermined, even in our time, whether any reflected motion passes from them to form by impingement an image upon any one of our five end-organs. This fully accounts for the vague and varied opinions held concerning their import.

As stated above, since we now have a quick means —the press—of disseminating the names of things, there has arisen among us a widespread desire to memorize them, *i. e.*, to increase our knowledge. Students find that they are aided very materially in obtaining more knowledge of things but partially understood, by asking questions and by comparing the new answers with the old.

A, B and C, are persons conversing. A asks B what mind is. B replies that "the hand does not feel, the tongue does not taste, nor the eye see, but the mind through the medium of the organs and the brain feels, tastes and sees." Turning to C, he asks the same question, and C answering, says: "Mind is the sum total of one's comprehended impressions." In B's answer we have an affirmation that mind is an entity—has an independent existence of its own, and that the end-organs and brain are only incidental and very unimportant appurtenances. While C declares that mind has arisen in its totality from sense-impressions that have gone to the cerebral cortex and by it cerebrated into ideas which are comprehended. To comprehend a thing is to differentiate it from all other things. Can B be sure that he has differentiated mind from sense-organ and brain? Unless he is certain that he has so differentiated, obviously he is affirming without knowledge.

C demands a hearing for his statement on the ground of the preposterousness of having mind in a being that was devoid from birth of even a faintest trace of either of the five senses, thus making it im-

possible for it to experience a single sensation. That is, that it could neither smell, taste, hear, see nor feel. Manifestly, a being of this simple description would be less complex than the sensitive plant. Yea! it would be a *no-sense* being. Having no organs to sense wave-motions reflected from objects, what the premise for affirming that such an organism can give forth expressions that are indisputably sequences of ideation?

These statements permit the declaration, that we have ground for an enduring hope in the progressive character of humanitarianism, as expressed by those who maintain that the raw material out of which ideas are made are the *motion-things* we call sense-impressions. And further, that this unitary font of human intellection, has already been placed upon a permanent basis. Nevertheless, the student-teacher should ever evince a hearty zeal in teaching his pupils, among other things, that the senses of taste and touch are stimulated only by objects in actual contact, while the senses of smell, of sight and hearing are exercised only by reflections from objects that are always out of impact; *i.e.*, at a distance. Herein Ziehen is right in saying that it is from sense-impressions that the brain can build up ideas, to which I will add, that it is from these ideas being regarded as a whole, we have what we are pleased to call mind.

The hope of the race is now, as heretofore, in the student who is ever on the alert and questions the position of state, of church and of philosophy, as to their individual worth; if either makes for an enlarged personal freedom it shall be fostered; but if either shall be found to retard personal advancement, it, through neglect shall be permitted to enter upon the period of senile atrophy.

The earth—man's home—is for the enlightened. Only they who are loyal to this spirit are destined to survive. They alone have in them the functional activities of organic life. A human being who pits his organic life against his spiritual, is an anomaly, and one or the other of these opposing forces will sooner or later yield to its unfitness.

The argus-eyed student is always conservative and patient, but ere long physiology's shrill voice will call upon the differentiators of things—builders of facts—to join their forces, and all the obstacles to human betterment growing out of the mythological aspect of mind, however formidable, will go down before the advance of an enlightened people.

Yes, mind *is* a product of brain energy.

Out of the myriad observations made by myself and others of sensations after having been modified by cerebral tissues, I have synthetized their ultimates into one sentence, namely,

Mind is the sum-total of one's comprehended impressions.

IMMEDIATE CAPSULOTOMY FOLLOWING THE REMOVAL OF CATARACT.

Read before the Medical Society of the State of Pennsylvania, May 17, 1894.

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All ophthalmic surgeons endeavor to obtain perfect vision after the removal of a cataract. On account of its prevalence, the loss of one of the most valued of the senses, and the restoration to vision by a bloodless and painless operation have concurred to render this operation an object of the highest attention to surgeons; and the progress of improvement in the operation has been commensurate with the advances made in surgery elsewhere in the economy. Unfortunately, with all our skill and knowledge, success does not always follow the removal of an opaque lens. The many contingencies incident to the healing of the wound, the distortion of the cornea, the subsequent change in the media caused by iritis, or a thickening of the posterior capsule—one or all of these factors play a very important rôle in the subsequent restoration to vision.

The opaque lens, with its capsule, obstructs the vision, causing blindness of the patient. To remove this obstruction requires considerable dexterity; to restore vision, absolute cleanliness and most careful after treatment. The most disheartening factor in a cataract operation is that sooner or later the posterior capsule thickens, and again dimness of vision follows; the lessening of the sight is not so great as it was before the removal of the lens, but still the patient is debarred the comfort of reading, writing, or attending to business matters in which it is necessary to have perfect vision. It is to prevent this latter change that I advocate the splitting or parting of the posterior capsule at the time of the primal operation.

Having had the opportunity of following many operators, good, bad and indifferent, and noting the after results, I frequently saw excellent vision follow bungling manipulation. The surgeons did not possess that delicate sense of touch so essential in making the corneal incision, snipping the iris, lacerating the anterior capsule, and delivering the lens. They lost courage, or their hand became so tremulous after they had ruptured the capsule that the operation would have been a failure had they not taken a lens scoop in hand, entered the eye, and fished out the cataract and its capsule, with always more or less loss of vitreous. With very great care in the after-treatment many of these patients would recover, and in the majority of cases which did recover no capsule interfered with their visual acuity. It was witnessing such operations that led me to think that a parallel process carried out, however, on more delicate operative lines, at the time of the primary operation, would still lessen the dangers that such harsh measures would be sure to excite.

The ancient method of removing cataracts from the direct line of vision was by *couching;* that is, passing a delicate needle through the sclerotic coat on the temporal side of the eye-ball, posterior to the ciliary bodies; pressing it forward and into the crystalline lens. Then, by a backward sweep of the point of the needle, lens and capsule were torn from their position, and deposited down and out in the vitreous chamber. Celsus, the celebrated Roman physician, who lived at or about the commencement of the Christian era, describes, and is generally esteemed the father of this operation. It was not very satisfactory in its results, according to the data obtainable from the earlier writers. Fabricius, who flourished in 1600, speaks with great despondency of this operation; later on, Hiester, 1711 says: "Though the operation is easy to be performed, the success is so very precarious that among a great number of persons, couched by the most distinguished oculists, very few met with the desired

results; and upon the vast number of patients upon whom the celebrated itinerant Taylor operated, not one in a hundred recovered his sight." He further says that in several different places he saw many miserable objects in tormenting pain, arising from inflammation consequent upon the operation, and that of those who regained their vision, there was scarcely one in ten who did not sooner or later lose it again. For eighteen hundred years this puncturing of the eye-ball, with its most deplorable results, was the only method held out to the blind. It was the outgrowth of an accident which gave birth to the rival plan of extracting the opaque lens through an incision of the transparent cornea. It was the failure to remove a cataract which had escaped into the anterior chamber by couching, that led M. Mery to recommend, in the year 1707, the practice of extraction in all other cases of this disease. It was left, however, for Daviel, the celebrated surgeon of Paris, 1745, to bring forward this method as one infinitely less dangerous than couching. From that day to this the incision is made through the cornea, or along its margin, and the percentage of loss is to-day what the gain of vision was one hundred and fifty years ago.

PRELIMINARY TREATMENT ESSENTIAL IN CATARACT OPERATIONS.

I deem it of the greatest importance to interrogate all cataract patients presenting themselves for an operation, as to their general habits and family history, and to make a careful examination of the urine, restricting meat diet and increasing a vegetable one; while last but not least, placing the patient, one week before the operation, on the mixed treatment, also paying particular attention to bathing both eyes with a boracic solution containing sulpho-carbolate of zinc; examining the eyelashes and particularly the nasal cavities. If any catarrhal affections are found in these cavities it is of paramount importance that they receive the proper treatment before an operation is performed. The day before the operation, the patient is given a warm bath and a saline purgative, kept in bed, and his face washed with Castile soap and water, then washing the skin around the eye to be operated upon with ether, following this again with a 1-5000 solution of corrosive sublimate after a German method (Schweigger).

The reason I call attention to these minute details is that the patient may suffer from some defect which would not affect an eye in a comparatively healthy state, but might exercise an extremely pernicious influence on the eye after the irritability following the operation. The effect to be dreaded is inflammation, and therefore every measure calculated to prevent its occurrence must be taken. There are still a few ophthalmic surgeons who think it quite unnecessary to take these preliminary precautions, but happily the number is growing less year by year.

At the time of the operation still greater precautions are taken; the patient's face, neck and mouth are thoroughly cleansed, clean underclothing, over which, and fitting close to the neck, a sterilized sheet is wrapped, head bandaged in a sterilized towel, and the eye irrigated with an aseptic fluid, as hot as the patient can bear it. The instruments are also sterilized; all fluids, such as atropin and cocain, are sterilized in a Llewellen flask. The operation is performed then in the usual manner.

After the delivery of the lens (cataract) and all cortical matter is washed out of the anterior chamber, I proceed with the rupturing of the posterior capsule, —the subject of my paper. The instrument used is a gold enameled hook, made as delicately as is consistent with keeping its shape. It is of malleable steel, so that it may be bent to any angle which I find is convenient, especially when the eye of the patient lies deep in the orbit. The hook is passed into the anterior chamber, and behind the lower pupillary margin of the iris, on its flat side. It is then rotated backward, hooked into the capsule, drawn gently upward to the mouth of the incision, rotated on its flat side again, and then taken out of the chamber. By this means, the capsule is torn and the vitreous presses forward between the rent. Very little or no vitreous shows at the mouth of the wound. If it does, I snip it off.

When the operation is performed after the simple method (without iridectomy), the same manipulation is carried on with but one exception; and that is, the line of incision is not so long. The ophthalmostat is removed, and the eye-ball again irrigated with the hydrostatic eye-douche, followed by dropping one drop of sterilized atropia solution into the eye; the lids closed and thickly anointed with vaselin, which has been sterilized by boiling; over this specially devised eye-pads, which have also been sterilized by heat, held in place by adhesive strips, which keep the bandages securely fixed, permitting the patient to change his position in bed as often as is desirable. In twenty-four hours the dressings are removed, and both eyes bathed with warm water and irrigated with the sulpho-carbolate solution, another drop of atropia applied, and similar eye-pads adjusted with as much care as at the primal operation; and so continued from day to day until the eye is out of danger.

Is this a new operation? Some of the older writers of fifty years ago hint at the removal of the lens and its capsule, but they are not explicit enough to say that they did so. The only authority that I can find saying so positively, is Richard Middlemore, who, on page 138, Vol. ii, in his great work on "Diseases of the Eye," published in 1835, after speaking of the removal of the lens, when the pupil is not clear, on account of the thickening of the posterior capsule or the hyaloid membrane, says: "In every such instance, I have found it absolutely essential to the successful result of the case, to lacerate the posterior capsule and hyaloid membrane, and permit the escape of a portion of the vitreous humor." Coming nearer to our own day, I must say a few words about the distinguished surgeon who left his impress upon all who witnessed his wonderful skill as an operator. I have reference to the late Dr. Richard J. Levis, of this city. I have had the opportunity of examining quite a number of patients from whom cataracts were removed by this eminent surgeon. In nearly every instance the posterior capsule was evidently ruptured at the time of the primal operation. Whether this was a constant practice of Dr. Levis' I am unable to say, but I am sure he realized the importance of removing the posterior capsule at the time of the original operation. Pagenstecher, of Wiesbaden, is also an advocate of removing the lens and its capsule at one sitting. Hasner, another German ophthalmologist, is an advocate of this radical operation. It has recently come to me indirectly that Dr. Knapp,

of New York, is also lacerating the posterior capsule at the first operation.

Is the operation always successful? Laceration of the capsule alone does not prevent the hyaloid membrane from becoming slightly translucent. When this takes place, we may follow with a needle operation, and not provoke cyclitis by trying to tear a tough inelastic tissue.

I have been in the habit of performing this operation in alternating cases, for ten years. In those patients upon whom the operation was performed, I had to repeat a needle or capsulotomy (scissors) in about 15 per cent. of the cases; where it was not performed, in about 75 per cent. In the 15 per cent. of the cases where it did not succeed, I can only attribute it to a very thick posterior capsule, the vitreous receding after closing of the eye-ball, and thereby not keeping the capsule separated, but practically closing again. My experience has led me to believe that there is less danger of inflammation of the eye-ball in immediate capsulotomy, than in a subsequent operation.

The elder operators recognized the gravity of puncturing an eye-ball with a needle, and hailed with delight the improved method which completely revolutionized statistics. My own experience is fast leading me to adopt the cutting the cornea with a keratome and the incision of the capsule with a De Wecker's scissors, disregarding the needle altogether. With the preliminary treatment, and with the aseptic methods now employed, success is almost always assured, while with the treacherous needle almost every surgeon has had occasion to regret his *modus operandi* in more ways than one.

GASTRO-HYSTEROPEXY AS A SAFE AND RELIABLE MEANS OF CORRECTING PROLAPSUS AND RETRO-DISPLACEMENTS OF THE UTERUS.

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By far the most frequent displacements to which the uterus is liable are the downward and backward, namely, the various degrees of prolapsus, retroversion and retroflexion. But few if any troubles in the entire field of gynecology impose more of suffering and misery than is entailed by the inflammatory consequences of these affections. The reflex disturbances and the general ill-health that usually follow often lead to melancholia, hysteria, and even more pronounced insanity. In many instances the physical health is wrecked, and the functions of the various systems of the body are so perverted as to lead to a condition of general impairment of nutrition, which predisposes to the activity of any inherited tendency to disease.

I should like to emphasize the significance of the phrase, "inflammatory consequences," in this connection; for it is to these that symptoms are chiefly due; for example, pelvic peritonitis, with adhesions binding the uterus, ovaries, Fallopian tubes and sometimes the bladder in unnatural positions; ovaritis and salpingitis terminating in cystic or pus formations; endometritis, cystitis, chronic constipation, etc. I am aware that these conditions sometimes predispose to or bring about the displacements in question, but I am satisfied that in very many instances they stand in the relation of cause rather than of effect; and I am convinced from ante-mortem observations that the generally accepted idea that pelvic peritonitis with its train of evils is almost uniformly due to salpingitis incident to endometritis, is an error; that in reality its most frequent cause, apart from post-partum sepsis, is the pressure and consequent disturbed circulation, friction, etc., of the retroposed uterus.

I shall not presume, before this intelligent audience, to make anything like a systematic and complete presentation of the history, etiology, symptoms, physical signs and treatment of these affections; such an exposition would be appropriate before a class of students, or adapted to the ends of a text-book. The purpose that I have in view in presenting this paper is to emphasize a pathologic and etiologic condition shared by all of these affections in their initial departure, from which proceeds a common and major principle of treatment. However, the fact should not be lost sight of that the individual affections call for special means in addition to the principle of treatment common to them all.

In order that I may make myself understood, it will be necessary that I recall to your attention the fact that in the erect posture the pelvis is placed so obliquely with reference to the trunk that the axis of its inlet is represented by a line drawn from the umbilicus to the middle of the coccyx. Now, as you know, the axis of the uterus corresponds with that of the pelvic inlet; hence the normal position of the uterus is such that the force of intra-abdominal pressure, which is perpendicular, falls upon its posterior surface, and operates not only from above but from behind. Temporary departures from this relation of the position of the uterus and the direction of intra-abdominal pressure are constantly occurring, but they are only temporary and therefore physiologic.

Any permanent deviation from their nominal relation becomes at once the prominent determining etiologic factor in the production of either a prolapsus, a retroversion or a retroflexion, and the particular displacement is determined by the condition or state of integrity possessed by the suspensory supports, namely, the long, the broad and the utero-sacral ligaments, together with the restraining supports or pelvic floor.

Now it can be appreciated that however prominent a part may be played by a breach in the pelvic floor, or by impaired suspensory supports, in predisposing to and determining the character of the displacement, yet the salient fact remains that they are but contributory agencies in their accomplishment; they determine the direction of retreat of the uterus from the cause operating above, namely, intra-abdominal pressure. For example, if of the suspensory supports the round ligaments be alone principally elongated, and the walls of the uterus not wanting in tonicity, we will have retroversion. If to a similar state of the suspensory supports be superadded a flabby condition of the uterine walls then we will have retroversion plus retroflexion. If the round, the broad and the utero-sacral ligaments be elongated, and the integrity of the pelvic floor is wanting we will have prolapsus.

It will be perceived that under normal circum-

stances the force of intra-abdominal pressure, falling upon the posterior surface of the uterus, acts as an agent in maintaining the proper position of the uterus by forcing it in a direction in which descent is physically impossible; but under other circumstances it becomes the essential displacing factor. The round ligaments might be elongated, but if in spite of this circumstance the uterus did not become retroposed so as to permit other than its posterior surface to receive the force of intra-abdominal pressure, we should not have retroversion. If the walls of the uterus were ever so flabby they would not bend appreciably were it not for intra-abominal pressure. Were it not for the same pressure, lacerations of the pelvic floor would not result in loss of resiliency of the suspensory supports and consequent prolapsus.

Then the keystone in the arch of all these affections is found to be the same, viz., altered relation of the force of intra-abdominal pressure and that uterine surface to which it should be applied. The first step in prolapsus as respects the altered position of the uterus is a movement of the fundus backward, and the same is true of retroversion and of retroflexion; so that it must be apparent that defects in the uterine supports operate indirectly in accomplishing the displacements in question, and directly in determining their character. They permit a force which under normal circumstances serves to maintain the uterus in its proper position, to become the chief factor in the production of its displacement.

In dealing with aggravated cases of distortions, such as fall within the purpose of this paper, we have very largely lost sight of this, the central idea that should engage us in our methods of treatment. For, however we may seek to redress imperfections of the supports and repair lacerations of the pelvic floor, if we fall short of placing the uterus in such a position as respects intra-abdominal pressure as to cause it to cease to be an element in the production of displacement, we utterly fail to obtain satisfactory and enduring results; since it is only a question of time when the gathered up tissues of a colporrhaphy, perineorrhaphy, etc., will have yielded to the steadily continued, downward, intra-abdominal pressure. Experience has amply proven this observation, and the explanation of the fact is found in the circumstance that I have sought to make clear.

DIAGNOSIS.

To the end that treatment of these affections may be successful, it is a matter of prime and paramount importance that we should be able to make a reliable diagnosis. The gynecologist who is in the habit of proving his diagnosis through laparotomy work, if he uses the proper means and methods of physical exploration of the pelvic organs, will soon become so proficient that he can safely venture upon a positive diagnosis in fully 95 per cent. of his cases.

By method and means of investigation I mean that the patient, having been thoroughly anesthetized, must be placed in the dorsal position with the limbs well flexed upon the body, so as to cause the sacral curve to be brought well to the front, to the end that the axis of the pelvic cavity will conform as nearly as possible to that of the trunk. By this means the space between the fingers of the right hand that are in the vagina and rectum, and those of the left hand that are buried through the abdominal muscles above the symphysis, will be materially lessened, so that each organ of the pelvis can be clearly outlined, and its form, position, consistency and mobility be readily determined. I usually employ the index finger in the vagina and the middle finger in the rectum simultaneously. The greater amount of information is obtained through the rectum.

TREATMENT.

The retroversion pessary finds its useful application in those cases of retroversion and retroflexion in which the uterus is not bound down by peritoneal adhesions; in which the ovaries are not prolapsed, and as is often the case, incarcerated in the cul-de-sac of Douglas; and in those in which the displacement has not lasted so long that the round ligaments and other supports have lost all power of regaining their resiliency. In such cases, having first relieved complicating conditions, such as laceration of the cervix and tears of the perineum, we can by the patient and judicious use of the intra-vaginal or Smith-Hodge pessary accomplish much for the relief of our patients; and recognizing the fact that the displacements usually manifest themselves after parturition, it becomes the imperative duty of the obstetrician to make a careful physical exploration of the pelvic organs within eight or ten weeks after accouchement, with the view to correct, in the manner indicated, any altered position of the uterus that may be discovered. For at that period the displacement, as a rule, has not produced inflammatory results which would negative the use of the pessary; since such cases generally remain uncomplicated for a variable period of time, often months, save possibly by the results of subinvolution.

The conditions and results of treatment are far different when the displaced organ or associated pathologic state has produced pelvic peritonitis, the adhesive products of which have fastened the uterus, and possibly the ovaries, in varying relations to each other in the cul-de-sac of Douglas with possibly suppurative results; so also are they different when the suspensory supports, from long-continued traction, have become so attenuated as to be practically paralyzed. Just as we are able to destroy the tendency of rubber to contract by overstretching, so likewise do the suspensory supports lose their function.

Prolapsus in the first degree can usually be corrected by the use of the pessary, after complicating conditions have been relieved, such as hypertrophy, elongation or lacerations of the cervix, or tears of the pelvic floor; but let the case become once well established, as is represented in the remaining degrees of prolapsus, and we have a condition of things represented by stretched and paralyzed suspensory supports; the cellular tissue is without elasticity; the muscles of the pelvic floor, if not torn, are atrophied and often have undergone fatty degeneration. Under such circumstances, with the conditions recounted it is idle, nay more, it is foolish, to expect anything like complete and satisfactory results from the methods of treatment usually pursued.

In the case of the adherent retroposed uterus, pessaries are inapplicable and forcible breaking up of the adhesions after the method of Schultz, through the uterine cavity, is dangerous and often ineffectual; in fact, all attempts to replace or otherwise interfere with a uterus that is bound down in its displaced

position by adhesions, other than through intra-abdominal procedure, are dangerous and to be condemned, for the reason that absolutely accurate knowledge of the pathologic conditions can not always be ascertained, and in consequence we may unconsciously compromise the life of a patient by causing the contents of a pus sac to be liberated into the peritoneal cavity; and further, it is a blind procedure, lacking all the elements of precision necessary to reliable and good ends. Here it is that a method of treatment presents itself which, in the hands of the clean and skilled surgeon, is both safe and efficient. I allude to hysteropexy, which, as you know, means literally a fixing of the uterus, and is applied to those procedures that have for their purpose the maintenance of the fundus of the uterus in connection with the anterior abdominal wall.

The methods of practicing hysteropexy pursued by operators thus far differ in many particulars; the operation has been practiced scarcely long enough to enable us to decide positively which is the most desirable method, and yet long enough to permit us to pronounce quite confidently upon its worth. Through it, in a sure and reliable manner, we place the uterus so that its posterior surface is opposed to intra-abdominal pressure, which, as previously stated, acts from above and behind in such a manner as to assist in maintaining the proper position of the uterus. We thus supply the keystone to the arch of uterine retention, without which in no uniformly reliable manner can the damaged pillars of support be made adequate to their requirements. It is astonishing how small a measure of force is necessary to keep the uterus antiposed when anchored ever so slenderly in its proper place.

Hysteropexy.—The general precautions pertaining to a celiotomy having been observed, the opening through the abdominal wall is made as low down as practicable, and no larger than necessary to admit of efficient and expeditious work. The patient is placed in Trendelenberg's position, by means of which the pelvis is freed of the confusing presence of intestines and omentum, and they are spared the injury of unnecessary manipulation. The walls of the incision are held outward and apart to admit of as free inspection of the pelvic organs as possible. Parenthetically I will say that the advantages in this direction are very great in subjects with thin abdominal walls, and the reverse in those heavily loaded with adipose tissue. Our manipulations in the abdomen are also facilitated and retarded by these conditions. By means of inspection and the sense of touch, accurate knowledge of the conditions and relations of the pelvic structures is obtained. If adhesions exist, they are broken up by means of the index and middle fingers; the ovaries and Fallopian tubes are brought up to the abdominal opening and carefully inspected, and if found to be seriously diseased they are removed, otherwise not. Small ovarian cysts are treated by clipping off a portion of the cyst wall. The fact that the organs are found adherent is not in itself sufficient justification for their removal. Next, the uterus having been lifted to the front is seized through its fundus with a double tenaculum and held by an assistant in such relation to the abdominal wound that the operator can readily pass a curved needle threaded with a heavy chromicized catgut suture through all the tissues of the abdominal wall except the skin, embracing sufficient of them to secure a firm hold, then through the anterior and upper portions of the fundus and out similarly through the abdominal wall at the opposite side of the incision. The tenaculum is now removed and the assistant takes the catgut suture in its stead. The abdominal wound is then closed by interrupted sutures in the usual manner, with this difference: That the catgut suture that has transfixed the uterus is tied before, but not until the abdominal suture in closest relation to it has been drawn upon, so as to approximate the peritoneal surfaces. The tying of this last abdominal suture draws the skin over the catgut suture and thus buries it. This has been my method of operation, and the results have been uniformly good. In not a single instance has the uterus failed to remain in the position in which it was placed, and the outcome so far as the restoration of the general health is concerned has been all that could be expected, and in many instances singularly excellent. It has been the custom of some operators to abrade the anterior surface of the uterus, with the view of producing extensive peritoneal adhesions; of others, to transfix the uterus with many sutures, and pass the same through all the structures of the abdominal wall, using as a rule silkworm gut. I think that a larger experience will demonstrate that such extra precautions are unnecessary.

It may be asked by some one, Why not do Alexander's operation for the relief of these affections? The fact of the matter is that Alexander's operation has a very limited field of utility; it is entirely inapplicable to cases of adherent uteri, or where the adnexæ are diseased. It will accomplish scarcely more than a properly adjusted pessary when the round ligaments have not become permanently paralyzed; it will accomplish nothing when they have become so, for they are then merely greatly attenuated cords often very difficult to find. The element of danger as respects hysteropexy is great or almost *nil*, according as the operator is wanting in proper antiseptic precautions and pathologic knowledge, or the reverse. In the one case the patients usually die very promptly; in the other, they are scarcely conscious of discomfort after the expiration of the twenty-four hours following the operation.

The query may come to you, What will be the result in the event of pregnancy following hysteropexy? Our experience in this respect has been limited, but not altogether untoward. I believe that the use of a suture such as catgut, that undergoes absorption, will be conducive to good results in this direction.

REPORTS OF CASES.

During the year just passed, very few weeks have elapsed that I have not practiced hysteropexy in one or more cases, in connection usually with other surgical procedures; for such cases as call for this operation are usually complicated. So far I have had no deaths, and as yet the uterus remains as placed in every case. It is true that the length of time that has passed is not very great, yet it is more than sufficient for the institution of the initial steps of displacement, the absence of which, together with the results to other operators, justify a sense of assurance as to the ultimate outcome. I will not tax your patience by imposing upon you numerous and extended reports of cases. I shall merely ask your attention to such as exemplify a principle of treatment:

The first case that I will report is that of Mrs. F., aged 32

years, married, the mother of four children; ill health dates from a confinement five years previous to the time of consulting me in the early part of September, 1893. Her general health was horribly impaired; weight 105 pounds; suffering more or less all the time; utterly incapacitated for any duty. Physical exploration revealed an irregular mass in the cul-de-sac. Diagnosis: Retroflexed and adherent uterus, in connection with prolapsed, adherent and suppurating ovaries. Operation on Sept. 27, 1893: Adhesions broken up with great difficulty. Material assistance to this end was rendered by Dr. B. M. Hypes who elevated the parts by pushing with his fingers in the posterior fornix of the vagina. Ovaries and tubes removed and the uterus fastened to the anterior abdominal wall after the manner previously described. Patient made a good and prompt recovery. Weight now 137 pounds, ruddy complexion, magnificent spirits. Examination of the uterus made a short time since finds it in normal position, all pelvic induration gone, and seemingly the usual degree of mobility of the parts.

Case 2.—As illustrative of the conservative possibilities from hysteropexy, I report the following: Mrs. G., aged 27, married, the mother of three children, consulted me on Feb. 1, 1894; general health greatly impaired, dating from last confinement two years previous. Diagnosis: Uterus retroverted and bound down by adhesions; ovaries cystic, prolapsed and adherent. Operation on Feb. 19, 1894. Adhesions broken up, one ovary removed, uterus approximated to the anterior abdominal wall as before. Prompt recovery. Uterus in proper position at the present time. General health completely restored.

Case 3.—Multiple operations at one sitting. Mrs. L., aged 31, married, one child; ill-health dates from its birth about three years. General health greatly impaired; suffering constantly with pain in the back, down the limbs and a sense of downward pressure in the pelvis. Diagnosis: Laceration of the perineum, laceration of the cervix, prolapsus of the uterus and cystic ovaries. Chloroformed March 12, 1894, at which time was performed a double trachelorrhaphy, a perineorrhaphy, also one ovary was removed, the other treated by snipping off a portion of the cyst walls, and the uterus approximated to the abdominal wall in the usual manner. Length of time under the anesthetic less than one hour. Her recovery has been uninterrupted. The uterus at the present writing remains as adjusted.

Case 4.—Mrs. W., aged 38, mother of four children; fleshy; complains of constant pain in the region of the sacrum, very nervous and frequently melancholic. Diagnosis: Retroflexed and adherent uterus, ovaries prolapsed and adherent in the cul-de-sac under the uterus. Operation Feb. 23, 1894. Adhesions broken up, structures removed and uterus approximated as in other cases. Result, recovery. A recent examination of the patient reveals the parts in good condition and mobility measurably restored. The ovaries did not prolapse after the uterus was brought to the front.

Case 5.—Mrs. R., aged 39, mother of three children, consulted me in January, 1893; general health completely wrecked. Her features and expression were those of an old woman, shriveled by age; mental faculties so disturbed as to make her almost irresponsible most of the time; decidedly melancholic. Diagnosis: Retroflexed and adherent uterus, prolapsed and suppurating ovaries, also adherent; pachy-salpingitis. Operation Feb. 12, 1893. Adhesions broken up, diseased structures removed, and uterus fastened to the abdominal wall after the manner practiced by me. Result, complete recovery; general health, mentally and bodily, thoroughly restored. One who had seen the patient just prior to the operation would scarcely recognize her to-day as being the same person, for she is now the picture of health, having gained fully forty pounds of flesh. The uterus still remains in proper position.

It is my custom to curette the uterus almost invariably before performing hysteropexy for the reason that endometritis is generally an accompaniment of chronic displacement.

NICKEL STEEL FOR SURGICAL INSTRUMENTS.

BY EDMUND ANDREWS, M.D.
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Nickel steel has become famous the world over for its capacity to form an impenetrable ship armor.

It is an alloy of steel with about 3.2 per cent. of nickel. Its color and appearance are those of ordinary steel, but its qualities are remarkable. Its tensile strength is raised by the addition of the nickel to about 200,000 pounds per square inch, which is nearly as great as that of the best hardened steel, without any of its brittleness. On the contrary, it has extraordinary toughness, and resists cannon shot to a degree far beyond any armor plating before known.

The commander of the United States Arsenal in Springfield, Mass., informs me that he has tried to make rifle barrels of it, but he finds it almost impossible to turn it or bore it.

It seemed likely that qualities like this might be of use in certain surgical instruments. Having with much difficulty secured a piece of this steel, trimmed from the edge of an armor plate, I had it submitted to chemical and practical tests. The specimen had the following composition, in 1,000 parts: Steel, 996.747; nickel, 3.200. The carbon in the steel amounts to 0.031; phosphorus, 0.022.

To test its capacity to resist rust, I boiled a polished piece of it for twenty minutes in a sterilizer filled with hydrant water, along with instruments of ordinary steel. It resisted oxidation better than ordinary instruments, but there was not a complete exemption from that evil.

Mr. Degenhardt, a thoroughly experienced cutler and instrument maker, then took the metal in hand. He found it to possess immense tensile strength and stiffness, combined with remarkable toughness. A small cold bar could be bent short over upon itself without cracking. Drawn into fine wire, these qualities enabled him to make filiform bougies whose tips could be bent, without any danger of breaking, into any shape necessary to pass through a stricture. Excellent fine probes were made of the wire, which, though stiffer than silver probes of the same size, could be bent to any extent without breaking. I infer that the staff of Maisoneuve's stricture cutter could be made of it, with the advantage of having it decidedly more slender than the ordinary one, and therefore able to penetrate a smaller stricture, with a total exemption from any liability to break in using.

In a similar manner, stricture divulsors could be made of very small size.

It was my intention to have some very slender scissors, bistouries and tenotomes made for fine surgical work, but the instrument maker found that while the blades would not break, the edges turned, and could not be made to hold their cutting form by any mode of tempering known to cutlers. The same quality renders it unfit for saws, but its immense tensile strength would be very valuable in chain and wire écraseurs.

Lithotrites could be made of it, which would never snap off on a hard calculus and, owing to its great strength, slender instruments could be made of it for crushing calculi in children.

Steel can be alloyed with several metals, producing compounds with varied qualities, some of which would be of use in surgery. Tungsten steel is an exceedingly hard alloy. In the great rail and bar mills, where thousands of holes have to be bored through steel bars every day, the drills are all pointed with tungsten steel, in order to avoid the necessity of constant sharpening. It would be well could we have our bone drills made in the same way, as well as the locks of our hemostatic forceps, which now

wear out so quickly. Manganese, titanum, copper, and numerous other metals form alloys with steel, but the qualities of the compounds for surgical use do not seem to be well known. It is desirable that some metallurgist should take up this investigation and give us the results of his study.

65 Randolph Street, Chicago.

SOCIETY PROCEEDINGS.

College of Physicians and Surgeons of Philadelphia.

ORTHOPEDIC SECTION.

Meeting of April 20, 1894.

Dr. T. G. Morton presented, through Dr. Woodbridge, several cases of double equino-varus with removal of astragali:

Case 1.—Mary J. McK., one year, ten months old; living at Bryn Mawr, Pa. Congenital, uncomplicated talipes equino-varus. Operation of division of tendo Achillis performed Feb. 21, 1894. Posterior right angled tin splint for a week, followed by ordinary brace, side steel support. April 20, apparatus discarded every other day and plain shoe allowed. Foot in good position. Result perfect.

Case 2.—Benj. Jordan, two and a half years old. Living in Philadelphia. Double, uncomplicated, congenital talipes equino-varus. April 5, 1894, operation of division of tendo Achillis and tendon of anterior tibial by open incision. Rectangular, posterior splints; dressed a week after operation. Feet in good position. Also division of flexors of all toes.

Case 3.—Orm Gantt, 5 years old; living at Island Heights, N. J. Admitted into the Orthopedic Hospital, Jan. 17, 1894, with the statement that he had been deformed since birth; having double talipes equino-varus; in walking his feet were turned in, so that he walked upon the dorsum of each foot. When eight months old he had been operated upon at the University Hospital. He then wore braces until 3 years of age. He did not remain in the Hospital after operation and the after treatment was probably neglected. After admission his feet were poulticed for three nights, in order to soften the callus on the dorsum of each foot. The operation was performed on January 25; Dr. Morton severed the flexor tendons of all the toes, the anterior tibial and the tendo Achillis of each foot. He also made an incision three inches in length on the outer aspect and dorsum of the feet through the callus, and simultaneously removed the astragalus and part of the cuboid bone of each foot. The rectangular, posterior tin splints were used as in the other cases. There was no rise in temperature after operation. Dressed for the first time on February 8. Wound well healed. He continued to wear the rectangular tin splint until March 3, when braces were applied which he is still wearing. Feet are now straight and in good position. Wounds entirely healed.

DR. G. G. DAVIS.—There are two things in regard to this case which occur to me: First, as a rule, I do not believe in open incision. The only advantage gained is when one cuts down upon bundles of contracted tissue; but in division of a healthy tendon, in an equally healthy patient, I do not think it necessary. In a case of torticollis where we have dangerous structures in the neighborhood, and where there are contracted tissues and a tendon that does not slide in a synovial sheath, then I would use an open incision.

Some time ago I showed at the County Medical Society several cases of wedge-shaped resection. As for myself, I have never seen a case at the age of 5 years on which I would operate upon the bones. In one case, which I showed at the College of Physicians, aged 6 or 7 years, the child walked upon the dorsum of the feet, the toes pointed towards each other and the sole vertical, yet it was cured without operating upon the bones. The bones, in cases of this age, are soft. I showed an astragalus, removed by another surgeon, which was so soft that I could push a pin through it, with my finger, in all directions.

DR. G. G. DAVIS—I do not believe that excision of the astragalus alone, in cases which demand operation on the bones will straighten the foot; therefore where bone is required to be removed I believe the deformity can only be rectified by severe measures. In removing the astragalus, a portion only of the obstruction is removed and the external arch is left intact, and the deformity which remains is so great that it demands further procedures on the outer side of the foot, such as a removal of a portion of the cuboid or anterior portion of the calcaneum. A foot that can be straightened by removal of the astragalus alone is usually one which can be cured without operation on the bones.

DR. WOODBRIDGE—I thank the Section for the courtesy of allowing me to present these cases and as I have another engagement I will not enter into the discussion. I have only one word to say: I understand that Dr. Morton never removes an astragalus when it is in place; it is only when it is deformed.

DR. DEFOREST WILLARD—In tenotomy of the posterior tibial tendon, especially in fat infants, open incision is desirable. No surgeon, however, works in the dark in subcutaneous section of the tendo Achillis, and this method is just as exact as the open one since an amount of material will be thrown out, proportionate to the separation of the cut end.

Abstract of

REMARKS ON THE USE OF A BRACE IN LATERAL CURVATURE FROM EMPYEMA,

by DR. G. G. DAVIS. At a recent meeting of the Section when I exhibited a patient about 7 years of age wearing a brace for the correction of lateral curvature resulting from empyema, the views expressed by some present were so at variance with my own as to induce me to more carefully examine into the subject and ascertain whether the brace as ordered, was likely to be of service and desirable.

A discharging sinus, existing in the left chest wall of the child for more than a year, was only recently cured. Examination posteriorly showed the whole trunk, from the pelvis upward, inclined toward the right side with a slight lateral curvature in the upper dorsal region, the convexity being to the right. The right shoulder was higher than the left and the right scapula formed quite a prominent projection. Laterally, there was a slight forward inclination of the right shoulder which increased the prominence of the right scapula. On the left side there existed the scar and depressed cicatrix where the ribs were excised; and the contraction of the altered intra-thoracic tissue had taken place, accompanied by sinking in of the chest wall and lowering of the left shoulder.

As the general object in using braces and apparatus is to correct certain alterations in the form of the body, let me examine the mechanical problems suggested, and the means taken to solve them. First, then, as the deformity was confined to the upper portion of the body, therefore the means of correction were applied to that part. Again, as the lower portion of the body was normal, it furnished a fixed point of support for the application of the correcting force, consequently a steel band was made to encircle the pelvis between the great trochanters and the crests of the ilia, and fastened in front by a strap and buckle. To increase the hold of the band, a wide linen belt was attached to it, and reached from the trochanters to the ribs. It was secured

by two buckles in front. Four steel uprights were attached to the steel band, one under each axilla and one on each side of the medial line posteriorly. A transverse steel bar was fastened to the upper ends of the upright and curved so as to be high in the middle of the back and low under each axilla, forming a crutch.

Placing the child on his back and firmly strapping on the brace, corrected the lateral deviation of the trunk. Next to correct the elevation and forward inclination of the right shoulder and accompanying projection of the scapula, a strap was passed from the anterior end of the right crutch, over the shoulder and attached behind. This drew back the shoulder and corrected the tendency to stooping. Finally, to make lateral pressure over the projecting lump in the right upper thoracic region, a wide elastic band was fastened by straps to the right axillary upright, and to the upright on the left side of the spine. This made excellent pressure and completed the requirements of the brace. An apron had been attached by the mechanician, but as there was no necessity for it I removed it.

In another case, instead of fastening the elastic band to the axillary upright, I shall attach it to one running between the anterior extremity of the crutch to the pelvic band, and so obtain a more directly lateral force. This brace offers no hindrance to the free expansion of the contracted chest, and in no way prevents the patient from running, playing, or indulging in exercises and gymnastics, such as swinging from rings, or horizontal bars, etc. Morning and evening after removing the brace, he exercised by bending forward and backward and from side to side. The most important principle involved in the use of the brace in this class of cases is the means to be adopted to secure the expansion of the affected lung and chest wall. Is it better to allow a patient, with a recently healed wound and a marked deformity, to go without any attempt at correction on our part, or should we, by a portable brace, endeavor to maintain a gentle and persistent pressure on the distorted parts which will cause the contraction to gradually yield, yet not interfere with the expansion of the affected lung; while at the same time, the child is prevented from assuming any posture favoring persistence of the deformity? I have preferred the latter, with such exercises as he can take, believing it to be much more efficient than the spasmodic stretchings of intermittent exercises, interspersed with periods in which the body will be inclined to the affected side and every opportunity given for the contraction to take place. After the deformity has been partially reduced and the tendency to assume objectionable positions somewhat overcome, the brace may be discarded and therapeutic gymnastics alone employed.

DR. J. HENDRIE LLOYD—I have no set paper. I simply wish to make a few remarks and to show a few photographs. The subject of scoliosis is of great importance to the surgeon. I think the nervous origin of the disease is not sufficiently recognized by surgeons. It is important that it should be. It is seen especially as a complication of nervous diseases, as syringomyelia. In a recent monograph, Bruhe says that in 50 per cent. of cases of syringomyelia, scoliosis occurs. Some of these cases are also associated with marked kyphosis. One case of syringomyelia bas come under my notice in which the deformity was similar to that shown by the skeleton here exhibited. One point in connection with scoliosis in syringomyelia is shown by this photograph. In some cases, when the patient is in the recumbent position, the deformity is obliterated. This case, seen in the photograph, simulates torticollis, because the scoliosis is high in the cervical region.

The second case with which scoliosis is associated is Freidrich's ataxia. It is a disease of the spinal cord seen in childhood, and we are apt, again, too frequently to overlook it. It is allied to another form of disease which we may call disatrophy. I have under my care at the Home for Crippled Children, a girl, aged 11 years, in whom there is marked muscular disatrophy; there is secondary affection of the joint at the knee and ankle; and there is scoliosis. While not a typical case of Freidrich's ataxia, it is closely allied to it. There is probably some change in the tissue of the spinal cord. The photograph of the case shows the deformity at the knee and ankle, but even while lying in bed the twisting of the knee can be seen.

The last form of nervous disease which is confounded with scoliosis is shown by this photograph; the case had been under the care of a surgeon. When I went on duty at the Methodist Hospital, I found this woman with an affection of her knees; the surgeon had tapped them. As the case did not seem to progress it was turned over to the medical wards. I was struck by the peculiar deformity of the hand, which neurologists call *main en-griffe*. There was complete atrophy of the shoulder girdle. There was marked scoliosis. In short, the woman had muscular atrophy affecting the shoulders, arms and hands, with spastic symptoms in the legs, and with scoliosis and arthropathies. There were no sensory symptoms. The case was doubtless allied to syringomyelia. It is interesting to note that it had been regarded and treated as a surgical case.

A number of hypotheses could be advanced to account for scoliosis. One observer says that all cases of scoliosis are allied to arthropathies; for instance, it is identical, in the joints of the spine with arthropathies in the knee. Roth says it is due to muscular atrophy. Another hypothesis is that they are distinct trophic lesions, something like progressive atrophy.

When a case is of nervous origin the scoliosis, to a certain extent, is an evidence of Nature's effort to put the diseased spine in a better position. I never saw a case which would tolerate an apparatus. Most of the cases suffer great pain if attempt is made to straighten the spine. I recently admitted, to my ward in the Philadelphia Hospital, a young woman affected very similarly to some cases already mentioned; there is marked progressive muscular atrophy. She could not bear a brace of any sort. My remarks are entirely from the standpoint of a neurologist; I say nothing about the condition associated with empyema.

DR. C. K. MILLS—I have had two cases of syringomyelia in which spinal curvature was present. The cases of degenerative diseases, and syringomyelia in adults are not the ones most likely to show deformities, but these occur most frequently in Freidrich's ataxia and the affections closely allied to it pathologically, which show themselves early in life; but even in adults lateral curvatures do take place. I believe with Dr. Lloyd that little can be done with apparatus. In many other degenerative embryonal diseases, which are due to arrested development, my experience teaches me that little can be done either by operation or by apparatus, especially for the porencephalous cases. In spastic cases, either unilateral or bilateral, some advantage can be gained as to position, but nothing more.

DR. G. G. DAVIS—The orthopedists ought not to be too strictly called to account, because I think they would not put on an apparatus for an advanced case of pure nervous disease, except as a palliative measure. Much can be done by apparatus and it depends upon the nature of the case greatly. If an apparatus will give any additional comfort to the patient it is oftentimes advisable to order it. In regard to the cases referred to by Dr. Lloyd; in Freidrich's ataxia, a light brace might aid in supporting the body, and in Charcot's joints a mechanical appliance does, for a time, support and give at least some slight relief, which is more

than can be promised by medical treatment. I believe in the necessity for recognition of the points of the case, but I do not think that the application of apparatus is always useless.

Dr. J. Hendrie Lloyd—I should like to ask Dr. Davis if he would put an apparatus upon a Charcot joint? It is a matter of interest to me, as a surgical question, and I should like to hear it discussed. I think, in these cases, the surgeon, sometimes, does not recognize the exact nature of the difficulty. I know of one case, however, in which a surgeon operated on a spinal arthropathy, the exact nature of which he did not recognize, and in which marked benefit resulted from the operation.

Dr. C. K. Mills—The patient shown here to-night came to the Polyclinic Hospital last week. I have not full notes of the case, but the history is as follows: The man is 30 years of age, a painter by trade. The difficulty started slowly; at first he experienced trouble in holding his head still. When reading a paper, in spite of everything he could do, his head would turn slowly to the left. He has no pain, but this has persisted and is slowly growing worse. The case is one of a class somewhat common and, as we all know, most difficult to help. I have had considerable experience in what is termed spastic torticollis both of the tonic and clonic varieties; they are most obstinate and may resist treatment for years and forever. One case in particular occurs to me; a patient whom I showed at my clinic, and an account of which was reported in the *University Medical Magazine*. She had three surgical operations on the spinal accessory, and she had been burnt with a hot iron many times, but no help was obtained. I have brought this man here to-night, to obtain suggestions as to treatment. I have seen cases get well, but it is an affection difficult to cure because we do not recognize the underlying anatomic conditions.

Dr. J. Hendrie Lloyd—It is my opinion that torticollis involves a problem which we do not all understand. Prof. Ferrier and Mr. Horsley advanced the theory of a localizing torticollis center; at that time we were ready to localize anything and everything. But certainly we do not understand the condition.

A paper was next read by Dr. Randolph Faries, on the

TREATMENT OF SCOLIOSIS BY FREE MOVEMENTS AND APPARATUS,

in which he held that as the deformity is due to the concerted action of certain muscles or groups of muscles, therefore these should be kept inactive until their antagonists have been developed, by means of exercises and gymnastic apparatus, sufficiently to counteract the power exerted by the former ones. Also that the deformity, being compound, should be corrected in the same order as it occurred; that is, the rotation is first corrected, then the lateral curvature.

Dr. Wm. J. Taylor—I regret that I was not present at the reading of Dr. Faries' paper, as I am particularly interested in the treatment of spinal curvature by gymnastic exercises. I am glad to say, however, that such portion of the paper as I had the pleasure of listening to, meets my views entirely. But for the reason already given I am prevented from discussing the paper intelligently.

Dr. C. K. Mills—I quite agree with Dr. Faries as to his method of treating spinal curvatures, but the difficulties in the way are great. Little can be done in this direction until the colleges set the example, and until, in connection with every hospital, a room is set apart for this purpose and is put in charge of a competent assistant who can carry on the work year after year. It is essential that we should impress upon ourselves and our patients that this treatment should be carried out systematically for two or three years if necessary. One of the tendencies of modern medicine is in this direction, and steps should be taken immediately to further and further advance the treatment.

Dr. G. G. Davis—Lateral curvature is a subject much considered by the orthopedic surgeon, and for it much good can be done by gymnastics. There are two classes of such cases. In the mild ones, where the muscles are at fault and the spine itself comparatively healthy, therapeutic gymnastics are of no service. But there is another class in which the pathologic process is more profound and in which the bone and ligamentous tissues are likewise affected, and as the spine is the organ for keeping the body erect, the simple weight of the body which is supported by the spine will tend to cause curvature of it, and the tendency to distortion is increased by the efforts of the muscles on both sides of the spine. I believe that where this condition exists the spinal column will give way and deformity will occur rapidly; in these cases exercise is of little or no service. I believe that there are cases of lateral curvature which might be termed malignant. The deformity goes on increasing and in spite of most careful treatment the patient rapidly grows worse.

Dr. Randolph Faries—The most essential point is the fact that we are ignorant of the compound action of the forces which are used. It is quite true that when one set of muscles is weakened, the corresponding set is strengthened and rotation takes place, after which deformity ensues; but just what forces are used, we do not know, and it is just this which seems to me the true scientific basis of the study of this condition. If this could be determined we should get at the rational method of treatment. The body of a vertebra may be made stretched by action, just as by action we make the tissues surrounding it more elastic. To my knowledge there is no medical book published which treats of the compound action of muscular force. Moreover, this seems to me the logical treatment of the disease, and until we treat scoliosis by the above method we are doing so empirically.

Medical Society of the State of Pennsylvania.

The Forty-fourth Annual Meeting was held May 15, 16 and 17, Philadelphia.

First Day—Morning Session.

This was perhaps the largest meeting ever held, over 520 members being in attendance. The President, Dr. H. G. McCormick, of Williamsport, opened the proceedings at 10 A.M.

The Mayor of the city and Prof. E. Montgomery, Chairman of the Committee of Arrangements, delivered addresses of welcome.

Reports of delegates to the American Medical Association, and to the New Jersey State Medical Society were read. The Secretary, Dr. W. B. Atkinson, of Philadelphia, reported fifty-one county societies, with an aggregate membership of 2,400. The Treasurer reported a good balance in his hands. The Committee of Publication reported the publication and distribution of 2,500 copies of the Proceedings of 1893. The Legislative Committee reported their success in obtaining the passage of a bill by the Legislature creating an Examining and Licensing Board, and were discharged with thanks. The Committee on Contagious Ophthalmia reported the dangers of this disease, and need for its prevention, by legislation.

Dr. G. M. Gould, of Philadelphia, offered the following:

Whereas By all physicians it is admitted that a large proportion of the blindness of the world is due to the disease called ophthalmia neonatorum; and

Whereas, The well-known treatment of this disease by a physician, if at a sufficiently early period in its course, almost always results in preventing the blindness that would otherwise follow; and

WHEREAS, A committee appointed by the Ophthalmological Section of the AMERICAN MEDICAL ASSOCIATION at its last meeting has, after thorough consideration, drafted a blank form of a law and urged its passage by all State Legislatures, as well as advised all physicians to aid in securing the passage of such a law; and

WHEREAS, This blank form of a law drafted by the said Committee is as follows:

The People of the State of represented in Senate and Assembly, do enact as follows:

SECTION 1.—Should one or both eyes of an infant become inflamed, or swollen, or reddened at any time within two weeks after its birth, it shall be the duty of the midwife or nurse having charge of such infant to report in writing within six hours to the health officer or some legally qualified physician of the city, town or district in which the parents of the infant reside, the fact that such inflammation, or swelling, or redness of the eyes, exists.

SEC. 2.—Any failure to comply with the provisions of this Act shall be punished by a fine not to exceed two hundred dollars, or imprisonment not to exceed six months, or both.

SEC. 3.—This Act shall take effect on the———day of ———eighteen hundred and ninety———; and

WHEREAS, Five States have already placed upon their statute books, laws similar to or identical with the foregoing law, while in other States the same measure is under consideration; and

WHEREAS, The Philadelphia County Medical Society on May 9 unanimously passed a resolution indorsing the law recommended by the Committee of the Ophthalmological Section of the AMERICAN MEDICAL ASSOCIATION, and appointed a Committee to devise means and methods of securing the enactment of such a law by the Pennsylvania State Legislature; therefore be it

Resolved, 1. That in the opinion of the Medical Society of the State of Pennsylvania, it is of the most vital importance to the welfare and happiness of the community, and to the good name of the State of Pennsylvania, which has always been foremost in matters pertaining to the health of her citizens, that the law recommended by the Committee of the Ophthalmological Section of the AMERICAN MEDICAL ASSOCIATION should be enacted by the Legislature of the State, and the Medical Society of Pennsylvania respectfully requests the Honorable Representatives of the State at Harrisburg to do all in their power toward placing such a law upon the statute books of the State.

2. That a committee of three be appointed to coöperate with the other Committees to devise means and methods of securing this law.

The whole was adopted.

Committee: Drs. Edward Jackson, H. F. Hansell and J. A. Lippincott.

On motion of Dr. Hiram Corson, Conshohocken, it was

Resolved, That a legislative committee of five be appointed, and that they be instructed to present the subject of the care and treatment of the insane and the organization of hospitals for the insane, as expressed by this Society two years ago.

Committee: Drs. J. C. Gable, York County; R. B. Watson, Clinton County; H. L. Orth, Dauphin County; Alex. Craig, Lancaster County, and C. W. Youngman, Lycoming County.

On motion of Dr. J. C. Gable, it was

Resolved, That a committee of seven be appointed to consider and suggest the appointment of an inspector whose duty it shall be to aid the Board of Examiners of Pennsylvania to carry out the medical legislation of this commonwealth, to report tomorrow.

Committee: Drs. Gable, S. S. Towler, of Forest County; F. P. Ball, Clinton County; T. C. Detweiler, Lancaster County; T. P. Simpson, Beaver County; W. Murray Weidman, Berks County; F. D. Davis, Allegheny County.

The Luzerne County Medical Society invited the State Society to meet in Wilkesbarre in 1895. It also protested against the use of the term, "allopathic" by daily papers.

On motion of Dr. S. Solis-Cohen, the following was taken up:

The respective State medical societies entitled to representation in the American Medical Association, and through them their affiliated local societies, having been requested to consider the matter of revision of the Code of Ethics and report to the Association at its next annual meeting; and if any alteration be deemed advisable, each State so deciding to specially indicate the part to be changed and write out in full the new form proposed; therefore be it

Resolved, That it is the sense of the Medical Society of the State of Pennsylvania that the Code of Ethics be not changed in any way.

On motion of Dr. Cohen, the Secretary and delegation to the American Medical Association were instructed to present this action of the Society in relation to the Code of Ethics.

FIRST DAY—AFTERNOON SESSION.

DR. G. D. NUTT, of Williamsport, read the

ADDRESS IN SURGERY.

He gave a review of progress made in this branch. The mortality in major operations had been reduced about one-half. Prevention of disease should be the aim of the profession. In difficult operations, success or failure depend greatly upon the action of the general practitioner in deciding to call in aid before the case has passed the safety point. Too frequently, failure is due to want of appreciation of danger sufficiently early.

DR. E. LAPLACE, of Philadelphia, read a paper on "Radical Cure of Hernia." Radical cure meant non-return of hernia in that place. To secure this, after alluding to the various methods of operating, he detailed his own which was to completely obliterate the canal by a slow healing by means of the production of a burn. The cicatrix thus closed the canal so that it remained closed. Hernia might recur but it could not pass down the canal which had been destroyed. It must then be a direct hernia and retained by suitable mechanical appliances.

DR. E. S. LEMOYNE, of Pittsburg, read a paper on a "Modification of Pirogoff's Amputation" which he asserted gave a better stump, and was more easy of applying an artificial foot, etc.

DR. J. C. MCALISTER, of Driftwood, on the "Treatment of Puerperal Eclampsia chiefly by Hypodermic Use of Veratrum Viride." He alluded to the great advantage of chloral; in addition he had found the veratrum hypodermically to act most powerfully. He detailed a number of cases in all of which his results had far exceeded those he had obtained from any other form of treatment.

DR. J. V. SHOEMAKER, of Philadelphia, read a paper on

PSORIASIS WITH SPECIAL REMARKS UPON ETIOLOGY AND TREATMENT.

He exhibited a series of five well-marked cases of psoriasis, and called attention particularly to certain important points concerning the origin and treatment of the disease:

Case 1.—The first patient has for many years been subject to recurrent attacks of rheumatism. This constitutional dyscrasia gradually gave rise to the disease of the integument and also affected the heart, which is hypertrophied. The mitral valve is likewise implicated. This man had been treated in vain by many methods. He has been in the Medico-Chirurgical Hospital for a week, during which time his diet had been restricted to one thyroid gland daily—one-half being taken, lightly fried, at noon and the remainder in the evening. As a consequence the eruption has become paler, less prominent and there has been less shedding of scales. This treatment will be continued for the present and his regimen will be gradually enlarged to include plain and easily digested articles of food. For cardiac symptoms, he was given 15 minims of strophanthus three times a day.

Case 2.—A man, 35 years of age, has had psoriasis for twelve or thirteen years. The disease began at nearly the same time upon both legs just in front of the knees. Until recently the patches had, for the most part, existed only upon the leg and at the back of the elbows but lately they have attacked nearly every portion of the body. A sister and a brother are also affected by the same disease. The patient has occasionally suffered from rheumatoid pains but he has never had a decided attack of inflammatory rheumatism. He believes that there is a rheumatic tendency in his family. His case is furthermore interesting by the coëxistence

of sycosis, which began three years ago upon the chin and now involves in addition the cheeks and upper lip.

The treatment of the psoriasis was by means of a capsule containing tartar emetic, sulphide of calcium, and salol.

Case 3.—A coachman came under observation sixteen years ago, covered with psoriatic patches. The lesions differ from those of the first patient in being brighter, more infiltrated and more abundantly provided with scales. The man is an old rheumatic subject. When the rheumatic symptoms disappeared under appropriate treatment the psoriasis vanished. Now, after the lapse of so long a period, the rheumatism has returned and with it the eruptions upon the skin. The lesions are especially marked upon the exterior surfaces. He has been given 10 grains of sublimed sulphur with a grain of cream of tartar in capsules three times a day in the hope of overcoming the constitutional condition upon which the disease of the skin depends. Both sulphur and cream of tartar are admirable remedies in the treatment of rheumatism and both have a decidedly beneficial effect upon the glands of the skin.

Case 4.—This man, 32 years of age, sent by Dr. Whitesides, of Philadelphia, entered the hospital but a few moments before I started for this meeting. In the brief conversation which I had with him I learn that he is an old sufferer from gastro-intestinal catarrh. Three years ago this condition was relieved and the psoriasis disappeared. Lately they have both returned. You will perceive that the whole surface is more or less studded with large and small spots of infiltration and that these are particularly marked upon the extensor surface. Here and there the skin is fissured. I wish in this instance, to direct the attention of the members to the cause of the eruption, viz., an alteration in the mucous membrane of the gastro-intestinal tract. If we can correct this condition by suitable remedies it will not be necessary to make local applications in order to remove the infiltrations. I will order in this case 2 drachms of liquor pepsini with 10 minims of dilute hydrochloric acid before meals and one-fiftieth grain of sulphate of strychnin after meals. The diet must be restricted.

Case 5.—This patient is likewise affected by spots and patches of psoriasis, especially upon the elbows and knees. The disease is of long standing, the infiltration is marked and numerous fissures are present. As the man only speaks Hungarian I have been unable to obtain a detailed history of his case. I will, on general principles, assume that the skin disease is associated with the gouty or rheumatic diathesis. He shall be placed upon the iodid of potassium in 15 or 20 grain doses three times a day.

"These cases are excellent illustrations of the etiology of psoriasis. Two of the patients are frankly rheumatic, two are probably of arthritic tendency, while the fifth is the subject of chronic gastro-enteritis.

"Psoriasis is often excited by the presence of rheumatism or gout. In other cases it depends upon chronic disturbance of the digestive organs, disease of the liver, disorders of the blood and maladies of the nervous system. The appearance of the papules, patches, and scales is characteristic and typical, whatever the cause. The facts relating to its etiology are most significant guides to treatment. In each case we must endeavor to ascertain the origin. Though the lesions present precisely the same appearance the therapy must obviously differ in accordance with the etiology. A routine treatment of psoriasis is an impossibility. Defects of digestion and nutrition must be corrected, constitutional and —approximately—specific remedies must be administered or the state of the nervous system must be improved. The habits and the diet must be regulated or changed. Ingestion of thyroid glands is a mode of therapy which may well prove of service in certain cases. The grand principle of treatment is to determine the origin of each case. Acting upon this belief, I lay comparatively little stress upon topical treatment. Increasing experience convinces me that accuracy in tracing the genesis of the disease points to an internal therapy upon which we may place our reliance more firmly than upon local measures."

Dr. Orville Horwitz, of Philadelphia, read a paper on "Treatment of Stricture of the Urethra," which elicited a discussion by Drs. J. B. Deaver, Prof. Brinton and H. O. Walker, of Detroit.

Dr. O. H. Allis, of Philadelphia, spoke on "Cramming in Medical Schools," as making it impossible for the student to digest the immense amount of educational food forced upon him. His remarks produced quite a marked impression upon the members who were attentive listeners.

The time growing short, a large number of apparently interesting and valuable papers were declared as "read by title," and business was then called up.

The report on the Rush Monument Fund showed but one additional subscription for the year, of only $3, but the Committee was continued.

A resolution by Dr. P. D. Keyser, of Philadelphia, urging the striking out from the bill before Congress, relative to the Army, that portion reducing the number of Assistant Surgeons to ninety, was considered and unanimously adopted and ordered to be sent at once to Congress.

Second Day—Morning Session.

The Nominating Committee was announced and retired to deliberate upon choice of officers, etc., for 1895.

Dr. W. S. Foster, of Pittsburg, read the "Address in Medicine," giving a concise *résumé* of the advances in that line. He reviewed each point in a conservative manner, showing the absurdity of certain claims which had been made for the antipyretics, the animal extracts, etc. He counseled slower progress rather than the so frequent announcement of wonderful remedies soon to follow the foolish exhibition of past years.

Dr. Hildegarde H. Longsdorf, of Dickinson, Cumberland County, read a paper on "Christian Science in Its Relation to the Medical Profession." This ably exhibited the follies of this class of so-called healers, detailing at length their plans and the dangerous results which so frequently followed in real cases of disease. The paper was well received, and a motion was adopted to ask the Publishing Committee to print one thousand copies for distribution to the community.

Dr. S. Solis-Cohen made some remarks on the subject, "Should the Journal of the American Medical Association be Used to Promote Quackery?" He called up recent action of the Philadelphia County Medical Society, as follows:

"Whereas, The Code of Ethics of the American Medical Association declares it derogatory to professional character for a physician to dispense or in any way promote the use of a secret nostrum; and the Association by a resolution unanimously at its meeting, in 1892, forbade the advertising of such in its Journal, and

"Whereas, The Journal has continued to advertise such nostrums, and in defense of its course in this particular, has published an anonymous personal attack on a member of the American Medical Association and of this Society,

"*Resolved*, That the Philadelphia County Medical Society respectfully demands that the Trustees of the Journal of the American Medical Association shall in their public official acts respect the spirit and the letter of the Code of Ethics; and that the columns of its Journal shall not be used for the anonymous personal abuse of its members in good standing.

"*Resolved*, That a copy of these resolutions be transmitted to the Medical Society of the State of Pennsylvania and to the American Medical Association and to the weekly medical journals."

After full discussion, a substitute and changes were unanimously adopted as follows:

Resolved, That the Medical Society of the State of Pennsylvania hereby indorses the resolutions concerning the conduct of the Journal of the American Medical Association transmitted from the Philadelphia County Medical Society.

Resolved, That it is the opinion of this Society that if the finances of the American Medical Association do not permit the publication of a journal that does not violate the Code of Ethics by the insertion of notices of secret nostrums and other objectionable advertisements, the Trustees should be instructed to cease publication.

Resolved, That these resolutions, together with the resolu-

tions of the Philadelphia County Medical Society, be officially transmitted to each Trustee of the American Medical Association, and that the delegates to the Association elected at this meeting be instructed to present the same to the meeting of the American Medical Association at San Francisco, and to use every honorable endeavor to secure such action as shall effectually remedy the matter complained of.

Papers were then read by Dr. J. M. BALDY, of Philadelphia, on "Acute Endometritis;" by Dr. B. H. DETWEILER, Lancaster, on "Croup and Diphtheria," discussed by Dr. S. S. Cohen, who pointed out the difference between croup and diphtheria; by Dr. C. H. THOMAS, Philadelphia, on the

OPERATIVE TREATMENT OF MUSCULAR ASTHENOPIA (HETEROPHORIA).

A number of illustrative cases were reported which showed the extremely varied character of the symptoms and the favorable results of operation. The subjective symptoms of asthenopia show almost no distinct characteristics pointing to their origin, whether refractive or muscular; the same headaches and the same sense of eye-strain are complained of under both conditions. Graduated tenotomy (partial) is practicable and efficient because of the elasticity of the margins of the tendons. Muscular asthenopia may present symptoms of all grades of importance, from the slightest to the most serious. As in refractive, so in muscular, asthenopia, the gravity of the symptoms bears no constant relation to the amount of the physical defect. It is impossible to predict with any considerable definiteness the result of correction of either refractive or muscular error. As much—and very much the same kind of—relief is to be expected from the correction of muscular anomalies as from the correction of errors of refraction and accommodation; as might be expected from the similarity in the symptoms. The muscular conditions in every case should, as a matter of routine, be as carefully investigated as are the media, eye-ground, the refraction, and the amplitude of accommodation.

A large number of most valuable papers were declared read by title.

The Committee to aid the Board of Medical Examiners reported:

Resolved, That the secretary of each county society is requested to forward at once to the Secretary of the State Board of Medical Examiners a correct list of the registration of doctors under the last Act, on and from the first day of March last, and quarterly thereafter; and in counties without a society the President of this Society shall appoint a a member living in such county to procure such list, and in any case of neglect the Secretary of the State Board of Medical Examiners of this Society shall be empowered to procure the same.

Five hundred dollars were appropriated to carry this out.

Resolutions from the Allegheny County Medical Society in favor of epileptic colonies, and asking the authorities to aid in this matter, were presented and adopted.

An amendment to the rules governing the presentation of papers was laid over under the laws. This was in favor of short ten-minute papers and the interchange of personal experiences. Discussion to be limited to five minutes each speaker. This was caused by the unavoidable omission of many papers, owing to the great length of many that were read.

SECOND DAY—AFTERNOON SESSION.

The Nominating Committee reported these officers for 1895: President, John B. Roberts, Philadelphia; Vice-Presidents, S. C. Stewart, Clearfield County, J. A. Lippincott, Allegheny County, J. H. Wilson, Beaver County, R. Armstrong, Clinton County; Secretary, Wm. B. Atkinson, Philadelphia County; and the usual number of Censors, etc.

Next place of meeting, Chambersburg.

DR. T. MCKENNAN, Pittsburg, read the "Address in Mental Disorders," reviewing the current treatment and the use of hypnotics, etc.

DR. C. W. DULLES, Philadelphia, read a

REPORT ON HYDROPHOBIA,

which was a continuation of his former account presented six years ago. He reported 78 cases of nervous diseases recurring in the United States since his former communication was read, which turned out to be tetanus or cerebro-meningitis, which formerly would have been erronously classed as rabies. Eighty per cent. of these were in States in the immediate vicinity of the Pasteur Institute in New York city, and this preponderance he ascribed to the agitation of this subject in the public mind by publications emanating from the said Institute. He was very conservative in his diagnosis and did not believe that hydrophobia is more apt to occur in the young.

DR. C. K. MILLS, Philadelphia, in discussing the paper agreed much with Dr. Dulles, but was not quite ready to say that hydrophobia did not exist. He was glad to know that the investigation was to be continued.

In a "Brief Review of the Therapeutics of Whooping Cough" Dr. W. C. Hollopeter, of Philadelphia, advocated antiseptic gargles especially containing hydrogen peroxid. He thought that a specific is yet to be discovered.

DR. MACCUEN SMITH, of Philadelphia, discussed the treatment of "Simple Inflammation of the Middle Ear and their Sequelæ." He insisted upon the routine examination of the ears of new-born children by the attending physician. Should there be accumulations in the meatus, they should be removed by the syringe. If on examination, the membrane be reddened, Politzenzation or inflation of the middle ear should be performed to remove inflammatory exudates from the tympanum. Deaf-mutism is frequently produced by neglected inflammatory middle ear disease, either catarrhal or infectious in origin. Dr. Burnett thought that inflammation of babies' ears is due to too much swabbing and urged that meddlesome interference be forbidden.

DR. L. TURNBULL, Philadelphia, discussed the subject, objecting to the practice of inserting all sorts of home remedies in the ears of children.

A paper on "Dietetics" was read by DR. H. F. SLIFER, of North Wales, reviewing the forms of treatment by diet and digestives. A number of others were read by title. Dr. G. G. Davis, Philadelphia, exhibited five cases of amputation near the ankle. These cases were shown to combat the theory that in injuries to the foot and its vicinity amputation, in order to give a good stump for the application of an artificial leg, must be done above near the knee. These men walked without difficulty, showing little halt, and each was engaged in work demanding much walking; one was a night watchman at a large establishment. The exhibition was accorded a round of applause.

DR. E. E. MONTGOMERY'S "Address in Obstetrics" followed, and under the call for new business the following was unanimously agreed to:

WHEREAS, The Library of the Surgeon-General's office of the U. S. Army, has grown to be the second or third in importance in the world, and has become the most important center of medical culture in the United States; and

WHEREAS, Any curtailing would be a national disaster to the medical profession of the United States, and to the people to whom they minister; therefore

Resolved, That the Medical Society of the State of Pennsylvania, respectfully and most earnestly petition the Appropriation Committee of the United States Senate to restore the annual appropriation to $10,000, as the minimum possible sum with which the usefulness of the Library can be kept up.

THIRD DAY—MORNING SESSION.

The "Address in Hygiene" was read by DR. J. H. WILSON, of Beaver. He alluded to the great need of attention to

cleanliness, fresh air, sunshine, pure water, etc. He referred to the way by which contagious diseases are propagated by books, papers and slate pencils which are not only handled but placed in the mouths by children, requiring disinfection in some way as by heat, etc. Some school boards compel a child who appears with dirty face and hands to go to the wash room and there be cleansed by the janitor. It is the duty of physicians to instruct patients in all points of hygiene; as the entire change of clothing at night, the regular washing of the feet, keeping the finger nails clean, etc. Back yards and cellars should receive as much attention as any other part of the premises. The care of consumptives to prevent the spread of tuberculosis was now being properly understood and handled by boards of health. This paper was discussed by Dr. W. P. Munn, of Colorado, who was present, who alluded to the house-to-house method of inspection now practiced in Denver. Contagious disease is reported, the officials inquire into the habits and work of the people; the plumbing, sewerage, etc., all is tabulated, kept in the public libraries and thus becomes the property of the public. When a person is about to rent a house, he goes to the health bureau, examines the records and knows the previous condition of that house, and its sanitary condition. Landlords are thus compelled to keep their properties in the best possible sanitary state.

Tuberculosis was the subject of several papers and much animated discussion. Dr. A. M. Cooper read one on "Psychical Phases in Tubercular Folks." As he was located in a country district he had a good opportunity of following such cases, and after an experience of forty years was inclined to great skeptical belief as to the contagiousness of the disease, especially in the married state. In fifty-five cases where fifteen husbands died, the wives were still alive and well, while in twenty-five where wives died, the husbands were all alive and in good health. He regarded heredity as more potent than contagion in consumption.

Papers were read by Dr. J. M. Taylor, Philadelphia, on "Contagious Aspect of Tuberculosis of the Lungs;" by Dr. L. F. Flick, Philadelphia, on "Prophylaxis" in this disease, in which he urged most earnestly the need of quarantine; he believed this was required, owing to the presence of the bacillus, though he admitted that its transplantation successfully demanded a proper soil. The disease is a constitutional one with a local auto-inoculation, and you can cure the case. It can be controlled in two ways; by building up the system and preventing the re-introduction of microörganisms into the system; by increasing the body weight, rest, sleep, etc. The reëntrance of disease by the sputum is specially to be prevented; all sputum must be received into vessels loaded with a germicide. This should be devitalized at the earliest possible moment. Houses where consumptives live should be thoroughly cleansed and bedding, etc., disinfected.

Dr. T. J. Mays, Philadelphia, spoke on "Strychnin Treatment." He detailed cases in which the most marked results followed positive doses of strychnin. Especially was it valuable in weak heart, and exhausted nervous system. Dr. D. Longaker gave the notes of an "Autopsy in a Case of Tubercular Meningitis."

Dr. W. P. Munn, Colorado, spoke on the "Colorado Climate for Consumptives." Cure and rest should receive as much attention as prevention. The most effective factors against the disease are those of environment, occupation, clothing, personal habits and the correction of faulty conditions; without these climatic changes are useless. Inhabitants of high dry altitudes do not acquire the disease. Such altitudes are fatal to the bacilli. The children of tuberculous parents born in such altitudes are usually exempt. The conditions for a cure are dryness, sunshine, pure air, rare atmosphere within certain limits and an equable moderate temperature. All these are found on the western slope of the mountains in Colorado. Of forty physicians in Denver, 30 per cent. were consumptives when they went to Colorado but are now in vigorous health. Five remain on account of consumptive wives, who are now in good health, and a large number of former consumptives are enjoying most excellent health. One-fourth of the people went there, originally, because of pulmonary disease in their families. He believed that outdoor life was essential in the cure, and to be cooped up in a room was no better in the West than any where else. Dr. S. Solis-Cohen spoke of the curability of the disease. He agreed with Dr. Munn that this must not be recognized among the curable diseases. Though some forms as the very acute—which is called "galloping consumption" on account of the general diffusion of the infection—left no hope of a return to health. The only reason why the chronic form is not curable is that the patient is so situated that he is unable to avail himself of therapeutic measures, or because the disease comes under intelligent treatment at too late a time. Generally, the patient is so placed pecuniarily as to be able to obtain the proper hygienic measures to procure improvement, and as in certain cases, while too far gone for a cure, can have the life prolonged and made very comfortable. He did not underrate the use of drugs, but if a choice must be made, would prefer to know how to live rather than to employ drugs. Proper breathing is a most important desideratum.

Papers were read by Dr. J. M. Anders, Philadelphia, and the discussion continued by Drs. Jas. C. Wilson, Philadelphia, J. Solis-Cohen, W. E. Hughes and others. During these debates Dr. W. T. Bishop, Harrisburg, obtained the floor and on his motion it was agreed that the elective officers should form a committee to carry out the suggestions in the address of the President to secure the membership in the county societies of all members of the regular profession, that thus the entire profession of the State should be more fully represented.

On motion of Dr. Towler, it was

Resolved, That the Medical Society of Pennsylvania presents the following facts to the Judicial Council of the American Medical Association and asks its action thereon:

The Trustees of the Journal of the Association in 1892, at Detroit, were directed to abstain from publishing in the advertising columns, advertisements of secret nostrums. Such advertisements are, however, still published in defiance of the resolution.

In the Journal of April 7, 1894, there is advertised a Sanitarium Association which openly offers stock to those physicians who will send patients to it for treatment. In the opinion of the Medical Society of Pennsylvania these advertisements are improper and unethical, according to the letter and spirit of the Code of Ethics.

The Medical Society of the State of Pennsylvania therefore asks the Judicial Council to take such action in regard to the said Trustees as is demanded to sustain the integrity of the Association and enforce the provisions of the Code of Ethics.

On motion of Dr. Frank Woodbury, Philadelphia, the following was unanimously adopted:

Whereas, Medical science and practice at the present day is securely founded upon demonstrable facts of chemistry, physics and biology, and is independent of and superior to the restrictions of any dogma, creed or so-called school of practice; and

Whereas, A title indicating sectarian distinction or restriction is inapplicable to scientific physicians and tends to mislead the public and therefore is highly objectionable; therefore be it

Resolved, That the Medical Society of the State of Pennsylvania respectfully directs the attention of the State Medical Council and State Board of Medical Examiners and Licensers to this subject, and requests the said Council in all its publications to refrain from the use of any sectarian title, as applied to the representatives of this Society constituting one of the Examining Boards; also

Resolved, That in classifying candidates for examination and applicants for license, the said Board of Medical Examiners use its influence and authority to prevent the said objectionable sectarian epithets from being applied to regular physicians, who by training and education are qualified to employ all proper means for the relief of the afflicted, without restriction or prejudice, and who are independent of allegiance, either implied or avowed, to any sect, dogma or school.

On motion of Dr. S. Birdsall, Susquehanna, the following was adopted:

WHEREAS, A bill for the establishment of a National Bureau of Health in the Department of the Interior is now pending in Congress; therefore

Resolved, That the Medical Society of the State of Pennsylvania desires hereby to express its entire and cordial approval of said bill, and to record its opinion that the sanitary interests and general welfare of our country will be greatly promoted by the enactment of the proposed law.

Resolved, That we hereby respectfully request the representatives of our State in the National Legislature to aid the passage of said bill by their earnest and active support.

Resolved, That our Secretary forward a copy of these resolutions to each United States Senator and Member of the House of Representatives from the State of Pennsylvania.

THIRD DAY—AFTERNOON SESSION.

DR. G. DE SCHWEINITZ, Philadelphia, read the "Address in Ophthalmology." He strongly indorsed the action of the Ophthalmological Section of the American Medical Association, in urging the passage of a law, making it the duty of a midwife or nurse having charge of infants, to report all cases of ophthalmia neonatorum or sore eyes to the health officer or other qualified person in each city, town, etc.; 70 per cent. of blindness in infants is caused by this disease and it should be prevented. The well-known treatment by a physician at a sufficiently early period rarely fails to result in a cure so that blindness is prevented. He alluded in detail to other forms of eye trouble and the appropriate remedies.

A paper was read by DR. S. L. ZEIGLER on

CORNEAL ULCERS TREATED BY THE GENERAL PRACTITIONER.

Simple corneal ulcer is not necessarily dangerous, but may seriously affect vision; especially when central. Lacrymo-nasal lesions are the immediate cause. Gastro-intestinal disorders from errors in diet are the remote cause. Constitutional dyscrasiæ may be the predisposing cause. If septic materials are present in the ocular cul-de-sac a break in the corneal epithelium will court infection and subsequent ulceration. To summarize: Simple corneal ulcer is a purely local inflammatory process, arising chiefly from infection by septic secretions, and originating in lacrymonasal lesions. The treatment is: 1, use a mild, antiseptic eye-wash in the eye, a mydriatic if necessary, and hot applications when indicated; 2, treat the nose locally with tr. benzoin comp., and the use of a cleansing spray; 3, improve the hygiene, regulate the diet and give salt water baths.

A paper was read by DR. HORACE FOX, on

SYMPHYSEOTOMY AND VARIOUS OTHER PROCEDURES IN THE DELIVERY OF PREGNANT WOMEN WHEN THE PELVIS IS CONTRACTED AND DEFORMED.

Symphyseotomy, as performed by its present adherents, is not based on sound theoretical and practical grounds, nor is it confined to the limits of its *demonstrable use*. When the sacro-pubic diameter measures three and three-fourths inches or above and we have *any* of the various presentations or positions, other measures besides symphyseotomy will relieve the jeopardous condition of the lives of the mother and child. When the sacro-pubic diameter measures between two and three-fourths inches and three and three-fourths inches *and the woman is in the active stage of labor*, symphyseotomy should be performed, but should such a pelvic contraction be discovered before the setting in of labor, premature labor has many greater advantages, and should unhesitatingly be performed in preference to permitting the woman to go to full term and then performing symphyseotomy. When the sacro-pubic diameter measures under two and three-fourths inches, Cæsarean section or the Porro operation should be preferred.

DR. CHARLES H. BURNETT, of Philadelphia, read a paper entitled:

CHRONIC TYMPANIC VERTIGO; ITS RELIEF BY REMOVAL OF THE INCUS,

in which he showed that the vertigo so often attending chronic catarrh of the middle ear, is due to impaction of the stapes in the oval window, and pressure thence through the labyrinth-fluid upon the motor filament of the auditory nerve. Impaction of the stapes is due to the retraction of the membrana tympani and the auditory ossicles, brought about by sclerosis and synechiæ, and *not* to disease of the semicircular canals. Hence the name, "Ménière's disease," for this malady is a misnomer, since it was applied by Ménière to an affection of the semicircular canals. As the vertigo from chronic catarrh of the middle ear is due to a lesion of that cavity, Dr. Burnett suggests for this form of aural vertigo, the name of "chronic tympanic vertigo," as being more accurate and more distinctive. In fact, Ménière's disease is something like hydrophobia, rarely if ever occurring, but being confused with some other disease, whereas chronic tympanic vertigo is of frequent occurrence and, though easily diagnosticated by the aurist, is often mistaken by the general practitioner for "biliousness," "epilepsy," "neurasthenia" and even apoplexy.

As this form of ear-vertigo is due to impaction of the stapes in the oval window, surgical liberation of this ossicle, by removal of the incus, is the only means of cure. The tinnitus and deafness always accompanying chronic tympanic vertigo are also relieved by this operation, which can be performed only upon the patient under a general anesthetic, when the ear is to be illuminated by an electric forehead-lamp.

Four cases, the latest in a series of twenty operated upon recently by Dr. Burnett were then given, showing the satisfactory results of this operation, which is unattended by any inflammatory reaction.

On motion of DR. J. MONTGOMERY, Chambersburg, it was

Resolved, That no physician or surgeon shall be compelled to give testimony against his patient in cases where he has received confidential communications from said patient, unless the same shall be raised by the patient.

On motion, this was referred to the Legislative Committee.

The following officers were elected for the ensuing year: President, John B. Roberts, of Philadelphia; Vice-Presidents, Drs. S. C. Stewart, of Clearfield County; J. A. Lippincott, of Allegheny County; J. H. Wilson, of Beaver County; R. Armstrong, of Clinton County; Secretary, W. B. Atkinson, of Philadelphia; Assistant Secretary, H. G. Kreutzman, of Franklin County; Treasurer, G. B. Dunmire, of Philadelphia. George S. Hull, of Chambersburg, Chairman Committee on Arrangements.

J. W. Groff, of Montgomery County, is delegate to the New York State Medical Society; C. A. Rather, of Dauphin County, to the New Jersey Medical Society, and A. C. Wentz, of York, and P. R. Koons, of Cumberland, to the Maryland Medical Society.

President Roberts made the following appointments for next meeting: Dr. C. L. Stevens, of Athens, Bradford County, to read Address on Surgery; Dr. Isaac C. Gable, of York, Address on Medicine; Dr. Van B. Ulrich, of Chester, Obstetrics; Dr. F. X. Dercum, of Philadelphia, Mental Disorders; Dr. Hildegarde H. Longsdorf, of Carlisle, Address on Hygiene; Dr. Lewis H. Taylor, of Wilkesbarre, Address on Otology.

The entertainments provided consisted of luncheon given daily in succession by the Medico-Chirurgical College, the Polyclinic and the University of Pennsylvania. A reception was given by the Medical Club at the Hotel Bellevue, one by the Faculty of the Jefferson at the Academy of Fine Arts, and a theater party followed by a reception by the Philadelphia County Medical Society. On the Saturday following adjournment, the members of the Society and their friends were tendered a complimentary excursion to Asbury Park, where they were handsomely entertained at the Hotel Brunswick by the Mayor and citizens of this charming city by the sea. The visitors were delighted with the location and great facilities for entertainment, and went away fully prepared to indorse the invitation which will be presented at San Francisco for the next meeting of the American Medical Association to be held at this place in June, 1895.

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MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues and subscription for THE JOURNAL. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above subscription the weekly JOURNAL of the Association will be forwarded regularly.

All members of the Association should send their Annual Dues to the Treasurer, RICHARD J. DUNGLISON, M.D., Lock Box 1274, Philadelphia, Pa.

SATURDAY, JUNE 2, 1894.

THE DUTIES OF MEDICAL MISSIONARIES IN THE ORIENT.

The following autobiographical paragraphs have been selected from several such published in *Medical Missions* for March, 1894, in answer to questions by a society of London medical students. That society contains not a few young men who are fitting themselves for the foreign field and is known as the "Medical Missionary Association of the London Hospital." In answer to the question, What sort of work does the missionary get? DR. SIDNEY HODGE, of the Hankow Hospital, replies that he gets every kind of work that he would get at home.

I am family doctor to a large mission; general practitioner to the Chinese public; specialist in every department, and have a wide operative field. I have not done as much as many out here, but if I mention some operations I have done you will have an idea. Amputations—leg, arm, breast, etc. Excisions—knee, elbow, upper jaw. Removal of malignant tumors in various situations. Eye operations innumerable, iridectomies, entropia, etc. And while I am writing there is an amputation at the knee joint, one at the shoulder, and an ovariotomy awaiting me. You will see, therefore, that our work is no child's play. There is an equally wide field in medicine: Fevers, chiefly malarial, always a fair sprinkling of nervous cases, phthisis, pneumonia, rheumatism, with an occasional epidemic of Asiatic cholera, just to keep you awake. Then there is midwifery, always difficult, either version or forceps. The Chinese are difficult and disappointing patients, and any one who comes out here must lay in a large stock of divine patience. The people are ignorant and suspicious. Anything chronic requiring long treatment has a poor chance. They are, however, on the whole grateful patients, and there is splendid opportunity to reach them by conversation when resident in a hospital."

DR. W. P. MEARS, of Foochow, has been largely engaged in training and teaching native students preparatory to their going out as dressers and assistants to the mission hospitals. Writing to the London Hospital students, he shows in a sentence or two the power of the medical missionary element in Chinese mission work:

"Lately a traveling native evangelist has asked that a medical student may be allowed to accompany him, and for this reason—he finds that often after a long day he is refused lodging for the night in village after village, because he is a preacher of strange doctrine, and he must, therefore, walk, three, four, five or more miles further, when he is wearied out, before he can find shelter. On the other hand, he says that he and a medical man together would be willingly received anywhere. I find that this is not a solitary case and that the same difficulty is experienced elsewhere. In time we hope to have men for such itinerant medical work, but at present we have none."

DR. R. L. SCUDDER, of the Arcot Mission, S. India, says of the Ranipet Hospital, of which he has charge:

"Government has placed at our disposal, free of all cost to the mission, a large hospital, where we can administer to the spiritual as well as physical diseases of the people. All that they require is that the medical officer in charge shall give a reasonable attention to his work."

DR. GRACE MACKINNON, of Patna, had in the ten months from November, 1892, to September, 1893, new patients, 3,022; dispensary attendance, 10,156; hospital in-patients, 12; major operations, 11; minor operations, 81; visits to homes, 304.

The foundation stone of the new Medical Mission Hospital at Patna was laid on July 29, 1893, by the Lieutenant-Governor of Bengal.

A French missionary, DR. LIENGME, has his field among the Zulus of Gazaland, a lot of wild and bloodthirsty heathen. He went, on invitation, to visit one of the "kings," and was called upon to practice in the royal family. One of the queens was treated for pneumonia and recovered, fortunately for the missionary. Then the king came forward for treatment for the complications arising from too much "sope" or alcoholic drink. The king entreated the missionary to give him a medicine to have many children. The missionary proceeds to say:

"Medical skill in the Lord's hands has been one of the great means in attracting the king's and his people's favor. When I was known, the sick people came from great distances. One day I cured a deaf man by extracting a cork of wax from his ear. In a few days a number of people with ear diseases came from different parts of the country. The same thing occurred with eye diseases. Many doctors would have envied my opportunities. The consultation and operating room consisted of a tree under whose shade a small bench was fastened on the ground, and two trunks were reserved for the patient's use. Near by was a small tent containing the medicines, and that was all. The patient knelt, lay or sat down. A piece of paper was spread on the ground for the instruments, and the operation was proceeded with. Generally a crowd of natives looked on, unable to conceal their astonishment, and very often their fear.

When a patient after three days was quite restored, only the scar to tell of the tumor, their admiration had no end. 'You are the king of the white men! hé! hé! hé! that man, that is a surgeon!' they would exclaim. I have already told you that sick people came to live near us. At the end of our stay there were over sixty. If I hadn't been obliged to send them away, the number would have speedily increased. I was very sorry to have to send them away. Those poor people couldn't be comforted when they saw that they had come too late. A poor old blind woman had made a five days' journey, and I was obliged to send her home without having done anything to relieve her. Many others who excited our compassion had thus to be sent away. All my medicines were gone; I could not satisfy their entreaties for 'just a little, very little medicine to drink.'

"Some figures will give you an idea of what has been done during our short stay in Gazaland: I had thirty-three operations, of which eight were cataracts, three other eye operations, and four for hydrocele. I removed an inferior maxilla, with necrosis caused by a bad tooth, which a native doctor had tried to extract. The patient appeared in a fearful state; he believed a 'moloye' (witch) had put a rotten bone in his mouth. I operated also on five cases of tumor, which healed by first intention."

He had over 1,400 consultations under the tree or in some neighboring hut.

LIABILITY OF VARIOUS CLASSES OF HOSPITALS AND THEIR PATRONS.

The United States Circuit Court of Appeals, Eighth Circuit, has rendered an exceedingly important decision in the case of the Union Pacific Railway Company v. Artist, decided Feb. 12, 1894, and just reported in the advance sheets of 60 *Federal Reporter*, 365. The Court says that if one contracts to treat a patient in a hospital—or out of it, for that matter—for any disease or injury, he undoubtedly becomes liable for any injury suffered by the patient through the carelessness of the physicians or attendants he employs to carry out his contract. If one undertakes to treat such a patient for the purpose of making profit thereby, the law implies the contract to treat him carefully and skilfully, and holds him liable for the carelessness of the physicians and attendants he furnishes.

But this doctrine has no just application where one voluntarily aids in establishing or maintaining a hospital without expectation of pecuniary profit. If one, out of charity, with no purpose of making profit, sends a physician to a sick neighbor or to an injured servant, or furnishes him with hospital accommodations and medical attendance, he is not liable for the carelessness of the physicians or of the attendants. The doctrine of holding the principal responsible no longer applies, because, by fair implication, he simply undertakes to exercise ordinary care in the selection of physicians and attendants who are reasonably competent and skilful, and does not agree to become personally responsible for their negligence or mistakes. The same rule applies to corporations and to individuals, whether they are engaged in dispensing their own charities, or in dispensing the charitable gifts of others intrusted to them to administer.

One reason why corporations and individuals conducting hospitals supported by charitable endowments and contributions, and operated to heal the sick and injured, but not for profit, are not liable for the negligence of their employes, is, that the moneys in their hands constitute a trust fund devoted to a charitable purpose, and the courts refuse to permit it to be diverted to the very different purpose of paying for the malpractice of their physicians or the negligence of their attendants. Moreover, the corporations or individuals that administer such trust must, after all, leave the treatment of the patients to the superior knowledge and skill of the physicians. They can not direct the latter, as the master may ordinarily direct the servant what to do, and how to do it. If they did do so, the physicians would be bound to exercise their own superior skill and better judgment, and to disobey their employers, if, in their opinion, the welfare of the patients required it. And, finally, the patient is not required to accept the proffered accommodations and attendance. They are but freely offered to him. He may refuse to accept them, and seek other physicians and other accommodations.

What those who charitably furnish hospital accommodations and medical attendance are responsible for is only the exercise of ordinary care in the selecting of the physicians and attendants whom they employ.

Following this statement of principles, the Court of Appeals reverses a judgment rendered by the Circuit Court against the Union Pacific Railway Company for the malpractice of physicians and the negligence of attendants in a hospital maintained by it, for the benefit of its employes. The evidence tended to show that the Company required each of its employes to contribute from his wages twenty-five cents a month towards the support of a medical department, the Company contributing the amount required in addition to the sum thus raised to pay the expenses of this department. The Circuit Court charged the jury that the hospital was not a charitable institution, in any sense that those words are used in law, and that the Company was bound to use reasonable care to see that the treatment given to patients in such hospital was such as was ordinarily given in hospitals of this kind to such patients. This, it is held, was wrong.

The test which determines whether such an enterprise is charitable or otherwise, the Court of Appeals holds, is its purpose. If its purpose is to make profit,

it is not a charitable enterprise. If it is to heal the sick and relieve the suffering, without hope or purpose of getting gain from its operation, it is charitable. Tried by this test, the hospitals and medical department of this Company are a great public charity. They are supported by the voluntary contributions of this great corporation and its employes, without the purpose of profit thereby. And the court says that it does not speak of their "voluntary contributions" unadvisedly. If the individual contribution of twenty-five cents a month was a part of the pay of the employe, the Company could not lawfully take it out without his consent. If he did not consent, then he did not contribute, and the Company still owed him the amount of this assessment. If he did consent, he voluntarily contributed the amount of his assessment. Moreover, it was shown that besides these contributions of twenty-five cents per month from each employe, the Company contributed from $2,000 to $4,000 per month for the purpose of furnishing these hospital accommodations. If it be urged that this gift may have been prompted by an ulterior and selfish motive,—that the Company may have thought that the operation of its medical department would protect it from excessive claims for injuries resulting to its servants—the answer is that the true test of a public charity is not the motive of the donor, but the purpose to which the money given is to be applied.

If a dozen of the employes of this Company had contributed a fund, out of charity, to furnish one of their number, who was injured, with hospital accommodations and medical attendance, they certainly would not have been liable to him for the malpractice of the physicians or the negligence of the attendants they employed. If they had intrusted such a fund to a third person to administer, who, out of charity, contributed to it more largely, and he furnished the accommodations and attendance by the use of this fund, it goes without saying that he would not be liable for the negligence of the physicians or attendants he employed. That the party to whom this charitable gift is intrusted, the party that contributes most liberally to it, and the party that can not by any possibility derive any direct profit or benefit from it, since it is not subject to bodily ailments and injuries, is a corporation, can not extend the limits of legal liability here.

The result is, the Court holds, that the only contract the law implies in such a case as this, is an agreement on the part of the Company to use reasonable care to select and obtain skilful physicians and careful attendants, and if the Company performed that contract it was responsible no further. In other words, it was responsible for the discharge of its own personal duty, and not for the performance of the duties of its employes.

SMOKE AND THE STRIKES.

At first blush the connection between a labor strike and the public health and comfort may not seem very obvious. But the coal famine, which has resulted from the widespread disturbances among the miners, has certainly led to a material abatement of the smoke nuisance and its injurious effect upon the health and happiness of several millions of people. The consequent pressure for economy in the use of coal for fuel has taught a great object-lesson in the value of careful stoking, and the consumer has learned that he can get more heat out of a given quantity of coal, if this is so fed to the furnace as to secure its perfect combustion instead of allowing a large percentage of it to pass off through the chimney in unconsumed carbon and gases.

Experts estimate that a smoky chimney indicates a loss of from 10 to 25 per cent. of the fuel used—the amount varying with the density of the volume of smoke poured out into the atmosphere to poison it with noxious gases, which produce or aggravate many affections of the respiratory apparatus; to settle down on all subjects, animate and inanimate, in a shower of inky, grimy, oily "blacks," destructive alike of good clothes, good looks and good morals; and to shut out the health-giving sunlight, to the injury of eyesight and to the causation of mental and nervous depression and gloomy views on all mundane subjects.

But it is not in the education of the fireman or stoker alone that there is improvement. The value of many mechanical devices for the smokeless combustion of the bituminous coals has been demonstrated, with claimed results of saving in coal bills that remind one of the Celtic logic which induced Pat to buy two stoves instead of one, on the representation of the dealer that one would save half its cost in the year's coal account.

Stationary "plants," locomotives and even tugboats are being fitted with smokeless furnaces which increase boiler capacity and reduce fuel bills; and a Hamburg-American steamer recently arrived at New York, "fitted with furnaces that so completely burn the coal and all the products of its combustion that it requires 30 per cent. less fuel to run it than would be required with ordinary furnaces, and no black clouds pour from the funnels and no cinders fall upon the decks."

Promise of further minimizing of the smoke evil is also to be found in the increasing utilization of the petroleum oils, hydraulic power, compressed air, electricity and gas for manufacturing and even domestic purposes. "Petroleum bricks" are manufactured in France, concerning which Dr. C. W. Chancellor, formerly Secretary of the Maryland State Board of Health, now U. S. Consul at Havre, reports that: "Trials of these bricks as fuel have been made at

Marseilles on several tugs, and it is found that, weight for weight, they develop three times as much heat as the ordinary coal and leave no ashes. It is expected, with some slight change in the furnace, to arrive at still more perfect results, not only in the increased heat, but in the entire suppression of smoke and on the most economical basis, one kilogram of the bricks being equal to four kilograms of coal."

Railroad companies, driven thereto by the coal famine, are equipping their locomotives with petroleum-burning devices; hydraulic power on the most stupendous scale is being developed for the production of electricity, and the use of this agent and of gas for household cooking and heating is daily becoming more common. It is, probably, to these that we must look for our greatest measure of relief from the evils to health and happiness which the smoke nuisance now inflicts.

The beginning of the twentieth century should be ushered in with a total absence of the fuliginous canopy which hangs over these closing years of the nineteenth.

CORRESPONDENCE.

Editorial Correspondence.

GALESBURG, ILL., May 28, 11 P.M.

The ASSOCIATION train left Chicago via Santa Fe line promptly at 5 P.M., May 28. There were ninety persons on board bound for San Francisco, as follows:

J. A. Work and wife, Elkhart, Ind.; Dr. L. Duncan Bulkley, New York; J. B. Roberts, Philadelphia; C. C. Roberts and wife, Philadelphia; Miss Roberts, Philadelphia; Mrs. A. L. Massey, Philadelphia; Miss Massey, Philadelphia; Miss Willard, Philadelphia; Alonzo Garcelon and J. A. Donovan and wife, Lewiston, Me.; Allen Pierson and wife, Spencer, Ind.; Mrs. C. A. Garcelon, Chicago; H. McColl, Lapeer, Mich.; Geo. Davenport, East Randolph, Vt.; C. S. Talbot, Chicago; G. W. Jenkins, wife and daughter, Kilbourn City, Wis.; John L. Crofts, Little Falls, N. Y.; Mrs. Katherine R. Evans and Miss S. E. Clark, West Brattleboro, Vt.; H. D. Holton and wife, Brattleboro, Vt.; C. F. Jenne and wife, Brattleboro, Vt.; Joseph Eastman and daughter, Indianapolis, Ind.; C. W. Foster and wife, Deering, Me.; Ellis Phillips, wife and daughter, New Haven, Pa.; E.B.Lyon and wife, New Britain, Conn.; G.A. Shelton and wife, Shelton, Conn.; Jos. E. Root and wife, Hartford, Conn.; John P. Sharer, Little Falls, N. Y.; B. O. Reynolds, Lake Geneva, Wis.; Foster Pratt, Kalamazoo, Wis.; A. E. Remick, Chicago; F. C. Echelman and wife, Elkhart, Ind.; E. J. Senn, Chicago; Geo. Perkins and wife, Somerset, Ky.; H. M. McKenzie, Elwood, Iowa; L. C. Stephens, Blackville, S. C.; H. M. Starkey and wife, Chicago; E. F. Ingals, wife and two children, Chicago; John B. Hamilton, Chicago; W. E. Quine and wife, Chicago; H. O. Worden, Pittsburg; G. W. McNeil, Pittsburg; Thomas J. Gallaher, Pittsburg; E. H. Small, Pittsburg; D. W. Graham and wife, Chicago; Thos. E. Cunningham, Cambridge, Mass.; Jerome Cochran, Montgomery, Ala.; A. H. Cook, Chicago; E. E. Montgomery, Philadelphia; H. V. Würdemann and wife, Milwaukee; G. Benson Dunmire and wife, Philadelphia; D. R. Brower, Chicago; S. S. Bishop and wife, Chicago; Edmond C. Ingalls, Oak Park, Ill.; E. Wills Kellogg, Milwaukee; E. J. Bush and wife, Piatteville; Mark Rowe and wife, Redmon, Ill.; C. E. Cook and wife, Mendota, Ill.; Frank Woodbury, Philadelphia; Harriet Garrison, Dixon, Ill.; J. D. Cotton, Marietta, Ohio; J. T. Cotton, Charleston, W. Va.

Thanks to the thoughtful care of Superintendent Garcelon, of the Pullman Palace Car Company, every comfort was provided. Handsome cars, elegant equipment, and a magnificent Santa Fe dining car, made up one of the finest trains ever pulled out of Chicago. Dr. Donald McLain's special car with a party from Detroit, were at the Chicago depot when we left. Dr. Mulheron, Dr. Stoner, M. H. S., and others were of this party. All regretted it when our train left the depot without them, but as two more Pullmans with delegates from the Southeast were expected to join our train at Burrton, Kan., the railway officers announced that they could not take them, but they may join us at Kansas City. The weather is fine, and so far the trip has been without incident. All were happy in anticipation of a pleasant journey. JOHN B. HAMILTON.

The Difference between the Copyrights on Medical Books and the Patents on Mechanical Appliances.

DETROIT, MICH., May, 1894.

To the Editor:—In the *Medical News* for May 19, our esteemed friend, Dr. Gould, states his view of the difference between the copyrighting of medical books and the patenting of mechanical appliances. Thus he says, "one is payment for instruction, while the other is tribute for permission to use a certain instrument."

The fallacy of this statement is evident. Granted that the book instructs, does not the instrument also instruct? The buyer of the book pays for the brain work of the author, and in like manner the buyer of the mechanical appliance pays for the brain work of the inventor. If both are good articles they will both instruct the profession who use them. Both are teachers. Most medical books introduce into their pages the work of inventors of mechanical appliances, and even introduce cuts of the same. It is said that the book copyright does not set up a monopoly. It is well that this is not believed, else some person would have to pay damages for publishing books without the permission of the person who copyrighted the same. Every physician knows that a medical book is a monopoly to the full extent of the protecting law under which it is issued.

We are surprised that the claim is made that the patenting of an instrument prevents the buyer from being instructed by the same. Every person knows that the sale of such mechanical appliances depends upon the instruction of the profession respecting their uses. Every mechanical appliance of merit is a great educator to the entire profession, even in lines outside of its especial adaptation. It seems perfectly evident that both good books and good mechanical appliances alike teach the medical profession new ideas or old ones in new applications. Bad books and bad instruments also teach by their negative qualities. We are of the belief that the giving of both author and inventor the right to avail themselves of their rights as citizens, in the matter of copyrighting and patenting the products of their brain activities, would promote equity between physicians and advance the general prosperity of the entire profession.

We have searched in vain in all directions for reasons for denying the inventor of mechanical appliances what is granted the medical book writer. We can find absolutely none. It were tardy justice to grant the former his legal rights at this late day, but tardy justice were better than continued injustice. LEARTUS CONNOR, M.D.

NECROLOGY.

E. S. ELDER, A.M., M.D., President-elect of the Indiana State Medical Society, and for fourteen years past its Secretary; Dean of the Medical College of Indiana and Professor of Practice and Principles of Medicine in the same college; late member of the State and of the City Boards of Health; member for ten years past of the Clinical Staff of the City Hospital and City Dispensary; member of the Indiana Academy of Science; member of the American Medical Association; late President of the Mitchell District Medical Society, and of the Shelby County and Rush County Medical Societies; a Knight Templar and a thirty-second degree Scottish Rite Mason, Steward and Elder in the Central Avenue M. E. Church of Indianapolis; Business Manager of the *Indiana Medical Journal* and examiner for various insurance companies, died in Indianapolis May 19, 1894, of peritonitis following intestinal obstruction. Dr. Elder, it will be seen, filled a large place in Indiana medicine. He was a self-

a second circular be sent out warning ladies against long dresses and advising them to have their skirts cut sufficiently short to avoid all danger of contagion. These gentlemade man, the son of a physician, Dr. S. F. Elder, of Hillsborough, Ind., where Dr. Elder was born in 1841, of English ancestry. At 18 years of age, Dr. Elder was a school teacher. During the war he was Provost Marshal for the 6th District. He graduated from the Medical College of Ohio in 1867, practiced in Morristown until 1875, when he attended lectures in Bellevue Medical College, New York, taking the degree in 1876. He then located in Indianapolis where he practiced to within two weeks of his death. Dr. Elder was a born organizer and so became a valued member of every society and enterprise with which he was connected. He was particularly prominent in the State Medical Society and knew by name and sight nearly every one of its 1,200 members.

Alfred A. Lutkins, M.D., of Jersey City, died May 9, aged 68 years. He was a retired practitioner of wealth and social prominence. He was a licentiate of the New Jersey State Medical Society of 1848, and an M.D. of the University Medical College in 1878. During recent years he gave up practice except among his oldest clients.

George W. Brown, M.D., Secretary of the New Jersey State Medical Board, and whose home is at Long Branch, died on May 12 of consumption, at the Trenton House, Trenton, N. J., where he had been a guest since January 22, last. He was 36 years old, and was graduated at the College of Physicians and Surgeons in the class of 1879.

William B. Dooson, M.D., who for several years has been known as the oldest living graduate of Jefferson Medical College in Philadelphia, died in that city on May 11. He was 93 years old. Although the greater part of his practice was in the South, where he had lived since his graduation from college, he was recognized by physicians generally as an authority in operative surgery. The date of his diploma was the year 1834.

Robert Fuller, M.D., of Schenectady, N. Y., died May 9, of pulmonary tuberculosis. He was 72 years of age, a graduate from the Albany Medical College, dating from about fifteen years ago. He was a graduate in arts at Union College, class of 1840.

W. C. Williams, M.D. of Cheshire, Conn., May 21.—— Thomas Wilkinson, M.D., of Ann Arbor, May 26. He was a graduate of the Vermont Medical College, and served in the War of 1812. He was 95 years of age.

BOOK NOTICES.

Medico-Chirurgical Transactions.—Published by the Royal Medical and Chirurgical Society of London. Vol. vii, (second series) London: Longmans, Green & Co. 1893.

The transactions of this Society, always of interest, have this year a melancholy attraction in the last presidential address of the late Sir Andrew Clark. A curious custom of the Society is one which condemns its President each year to read in full the biographical notices of the deaths of members. This year, Sir Andrew objected to the custom, which he notwithstanding complied with. In America the duties of preparing necrology reports are relegated to a special committee, whose report, the reviewer is bound to add, is usually read by title, and the members read the notices in the Transactions. The papers in this volume include: I, Amputation for Diabetic Gangrene, by Rickman J. Godlee; II, on The Advantages of an Amputation Through the Thigh, either as a Preliminary Operation to, or in some Cases, *instead of*, Amputation through the Hip, where the Joint is itself Diseased and the Patient in very bad Condition, by H. G. Howse; V, The Radical Treatment of Severe Talipes Equino-Varus, by Edmund Owen; XX, Use of Atropin in Cholera, by T. Lander Brunton; and XXI, A Case of Malignant Disease of the Thyroid Gland with most Unusual Course, by Felix Semon. All the papers are interesting, and the volume as a whole most instructive.

Transactions of the Forty-eighth Annual Meeting of the Ohio State Medical Society held at Put-in-Bay, June 28, 29 and 30, 1893. Cincinnati. 1893.

The particular feature of interest in this report is the address of the President Dudley P. Allen, M.D., on the History of Early Legislation and Societies in Ohio. From this report it is learned that the first State Society of Ohio was "the result of an Act of Assembly," passed January 14, 1811. A medical practice Act was also passed at that session, and in 1812 an Act to incorporate medical societies was passed and the State divided into seven medical districts. The chief function of the State Society was to regulate the practice of medicine and to supervise the district societies. An interesting account of the work of the societies is given in the paper, and at the meeting of 1837 is a paper by Dr. Willard Parker, then of Cincinnati. The present Society was formally chartered on Washington's birthday, 1848, although for some years it had been in existence. The paper contains much of historical interest. There are many interesting papers on medical and surgical topics, and the volume is highly creditable to a Society already distinguished by the high scientific value of its papers and discussions.

The Diseases of the Will. By Th. Ribot, Professor of Comparative and Experimental Psychology in the College of France, translated by Merwin-Marie Snell. Pp. 134. Chicago: The Open Court Publishing Co. 1894. Price 75 cents.

This interesting little book will be of interest to all alienists. There are five chapters. Chapter I is on Impairments of the Will—Defect of Impulse; Chapter 2, on Excess of Impulse; Chapter 3, on Impairment of Voluntary Attention; Chapter 4, The Realm of Caprices; Chapter 5, The Extinction of the Will, and a Conclusion. The book is interesting, original and scientific. The translation is an excellent one.

Essentials of Anatomy, including the anatomy of the viscera, arranged in the form of questions and answers, prepared especially for students of medicine. By Chas. B. Nancrede, M.D. Pp. 388. Fifth edition. Philadelphia: W. B. Saunders.

When a book has passed to its fifth edition, it has passed beyond the reach of the reviewer, for it is then evident that it has found an appreciative public.

PUBLIC HEALTH.

Contagion of Influenza.—Investigations of the epidemic of influenza, or "grip," which has prevailed during the last four years, have adduced an overwhelming mass of evidence in proof of the contagiousness of the disease. The English commission concludes that it is not infectious in the sense that it is conveyed through the atmosphere, although the contagion is carried in the breath of the patient; but, like some of the exanthemata, it requires contact or intimate proximity with those afflicted, for its spread. The preventive lesson is obvious.

Osculatory Contagion.—The Sanitary Committee of the Orange, N. J., Board of Health, has recommended that a circular be issued to the people "urging every one to desist as much as possible from kissing, as the touching of lips is likely to convey contagion; one of the persons might have disease germs in the throat and communicate them to the other." It was also proposed by the same Committee that

men are inviting destruction. The exercise of sanitary authority is none too well liked at best; when it excites ridicule its days are numbered. The advice against long dresses might be defensible if it were necessary; as a matter of fact, women whose health is worth preserving don't sweep the streets with their dresses. As for the other proposition—that may be safely left with the young people of both sexes.

Epidemic Diseases.—The usual seasonal lull has set in with respect to smallpox. There are still occasional new cases in the infected districts, as there will probably continue to be in diminishing numbers, during the summer months. To what extent the contagion has been destroyed in the cities and places thus far visited and what amount of vaccinal protection has been secured as a result of the recent "smallpox scare," will be learned upon the advent of cold weather next fall. For whatever the figures are worth, reports show an enormous amount of vaccination performed during the past few months. The Chicago Health Department, for instance, reports: Number of vaccine points used between Dec. 1, 1893, and April 30, 1894, 321,400; number used between May 1 and May 31, 449,000; total used between Dec. 1, 1893, and May 31, 1894, 770,400. At present the Department is using an average of 14,500 points per day, and attributes the recent reduction in the number of new cases to this work. For the first seventeen days of May the daily average of new cases in the city was 30; during the rest of the month, and notwithstanding the low temperature, the daily average was 11—a reduction of 61.7 per cent.

Asiatic cholera seems to be still spreading in Western Russia, but elsewhere in Europe there are no authentic accounts of its existence. It is now exceedingly doubtful if the Lisbon outbreak was really Asiatic cholera. Drs. Pestana and Bettencourt have presented their report to the Portuguese government, in which they assert that the bacillus which they discover in the discharges of the patients is identical with that found in the Lisbon drinking water, but is not the same as that to which Prof. Koch and other bacteriologists ascribe Asiatic cholera. It is certain that the low rate of mortality reported in the Lisbon epidemic is not that of the fatal Indian pestilence. The Spanish government, whose commission unhesitatingly pronounced the disease to be Asiatic cholera, still continues quarantine precautions, not only on the Portuguese frontier but against certain French ports, the latest being the town of St. Nizaire at the mouth of the Loire, a port doing considerable business with Mexico and the West Indies. The existence of cholera at Villa Real is officially denied.

Yellow fever, which has been epidemic at Rio de Janeiro during the past three months, is reported decreasing in the number of cases and in virulence. A steamer from Rio, April 13, arrived at Trieste, Austria, May 26, having lost her captain and four other officers from yellow fever during the voyage.

Railway Sanitation.—Recent investigations, both in this country and abroad, into the contagiousness of the dust and atmosphere in railway coaches, have awakened new interest in the subject of the sanitation of railway travel, first agitated by the late Dr. Rauch many years ago. In this country many State Boards of Health now exercise a supervision of railways in this direction, and enforce cleanliness about stations, the proper disposal of excreta, a pure water supply and frequent inspections of depots, buildings, outhouses, grounds, feed yards, cattle pens, etc., in order to discover and correct unsanitary conditions.

In the sanitation of trains the following points are insisted upon:

"Purity of water furnished passengers for drinking; not only should its source be closely scrutinized, but the after care of it should be kept in mind. In this connection attention is called to the disgusting and dangerous method in vogue for supplying water tanks with ice. Where these tank are charged from the top, the ice, after it is broken to suitable size, is handled at least twice by men with dirty, begrimed and possibly infected hands; where the ice is brought into the cars, by the dirty hands of at least one workman. This practice should be broken up, not only for the sake of cleanliness, but because there is real danger of infecting the water supply of trains. Water tanks should be thoroughly cleaned at frequent intervals, and scalded inside.

"Passenger cars should be kept in the cleanest possible condition. The practice of sweeping and dusting cars en route when occupied is reprehensible; it is most disagreeable to passengers, and should be stopped, as the dust so raised may oftentimes be infected. Instead, they should be cleaned by damp mops and cloths.

"Each car should be provided with a reliable thermometer, and conductors should be instructed to keep their cars heated in winter or cool weather not above 70 degrees nor below 60 degrees F. Conductors should also be required to pay special attention to the ventilation of their cars. Urinals and water-closets should be thoroughly cleaned, and flushed with a disinfectant solution at the end of each trip. The floors of water-closets should be mopped with a disinfectant solution."

Causes of Smallpox Epidemics.—In answer to a request from one of the editors of the local press, for information concerning the smallpox epidemic, Dr. A. R. Reynolds, Health Commissioner of Chicago, has furnished a lengthy paper, which is, in effect, an argument and an appeal for continuous and general vaccination, as applicable to the country at large as to the city of Chicago.

The questions which Dr. Reynolds essays to answer are as follows: "What were the causes of this outbreak? Were they avoidable? Have the proper measures been enforced to arrest the progress of the outbreak? What is necessary to prevent a recurrence of such outbreaks? What are the prospects for the immediate future?"

Such passages in the answers to these questions as are of general interest are here given:

1. As to causes: It is unfortunately the fact that in this country general vaccination is secured only through the immediate dread of smallpox, as during a widespread outbreak of the disease—a so-called "epidemic." The last general vaccination, not only in Chicago, but throughout the United States, was during the epidemic of 1881-3. About ten years prior to that—namely, during the epidemic of 1871-4—vaccination was also general, as it was during the epidemic following the close of the civil war. In the intervals between these periods smallpox occurred only sporadically and caused little or no alarm. In the absence of this menace, vaccination was neglected until another general outbreak caused it to be resorted to.

While it is incontestably true that vaccination secures immunity from smallpox in an immense majority of cases, it is also true that the degree of susceptibility of the smallpox contagion varies with the individual. This is shown by the fact, observed long before the days of Jenner, that while, as a rule, one attack of smallpox secures against a subsequent attack, nevertheless there are persons so susceptible to the contagion that they are attacked a second or third time or even oftener.

What is true of these exceptions to the rule that one attack of smallpox is a preventive of a subsequent attack is also true of vaccination—with this additional limitation: That the protective power of vaccination is impaired by the lapse of time in a large number of individuals. As the result of experience and observation the best authorities have fixed the period of five years as the practical limit beyond which it is not safe to rely upon a given vaccination.

During the intervals between these general vaccinations there is a steadily increasing number of individuals susceptible to smallpox, made up of those born during the interval and not vaccinated, of those in whom vaccination has lost its protective power and of unvaccinated immigrants and others coming into the community. Added to these are the hypersusceptible individuals whom neither repeated vaccinations nor a previous attack of smallpox will protect. . .

The first cause, then, of the present outbreak, was a ten years' aggregation of individuals susceptible to the smallpox contagion and the second cause was the introduction of the contagion—the application of the spark to the magazine.

2. Were these causes avoidable? In the absence of general and continuous vaccination—no. Without such stringent governmental control of the individual as obtains in some European countries, vaccination can not be made com-

pulsory, except during an alarming prevalence of smallpox —when, indeed, vaccination becomes voluntary and not compulsory.

In this country the extent of the vaccinal protection of a community is the measure of its intelligence. It is not the better sanitary environment of our best residence districts alone that secures practical immunity from smallpox to their inhabitants; it is their active appreciation of the virtue of vaccination. The disease is as virulent and as deadly to-day among the vaccinally unprotected of all classes as it was before the discovery of Jenner, when the pock-marked face, the hideous deformity of eye and nose, and every feature, was as common among the nobility as among the denizens of the slums.

And here lies a duty of the public press: To exploit the value of vaccination and to urge its general and continuous enforcement. If it is not generally and continuously enforced, there is only one other method of preventing the recurrence of smallpox outbreaks whenever the aggregation of unprotected is great enough. That method consists in the maintenance of a non-intercourse quarantine against any infected place when the disease appears in this country. This is impracticable. There have been, since this epidemic began, a total of twenty-five States affected, exclusive of Canada and Mexico. Under the circumstances and conditions the outlook was clearly unavoidable.

4. What is necessary to prevent a recurrence of such outbreaks? Only by general and continuous vaccination can any community hope to escape outbreaks of smallpox. It is one of the oldest known diseases afflicting mankind; it is one of the most widely diffused, being epidemic in Africa and thence carried by commerce to every quarter of the globe; it is one of the most virulent and one of the most persistently contagious of diseases. Therefore we are likely to have its contagion, like the poor, always with us; and wherever the contagion finds a sufficient number of susceptibles there will be set up an epidemic outbreak.

The only known means to prevent such a disaster is by preventing the aggregation of susceptibles, and that this can be done by general and continuous vaccination is a demonstrated fact. It has been abundantly proven that just in proportion as vaccination is efficiently and properly performed—which implies its necessary repetition—it markedly diminishes mortality from smallpox; it renders smallpox a mild disease as compared with the disease in the unprotected; it is an almost absolute security against death from smallpox. And, on the other hand, it is just as incontestably proven that (in the words of the eminent English sanitarian, John Simon): "Wherever vaccination falls into neglect, smallpox tends to become again the same frightful pestilence it was in the days before Jenner's discovery; that wherever vaccination is universally and properly performed smallpox tends to be of as little effect as any extinct epidemic of the Middle Ages."

MISCELLANY.

The Board of Health of Dubuque, Iowa, have decided to burn the present building used as a pest house and to establish a new one on a boat in the river.

Gifts to Hospitals.—The will of William F. Sayles, of Pawtucket, R. I., includes bequests of $16,000 each to the Rhode Island Hospital and to the Rhode Island Homeopathic Hospital. These donations are to take the form of endowments of free beds, which will in perpetuity bear the names of the members of his immediate family.

The Red Parasol.—The fashionable "fad" of the red parasol is now defended on the ground that it is an efficient freckle preventer—the actinic rays of the sun, which it is claimed are the cause of the pigmentation, being intercepted in passing through a red medium. The swell practitioner will not neglect this obvious hint; he will see to it that the ephelidal disfiguration is duly prevented—whenever the ruddy hue suits the complexion.

Every Soldier His Own Surgeon.—It is now predicted that the wounded in the next war will be largely left to their own resources, because the surgical service has become so unwieldy that it must be greatly reduced. Archibald Forbes, the famous war correspondent, grimly sums it all up in the phrase: "Væ vulneratis!" Color is lent to this view by the fact that the British war office is considering a proposition that all soldiers be instructed in the elements of anatomy and physiology in order that they may be able promptly to stop the flow of blood from a leading artery. The proposer of the scheme also offers the suggestion that every soldier shall have the leading arteries mapped out on his body by dotted lines tattooed in India ink.

Scientific Cooking.—Not content with her activity in other directions, the advanced woman is invading the doctor's realm by efforts which, in the measure of their success, must rob the profession of a lucrative class of practice. She proposes to abolish dyspepsia by substituting scientific cooking for the ignorance which now rules the American kitchen, and is setting up "Rumfords" in universities, colleges and academies all over the land. In Boston, which is, as usual the center of this new crystallization of social forces, she has just held an exhibition of household economics, of which a feature was the practical demonstration, as given at the World's Fair last summer, of cooking by electricity, the plant consisting of oven, chafing dish, coffee pot, tea kettle, broiler, saucepan and hot plate. At this exhibition Edward Atkinson's Aladdin oven—the oven of the lamp—was also exploited as an instrument that the cook of to-morrow will not be able to do without.

Journalistic Enterprise.—Under this heading the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION says: "We congratulate our esteemed contemporary, the *New York Medical Record*, on its cable reports of the Eleventh International Medical Congress. The first instance of the kind, we believe, attempted in American medical journalism." While thanking our esteemed contemporary for these kind words of appreciation, we beg leave to say that is not the first instance of the kind, for a reference to the files of the *Medical Record* will show that cabled reports of the Copenhagen meeting in 1884, and of that in Berlin in 1890, were also presented to our readers.—*N. Y. Medical Record.*

A New Device.—Dr. Byron Robinson, of Chicago, announces a new device for intestinal anastomoses. It consists of two metal discs around whose circumference there is a groove. In the groove is placed a hollow rubber tube. The two discs are clamped together with a ratchet or spiral screw. The principle on which the device works is the same as Dennan's cylinders. The gut is gradually necrosed through by slow elastic pressure. The rubber, tube and pressure can be so controlled that the circular line of union may be of determined width. The elastic pressure avoids lateral fistula from too rapid or too violent force. The device is called the "rubber-faced disc."

The Nuisance of Carpet Beating in Populous Sections.—One of our contemporaries has the following suggestion as to carpet-beating in cities: "We have often been asked by citizens how articles to be cleaned should be treated without beating, and we beg to suggest that if they were spread upon the grass and thoroughly swept with a stiff broom moistened with water with which a little ammonia has been mixed, the object would be most thoroughly accomplished and one of the most dangerous and disagreeable nuisances to which our citizens are now subjected entirely abated. Articles of clothing should be hung upon a line and brushed with a hand-broom treated in a similar manner." In the country, it matters not about the shaking out of household filth, such as is deposited by myriad footsteps, but in cities the matter becomes a nuisance, dangerous and detrimental to the public health. This latter statement is embodied in the sanitary code of more than one of our cities many years ago, and long prior to the introduction of bacteriologic considerations. From the point of view of the bacteriologist, the wisdom of having a distinct prohibition against the reckless distribution of house-dust is undoubted. There is no record yet made up as to the exact numerical proportion of pathogenic germs, but we are prepared to take sides with those who hold that one of the filthiest things in nature is the dirt beaten out of a dirty carpet.

Royal Invalids.—So momentous are the events, affecting the lives of millions, that hinge upon the state of health of a few personages in Europe, it is no wonder that the condition of a royal larynx, the neuralgia of an imperial tympanum, or the sequelæ of an attack of grip in a monarch should be the perennial themes of speculation and the occasions for sensational utterances. "Caligula, a Study of the Madness of a Roman Cæsar," is the latest contribution to the literature of sick royalty. Claimed now to be a purely historical study, it has been denounced in Berlin as a scandalous document, intended to prove the Emperor William insane, and journals have been confiscated for attempting to give it publicity.

In the pamphlet, Caligula had inherited epilepsy from Germanicus, his father, a Crown Prince and popular soldier who suffered from an insidious disease that eventually carried him off. This is intended, it is asserted, for Emperor Frederick, while the grandfather, King William, is depicted under another pseudonym, and Bismarck figures as Marcus, a great statesman who had served Caligula's father and grandfather successfully and faithfully in building up a great empire only to be banished when Caligula ascended the throne. The Emperor's traits are accurately portrayed—his deformity of limb, his affection of the middle ear, his attacks of *petit mal*, his insomnia, feverish activity, fondness for military and naval display, even to his peculiarities of speech and drastic paraphrases of classical quotations.

While the pamphlet has not been seized and its author has not, as yet, been molested, the publication has caused such a profound sensation that an authoritative statement is made that "Emperor William is in better health, mentally and physically, than ever before; that for eighteen months he has not suffered pain in his neuralgic ear, and for a year he has not been troubled with insomnia; that his face is fuller and browner than ever, his stride is quick and springy, and his greetings to the people always betray good spirits." Whereupon the *quid nuncs* murmur:

"Methinks the lady doth protest too much."

Meanwhile, it is well known that King Humbert, of Italy is afflicted with cancer of the larynx, almost identical, as to location and character, with that of the late Emperor Frederick, William's father,—the disease of which Gen. Grant died and which carried off the British Ambassador at Rome last year. And as a sequela to his recent attack of the grip, Alexander III, Emperor of Russia, has developed symptoms of a permanent affection of the lungs so serious in its nature as to render necessary a change of the imperial residence to Kiev, where the climate is more favorable than at St. Petersburg.

Philadelphia Notes.

THE TRUSTEES of the Jefferson Medical College held a meeting May 21, when they discussed the question of reorganization, and the appointment of a Provost, as proposed by the Alumni Association, and decided to postpone further consideration to a subsequent meeting. The next regular meeting will be held in September when final action will probably be taken. The impression is that the Trustees are averse to making this change of management. Dr. S. MacCuen Smith was elected Clinical Professor of Otology; W. Joseph Hearn, Clinical Professor of Surgery; and E. P. Davis, Clinical Professor of Obstetrics.

EXPEDITIOUS EXAMINATION OF SPUTUM FOR TUBERCLE BACILLI.—The following method is followed in the laboratory of the Medico-Chirurgical College, by Prof. Laplace:

1. Apply a small speck of recent sputum to a cover-glass, spread it out thin, and let it dry by waving it to and fro in the air.

2. Slightly heat the cover by passing it through the flame of an alcohol lamp, three times, rather slowly.

3. Stain the portion of now thoroughly dried sputum by pouring upon it a few drops of the red stain (Ziehl's solution, composed of fuchsin, 1 part; carbolic acid, 5 parts; alcohol 10 parts; water, q. s. to make 100 parts). While the solution is on the cover-glass, hold it in the flame of the lamp and heat until the vapor rises.

4. Decolorize at once, by immersion in water acidulated with nitric acid.

5. Pour some alcohol over it, and finish decolorizing by repeated immersions in the acidulated water, if required.

6. Pour some distilled water over the specimen and wash it until clear and apparently colorless.

7. Color the background by staining with methylene blue solution.

8. Dry the specimen.

9. Apply to slide and mount in Canada balsam.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from May 19, 1894, to May 25, 1894.

Major PETER J. A. CLEARY, Surgeon, is granted leave of absence for four months.

Capt. WILLIAM G. SPENCER, Asst. Surgeon, having been found by an Army retiring board incapacitated for active service, will proceed to his home.

Lieut.-Col. FRANCIS L. TOWN, Deputy Surgeon-General, is relieved from temporary duty in the office of the Medical Director, Department of the Missouri, and will report in person to the Commanding General, Department of Texas, for duty as Medical Director of that Department.

Capt. ALONZO R. CHAPIN, Asst. Surgeon, is relieved from duty at Ft. Hancock, Texas, and ordered to new Ft. Bliss, Texas, for duty.

First. Lieut. FRANCIS A. WINTER, Asst. Surgeon, is relieved from duty at new Ft. Bliss, and from temporary duty at old Ft. Bliss, Texas, and ordered to Ft. Hancock, Texas, for duty at that post.

Capt. GEORGE MCCREERY, Asst. Surgeon, will, upon the abandonment of Ft. Sidney, Neb., report in person to the commanding officer, Ft. D. A. Russell, Wyo., for duty at that post.

Capt. ROBERT R. BALL, Asst. Surgeon, is relieved from temporary duty at Ft. Monroe, Va., and ordered to Ft. Adams, R. I., for duty, relieving Capt. WILLIAM C. BORDEN, Asst. Surgeon. Capt. BORDEN, on being thus relieved, is ordered to Ft. Snelling, Minn., for duty at that post, relieving Capt. CHARLES F. MASON, Asst. Surgeon. Capt. MASON, on being thus relieved, will report in person to the Superintendent of the U. S. Military Academy, West Point, N. Y., for duty at that post.

CASUALTY.

Col. JOSEPH C. BAILY, Asst. Surgeon-General, died May 16, 1894, while *en route* from El Paso to San Antonio, Texas, in the line of duty.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending May 26, 1894.

Asst. Surgeon B. R. WARD, from the Bureau of Medicine and Surgery, and to the "Vermont."

Surgeon C. A. SIEGFRIED, ordered to the "Cincinnati."

LETTERS RECEIVED.

(A) American Druggist Publishing Co., New York, N. Y.; Akins, W. T., Decatur, Ill.; Atkinson, W. B., Philadelphia, Pa.; Allison, H. E., Fishkill, Landing, N. Y.

(B) Browning, C. C., Messina, Cal.; Boise, Eugene, Grand Rapids, Mich.; Berger, L. C., Philadelphia, Pa.; Burnett, W. E., Norris City, Ill.; Bacon, L. C., St. Paul, Minn.; Banta, C. F., Eureka, Ill.; Brien, C. D. V., Ackley, Iowa.

(C) Christian, G. W., Houston, Texas; Chaillé, S. E., New Orleans, La.; Cittadino, N., New York, N. Y.; Canfield, W. B., Baltimore, Md.

(D) Dean Medical College of Indiana, Indianapolis, Ind.; Dunglison, R. J., (3) Philadelphia, Pa.; Dow, Edmund Scott, Allston, Mass.; Davis, E. W., Howard, Kan.

(E) Ewing, W. Brown, Wernersville, Pa.

(F) Fox, L. W., Philadelphia, Pa.; Fitz, R. H., Boston, Mass.; Furniss, S. A., Indianapolis, Ind.; Fralich, F. J., Louisville, Ky.; French, Pinckney, St. Louis, Mo.

(G) Green, H. L., Chicago, Ill.; Griggs, Clarence, Ottawa, Ill.

(H) Hotz, F. C., Chicago, Ill.; Henkel, F. W., Chicago, Ill.; Hibberd, Jas. F., Richmond, Va.

(I) Irish, James D., Madison Barracks, N. Y.

(K) Kuhlmann, Helene, Buffalo, N. Y.; Kukley, C. A., Toledo, Ohio; Kingsbury, D. W., Nanticoke, Pa.

(M) Modern Medicine Pub. Co., Battle Creek, Mich.; McLellan, E. A., Boston, Mass.; Myers, N. Ray, Wanamie, Pa.; Magruder, G. L., Washington, D. C.

(N) Neptune, J. W., Elmo, Kan.

(P) Pratt, J. W., Boston, Mass.; Pilcher, Jas. E., Youngstown, N. Y.; Pischl, Kasper, San Francisco, Cal.; Pantagraph Ptg. and Sty. Co., Bloomington, Ill.; Patton, R. S., Monmouth, Ill.; Paquin, P., Lebanon, Mo.; Patch, E. L., Stoneham, Mass.; Playter, Edward, Ottawa, Canada.

(R) Rochelle, W. F., Jackson, Tenn.; Ransohoff, Joseph, Cincinnati, Ohio.

(S) Snodgrass, H. L., Buffalo, N. Y.; Schulze-Berge & Koechl, New York, N. Y.; Short, J. L., Rolla, Mo.; Souchon, Edmund, New Orleans, La.

(T) Townsend, R. B., Glenwood, Mills Co., Iowa; Turpin, T. J., Tallulah, La.; The Troy Buggy Works, Troy, Ohio.

(V) Valentine Meat Juice Works, Richmond, Va.

(W) Woodruff, L., Alton, Ohio; Woodbury, Frank, Philadelphia, Pa.

(Y) Ybarra, A. M. Fernandez, New York, N. Y.

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ADDRESS.

PRESIDENT'S ADDRESS.

Delivered before the American Medical Association at the Forty-fifth Annual Meeting held at San Francisco, June 5, 1894.

BY JAMES F. HIBBERD, M.D., LL.D.

RICHMOND, IND.

Members of the American Medical Association:

A year ago in the great city of Milwaukee, on the shore of the inland sea, it was my privilege to express my surprise and to offer my thanks to the members of the American Medical Association for the distinguished honor conferred by elevating me to the Presidency of this paramount Medical Society of the United States, and to-day, in the greater city of San Francisco, within sound of the surf on the eastern shore of the wide Pacific Ocean, I rise to iterate the expression of my appreciation of the honor bestowed and again to extend thanks therefor.

We are assembled here this morning to open the forty-fifth annual meeting and celebrate the forty-seventh anniversary of the organization of the American Medical Association; to continue the noble work it has successfully prosecuted all the years of its existence; to commune professionally and declare the progress of medicine during the association year just ending; to fulfil the service of the present Association program and to arrange for a fresh one for our successors; to greet old friends and to make new acquaintances. And we come to our duty this morning with buoyant spirits, invigorated by the inspiring scenery we have traversed since leaving our homes, our stay here made prospectively profitable by the scientific menu our program presents, and our social and scenic enjoyment of richest promise through the thoughtful labor and esthetic taste of our efficient Committee of Arrangements, the nature and extent of which has just been rehearsed by its Chairman.

We are not here at the time nominated at Milwaukee. Soon after the adjournment last year, the statement was made that if the meeting this year should be held on May 1, as ordered, time would not be offered State societies to act on the question of the revision of the Code of Ethics as has been recommended by the Association, and change of the date of this meeting was suggested. This sentiment increased and other reasons for the change were added. The pressure growing stronger and more urgent, conferences were held in Washington during the session of the Pan-American Medical Congress. Many consultations were held at other times and places, and much correspondence was had without finding any opposition to the change and accordingly it was made, and published in the Journal of the Association, Nov. 11, 1893.

At every annual meeting the officers of the Association, particularly the Permanent Secretary and the Treasurer, have difficulty in appeasing delegates who are not received because the credentials presented by them have not been issued by a society entitled to representation in the Association. The law regulating this matter is plain, to-wit: "The delegates shall receive their appointment from permanently organized State medical societies, and such county and district medical societies as are recognized *by representation* in their respective State societies."

The difficulty lies in the fact that some of the State societies are not representative bodies, and consequently this constitutional provision cuts off all delegates from such States except those commissioned by the State society itself. While this is the letter of the law it is not the spirit that animates the organization of the Association. The Constitution should be revised in this particular at least. There are two ways of overcoming the trouble: 1, strike out the words, "representation in" from the Constitution where it prescribes the qualifications of delegates, leaving all such county and district medical societies as are recognized by their respective State societies fully authorized to commission delegates to this Association. The other and better plan would be for every county society in each State to be represented in its State society. Facile methods of accomplishing this can readily be selected; perhaps the plan of organization so long in successful and satisfactory operation in Indiana might serve as a paradigm. There each county has its society, known by the name of the county, and the State society is composed of all the members of all the county societies. Annually each county society selects delegates to the State society, and at the same time nominate delegates to the American Medical Association who are commissioned by the State society. This simple plan secures substantial autonomy to the county societies and provides for equal representation to the Association from every part of the State. Every member of every county society can attend the meetings of the State society and participate in all business except voting. This seems to me both theoretically and practically adapted to a complete organization of the profession in every part of the Union, and if this Association at this session would formulate a scheme similar in spirit and in terms and recommend it to the consideration of such State societies as do not now have an equally serviceable organization, it would in my judgment be doing a good work, sowing seed that would bring forth sound fruit in the future. In Indiana the State society and each county society is a legal corporation, and while this is not essential to its method of organization of the profession of the State, it is to my mind desirable.

In this connection I desire to lay before you some thoughts touching the arrangement of subordinate medical societies in their relation to the American Medical Association. Every medical man who belongs to any medical society should belong to a

county, or an equivalent medical society, and every member of a county society should be *ipso facto* a member of his State society, and this an *open sesame* to the American Medical Association. By this arrangement all reputable physicians in the United States would be brought together in a common guild, whose power to do good within its legitimate sphere would be limited only by its aggregate wit and energy. Such a consummation would place this Association in a position to fulfill the mission hopefully anticipated for it by its earnest and patriotic founders, and would elevate the American profession to a plane for useful work the highest conceivable for the disciples of scientific medicine.

This would in no wise interfere with the organization of medical men devoted to special lines of practice or investigation; indeed the more of these, and the more special their fields of labor and inquiry, the more rapid will be the development of medical knowledge, the nearer will expert art approach to perfection and the greater will be the blessing to humankind. In these special and limited societies there will be a concentration of thought and labor that will yield results advanced and true to a degree beyond hope from a more promiscuous assembly.

All the adherents of the special organizations will be members of county societies and thereby of their respective State societies, whence, for the asking, they can step through the portals of this Association and find in our Sections a department already organized and at work into which they can enter, each according to his tastes or qualifications, and feel at home among fellow laborers.

A member of either of these special organizations entering the appropriate Section will find himself in the midst of all the members of the Association whose tastes run parallel with his own, whether specialist or general practitioner, and it is this mingling of these sundry classes of investigators and practitioners, exchanging views and detailing experience, that creates the vast stores of profit and pleasure so much enjoyed at our annual meetings. In this scheme for the organization of the American medical profession is there not promise enough to make us hope and labor for its early consummation?

A sentiment was expressed last year at Milwaukee by a member and has, I think, some currency among other members, that indicated a misconception of the character and *personnel* of the Sections as I view them. The sentiment was uttered in a private discussion of the propriety of conferring on the Business Committee the functions of the Nominating Committee, and was substantially this: My colloquist said: "The Business Committee is made up of ex-chairmen of Sections; the Sections are in the hands of specialists; the specialists reside in the greater cities and consequently the Business Committee will be constituted of special practitioners who hail from the greater cities, and some of the cities are great enough to furnish half a dozen chairmen at once. This will not only exclude general practitioners from a voice in the selection of officers of the Association, but may by chance or design place the general business of the Association under the management of specialists from a few of the more important cities of the country." The error of this representation lies in the fact that its entertainers fail to recognize that the aggregate membership of the Sections at each annual session is the total membership of the Association in attendance. True, in each Section there will be members of the special society whose work is the same as that to which the Section is devoted, and there will be others whose engagements are limited to the same line of practice, but these combined, except in two or three Sections, will not number more than a small minority, probably not a tenth, of those enrolled in the Section; the other nine-tenths will be general practitioners whose professional proclivities have directed them to the Section, and these general practitioners have the power by their votes, the right by virtue of their membership, and the obligation under their duty to the Association, to elect the best man in the Section to its chairmanship without inquiry whether he lives in a big city, a little city or a hamlet, and in so doing will make it patent to every thoughtful mind that the *personnel* of the Business Committee will be selected under conditions to insure as intelligent, as well distributed, and trustworthy a committee as the Association can secure. And moreover the function of a nominating committee is to nominate, not elect; confirmation or substitution is in the authority of, and always exercised by the Association. I am led to present this subject in this light and to this extent, because I feel that a majority of the members recognize the imperfections of our present mode of selecting the Nominating Committee, and realize that the welfare of the Association calls for a committee which has elements of permanence in its organization and whose *personnel* has been selected with something of deliberation.

When Dr. Geo. M. Sternberg was appointed Surgeon-General of the Army in May last, he made two innovations in the administration of the affairs of the office: 1, in establishing an Army Medical School to give passed candidates for appointment to the Army, laboratory practice in bacteriology, sanitary chemistry and other essential instructions for military service; 2, the position of attending surgeon in cities having good facilities for medical improvement be filled with young men who are preparing for promotion.

These changes did an excellent work that was accomplished without additional expense to the Government; the Museum and Library Building furnished the rooms, and the medical officers on duty in Washington did the teaching in addition to their regular work. But the number of active young surgeons about Washington and other cities attracted observation, and led the Chairman of the Committee on Military Affairs to conclude there was a surplus of Assistant Surgeons, and in his report to the House he reduced the number from 125 to 90, thus inhibiting fresh appointments until the number shall be reduced. This recommendation has passed the House, and if it should be approved by the Senate will greatly embarrass the medical service of the Army, and in the end be a serious detriment to the country, because many military posts will have to depend on civil physicians for medical attendance, and in case of war these would not take the field, and the Army would be without trained medical officers, which would be as serious an evil as unskilled officers in any other department. When these facts were pointed out to the Chairman of the Committee by other members with better knowledge of practical military affairs, the Chairman replied that no one outside the Army surgeons had complained, not a single medical society had claimed that any injury would result. Let the American Medical Association at once call

the attention of Congress to the mistake threatened.

Many of you may remember that the last Congress of the United States was about to refuse an appropriation to continue and complete the publication of the Index Catalogue of the Library of the Surgeon-General's office, the venerable Chairman of the House Appropriation Committee alleging that the medical fraternity were demanding too much, in fact had already received more than the lawyers or any other professional guild. This state of affairs becoming a matter of common fame, some physicians interested their representatives in the House by presenting to them the true state of affairs, with the result of a concerted effort being made in the House to enlighten the assembly to the extent of convincing the members that this was not an appropriation for the benefit of medical men, but to complete a great educational work for the benefit of the whole people, the doctors' relation to it being that they must do the work because no other class of men were trained to the service. The appropriation was saved and the catalogue is nearing completion.

But there is still a point in connection with the appropriation for the Library that needs attention, that can probably be better given by this Association than otherwise, and that is the restoration of a part of the appropriation for the support of the Library which was dropped by the last Congress, and the cut continued in the military bill before the present House. For twelve years the appropriation was $10,000, but the last Congress reduced it to $7,000, and the present Congress proposes to continue the reduction. Doubtless most Congressmen, and possibly some physicians, regard the Library of the Surgeon-General's office as an ordinary department library intended mainly for the use of the medical officers of the Army, but in truth it is the National Medical Library, open to, and used by, physicians from all parts of the country, and the possibility of finding at one place in this country the greater part of the literature on any medical subject has exercised a powerful influence on American medical literature and education.

The Library aims to obtain every medical book, periodical and report published in any country or language as soon as possible after it is issued, and have it at once catalogued and indexed and made available for use. This requires about $7,500 annually. There are still between twenty and thirty thousand volumes of medical books, published years ago, required to complete its equipment to meet all calls made upon it. These volumes are out of print and only to be had from second-hand booksellers and auction sales as opportunity offers, and will involve say $2,500 spent annually for perhaps ten years. Does not this condition of the Library and its support make a demand on this Association for aid, either as an organization or through the influence of its individual members on their respective members of Congress?

The desirability of supervision of public health by the general government has been recognized by this Association for many years and manifested in various ways. Four years ago a committee with Dr. C. G. Comegys, chairman, was appointed to prepare a bill, and petition Congress on behalf of the Association to establish a Department of Public Health with a Secretary for its chief who should be a member of the President's Cabinet. This committee has done much earnest work, drafted a bill and presented it to Congress, devoted labor and time personally to its advocacy before committees and members of Congress. The committee has been continued, somewhat modified, and has reported annually to the Association and will present an interesting report to this meeting to which I invite your thoughtful attention. Last year the Association appointed another committee with Dr. U. O. B. Wingate as chairman, to consult with a like committee of the American Public Health Association which has for several years been engaged in an effort to induce Congress to enact a law placing the supervision of the public health in charge of the general government. This committee will also submit a report for your consideration.

Other organizations have likewise entered Congress with petitions asking that the general government be clothed with authority to execute such measures as to assist in protecting public health. Much good may be anticipated from the attention these several sanitary organizations will excite, both in the congressional and public mind, and I doubt not that when the agitation has accomplished the valuable result of cultivating a knowledge of what is essential to the public welfare it will lead to a union of effort on the part of all workers that will insure satisfactory results.

My interest in the premises is such that during the year I have sought through personal intercourse and a wide range of correspondence to ferret out the best plan for supervision of public health that we can hope to have Congress crystallize into a working law. Without rehearsing details, I feel free to declare my conviction that enough has been ascertained of the sentiment of the Executive and Legislative Department of the Government to rob us of all hope of the establishment of a Department of Public Health within the remainder of the nineteenth century.

A Bureau of Public Health with a Commissioner as its chief, within one of the existing Departments of the Government was apparently within reach of a united, harmonious, aggressive effort of the profession for a year or two previous to the enlargement of the power of the Marine-Hospital service by the last preceding Congress, but the excellent work of that service at home and abroad since its increase of authority and means, has lessened the anxiety of the Government and the apprehension of the public in such degree as to make those in power less attentive to appeals to do what should yet be accomplished.

The outlook at this time for securing a Bureau of Public Health during this session of Congress is not encouraging, but if the problems in silver, tariff and national revenue should be speedily and satisfactorily solved there might appear a ray of hope for a Bureau within the life of the present Congress, provided the medical and sanitary professions would make common and joint effort in demanding it.

At present there is no measure formulated in this behalf so worthy of support as the New York Academy bill now in the hands of Congress, and in making this declaration I by no means ignore the fact that strong opposition to that bill has been made by strong men; I well know that no important measure like that can be inaugurated without challenging adverse criticism, but my abiding faith in the fitness

of sanitary human nature for great things is such that I harbor no doubt that if the opposition to this bill present a better than it, its friends will accept, and if this bill sustains its present status under severest scrutiny, its opponents will join in urging its enactment into a law and thereby vindicate characters at once wise and patriotic.

While a century of experience has convinced the great body of intelligent people that vaccination is the true and only prophylactic for smallpox, it has not carried conviction to the extent its merits deserve and the welfare of the people demands. The causes of this are not difficult to discern; vaccination and other forms of sanitation have prevented a visitation of the epidemic of smallpox in this country for a generation and the people have lost the fear of its contagion through ignorance of its nature while progressing, and its sequels if its victims survive. Add to this the disorders that sometimes follow the insertion of pure vaccine in a cachectic system and the greater evils arising from the use of spurious or imperfect vaccine and careless vaccination, all open to the observation of the public and subject to amplification by cranks and the maliciously ignorant, and we can not marvel that there is a positive distaste for vaccination among a considerable portion of our population, and a carelessness about securing it on the part of a much larger number. A knowledge of these facts should only inspire physicians and other sanitarians who are the custodians of the knowledge of the value of vaccination to protect from smallpox, as much so as smallpox itself, and that with pure vaccine inserted under proper conditions into the tissues of a person fit to receive it there is positively no shadow of evil, but a promise of good not surpassed by any other single measure of preventive medicine.

Evidence accumulates that the undetermined conditions that conduce to the propagation of smallpox are now, and for at least two years have been, prevalent in this country, resulting in outbreaks of the disease more or less serious in various parts of the country and too often leaving foci from which fresh infection is distributed. Under these circumstances it seems to me the reasonable duty of this Association, at this time, to declare and proclaim its unabated faith in the virtue of vaccine to protect from smallpox, to render persons as immune against variola as an attack of variola itself, and that it is innocent of all mischief when the vaccination is done by a vaccinator who is a competent judge of both the purity of the vaccine and the fitness of the vaccinee.

Let us abide in the hope that the Jenner centennial celebration provided by this Association and to be a part of its exercise at the annual meeting in 1896, may bring out the boundless blessing of the discovery of the immortal Jenner in such wise that all men shall see and acknowledge its protecting power, and even the wayfaring man, though a fool, may not err by further causeless cavil.

Two leading purposes the fathers of this Association had in view at its organization, demanding its serious consideration, were the elevation of the standard of medical education, and that the authority to decide upon the sufficiency of the qualification of a candidate for a diploma should not rest with his teachers.

Much has been done in advancing the extent and character of the collegiate instruction of medical students; the examination of candidates for diplomas is still conducted by teachers who instructed them as was done then, and is no more satisfactory to the thoughtful minority of the profession now than it was then. Forty-eight years ago, seven professors was the conventional number of the faculty for medical colleges, and the annual term was twenty weeks, and in the two terms required for graduation the students heard the same lectures each year. Now there are medical colleges requiring attendance four years, of seven months each, on graded courses under, in some instances, as many as forty-eight instructors. This for the equipment for graduation, while one post-graduate school announces one hundred and sixty-four instructors. Certainly the Association has ground to congratulate itself on the fruits of its persevering labor to secure more thorough medical education, but this has been the theme of so much of the literature of the Association that I drop the general subject and confine my remarks to one suggestion as to a particular line of instruction.

The progress of medicine in the immediate future must be along biologic lines, and it seems to me desirable that every medical college should have a chair devoted specially to instruction in biology. Within the current year, responding to an invitation to make some remarks on matters pertinent to a lecture on bacteria which had just been delivered, a gentleman of superior culture, of extensive travel and acute observation, a lawyer by profession and a statesman by practice, said that the status of physicians had within comparatively a few years undergone a marked change. In earlier historical times the priests were accounted of highest rank and worth in the civil professions, then came a period when the devotees of statecraft received highest honor and exercised most potent influence in the affairs of men. Physicians held subordinate rank and positions both in war and in peace, but in the last few decades the relations of these professions among themselves, and in their standing before the world, had been undergoing significant change until, from being the lowest, physicians were now rising above the other liberal professions and would steadily move forward until they were accorded the first place among honored people of the world, and this for the reason that they have devoted themselves by rigid scientific investigations to make patent the causes of disease and to determine exact measures for emasculating these causes, and for neutralizing their effects when they had eluded detection or escaped emasculation. My own sentiments accord entirely with the spirit of the views enunciated by the learned gentleman, and my estimate is based on the result of the more exact method applied to the investigation of the laws by which the omnipotent Creator has fashioned the world and continues its government. The microscope in skilled hands, and its revelations compared and classified with scientific acumen, have revolutionized our knowledge of the world of living things below the world of microscopic living things, and in this minor, and, to us, newly revealed world, has been discovered the generators of the most extensive, persistent and malignant epidemics that periodically decimate the earth, as well as many of the most frequent and intractable, and fatal disorders that we have always with us. All this knowledge has been wrought out by the devotees of one branch of biology; and an-

other line of biologic workers have carried us back through the morphology of organs, tissues and cells to the origin of vital activity in protoplasm, and, still more important, in doing so have given us glimpses of the origin and development of the somatic mind that will, when the scheme of nervous organization and function shall be clearly portrayed, dissolve the mystery that has in the past obscured our realization of the true nature of hypnotism, Christian science, and other anomalous neuroses which the sciolists, and in an especial manner those claiming to be doctors, are promulgating and practicing to the discredit of true scientists and the injuring of the ignorant and weak-minded classes.

We should apotheosize protoplasm, the dividing line between inorganic and organized matter, itself at once the result of the law of perpetual motion with which the Creator endowed the atoms of elemental matter, and the beginning of that phase of energy known as vital activity, which, in its development as now presented to us, constitutes the entire vegetal and animal kingdom.

No one people or class of people can claim exclusively to have opened the way into this more primitive arcana of nature. The physicists of all nations, botanists, zoölogists, anatomists, physiologists, and their congeners have all participated in this progress. Schwan and Virchow and Ferrier and Jackson and Pasteur and Kock and Sternberg may be mentioned, without prejudice to the labor, name or fame of their many coadjutors, as examples of what benefactors to our race scientists may become, whose genius lifts them to a plane of investigation not covered by the curricula practiced in the medical school of their day, and their distinction is due to their advanced study of biology.

This review impresses me with the importance of establishing in each of our medical colleges where a finished education is intended, a chair especially devoted to teaching the principles and practice of biology on the lines and to the extent herein indicated, from whose alumni we shall have more quickly arise neophyte Virchows, Pasteurs, Jacksons and Sternbergs, whose labors, when further advanced, shall hasten the day when the world shall recognize the medical profession as the paramount benefactors of the human race, by virtue of suppressing the causes of all preventable diseases and alleviating the suffering, shortening the duration, and lessening the ravages of such as can not be prevented, and with this higher estate of the disciples of Esculapius will come such insignia of real knowledge, such fruit of expert skill, that he who runs may read the lines that broadly separate the true position from ignorant or unscrupulous pretenders.

Amendments to the Constitution are always pending; sometimes many, sometimes few; those submitted the preceding year are disposed of at each annual session, but others take their place for consideration at the succeeding meeting. Few of these are approved by the Association, being lost through failure to receive the support of three-fourths of the delegates present or by not being called up by their authors or others.

Last year a special committee appointed at the last preceding meeting made a report remodeling the entire Constitution which necessarily laid over until this meeting and the committee, being continued, will make further report here and the whole subject will come up for final disposition at this session. It is apparent to all who have given attention to this matter that there is much feeling among the members who have been active in working up the changes that will be offered as a substitute for the Constitution as it now exists, and also among those who regard the innovation as an evil instead of a benefit. But while these feelings are right and proper in themselves they need not claim other than watchful attention to secure a fair and unbiased expression of the will of the Association, according to the method prescribed by our laws, and in so doing there is nothing to excite passion or interfere with that deliberation that should distinguish the proceedings of an assembly composed of cultured and refined people seeking the welfare of the guild to which they belong. This may readily be done by taking a vote to determine whether the voters present desire any change in the existing Constitution. If this decision is against any change, that is conclusive for the nonce. If the decision of expressing this satisfaction with the Constitution as it is, the next question should be, Is the report of the committee of revision precisely what the voters want as a substitute? An affirmative vote here settles the matter, and a negative will call for amendments that will adjust either the existing Constitution or the committee's substitute until it conforms to the wish of the delegates. Is it not palpable to every considerate mind that all this may be done without excitement of any kind and with a minimum waste of time of the Association?

And so, too, with our Code of Ethics. For many years there has been a feeling among many most excellent and intelligent working members of our guild that the Code did not fairly accord with the demands of the advanced profession in their intercourse with each other, nor with the proper reciprocal relation between the profession and the public. While on the other hand, many members equally intelligent and devoted to the Association, have felt that the Code of Ethics that has guided the Association through nearly half a century prosperously and honorably, and still is a reliable guide in every advanced thought and action, can not be bettered for our present status, and should not be disturbed. At Detroit, in 1892, this agitation culminated in the appointment of a committee to inquire into the expediency of revising the Code. This committee last year submitted two reports, the majority recommending an amended Code, and indicating the lines on which emandation should precede. The committee was continued to complete its labor, and the fruit of its service will be before you in an extended report. The minority report claimed the sufficiency of the Code as it is, and recommended that it be left intact. Here also, even more than with remodeling the Constitution, there is much warmth of feeling, and as in that case a little calm forethought will convince that a primary vote involving the question whether or not the voters want any alteration of the Code may end the consideration of the subject without excitement, confusion or overwarmth of feeling, by a decision to let the Code stand as it is, and the contrary decision will call for such further procedure as recited for the completion of an amended Constitution, and in this as in that, the work should be done as intelligent and fair-minded citizens transact important business, with decorum and without waste of time.

Touching the sufficiency of the Constitution and Code of Ethics of the American Medical Association, as they are now, I have well-settled convictions, the result of many years of observation, experience and reflection, but I am not here to proselyte to my opinions; as I interpret my mission on this occasion it is to exercise my influence and use my authority to secure to those here entitled to vote, a clear, untrammeled judgment, and to encourage a cheerful acquiescence of all parties in whatever conclusion may be thus reached. Shall I not have the coöperation of every friend of the American Medical Association present in this laudable effort?

ORIGINAL ARTICLES.

A CLINICAL STUDY OF THE SO-CALLED REFLEX NEUROSES.

Read before the Chicago Medical Society, June 4, 1894.

BY H. GRADLE, M.D.
CHICAGO.

Observations gathered mainly during the last fifteen to twenty years by numerous authors have shown that there are many nervous ailments which owe their origin to a minor local disease or anomaly in some part of the body. Yet this subject of reflex neuroses has neither received adequate recognition in general text-books, nor has it been fully appreciated by the profession at large. The interest of such a subject to the general practitioner depends upon the frequency of these ailments. In this respect views differ widely.

Ophthalmic and rhinologic observers have, perhaps more than any other, contributed to this subject and their reports abound in instances of this kind. Indeed some specialists no doubt exaggerate by including under the head of reflex neuroses, conditions, the reflex origin of which is not yet established nor even probable. Many text-books on nervous diseases, on the other hand, slight the subject, or like the treatise of L. C. Gray state that reflex neuroses are rare occurrences. Yet even widely different views as to the frequency of reflex neuroses are not wholly irreconcilable, if we but use the term with strict definition of its meaning. According to gradual usage the name, "reflex neuroses," is at present applied to any *abnormal* nervous process started by the irritation of some peripheral sensory area. This definition by itself enables us to distinguish between mere symptoms which are the *normal* and invariable consequences of disease of a given sensory part, and the reflex neuroses proper which are brought on by such irritation only under certain circumstances. In fact, characteristic of reflex neuroses is their apparent capriciousness. The same peripheral lesion which leads to a reflex neurosis in some patients may exist in others without producing such disturbances.

It is evident that if we accept this definition, very many headaches, neuralgias and motor disturbances come under the head of reflex neuroses, and that this nosological group hence includes many of the ailments daily met with. On the other hand, it may be admitted that epilepsy, chorea and other types of nervous disease of graver significance are probably but rarely of reflex origin.

The term "reflex" is used by the clinicist in this connection in a wider than its true physiologic significance. As the physiologist speaks of the act of winking as a reflex induced by conjunctival irritation, so the clinicist may call a blepharospasm a reflex neurosis, if it is maintained by conjunctional disease. But to speak of a neuralgia due to a diseased tooth as a "reflex" occurrence is not warranted by physiologic nomenclature. We must either intentionally enlarge the significance of the term "reflex," or we may call these nervous disturbances, *neuroses* of *peripheral origin*, and subdivide them into motor, secretory, vaso-motor, sensory, (and possibly inhibitory) neuroses of peripheral origin. Even the motor "reflex" neuroses are not always reflex in the sense of the physiologist. Some of them, it is true, are but types of normal reflex action morbidly exaggerated. As such might be mentioned sneezing fits from nasal disturbances and blepharospasm from ocular irritation. In other instances, however, such as asthma and reflex epileptiform convulsions, the nervous disturbance has no physiologic prototype. Unlike the normal reflexes, these motor phenomena are not the immediate consequence of the irritation to which they owe their origin. The peripheral excitation does not lead at once to a reflex action, but its continuance influences the nervous centers so that *periodic* discharges occur in the nerve channels which are normally not open to impulses of such origin. *Periodicity* is also a feature of some sensory neuroses like migraine and the so-called visceral neuralgias. Other sensory neuroses, however, such as many forms of headache and neuralgia are either constantly present or recur with every increase of the peripheral irritation.

In order to have a definite basis for further discussion of the subject I will now tabulate the neuroses of peripheral origin, the existence of which has been satisfactorily established by the observations of more than one author. Without attempting any full review of the literature I will only quote as authorities some of the writers who reported either the first or the most conclusive instances of such neuroses, or who have summarized the literature. I may add that I have personally seen illustrations of nearly all the quoted neuroses of ocular and nasal origin.

STARTING POINT.	NEUROSIS.
Anomalies of refraction and accommodation of the eye[1] and some instances of anomalies of the external muscles.[2]	Headaches, continuous or periodic. Vertigo. Nausea. Ciliary spasm. Blepharospasm and chorea of facial muscles. Epilepsy (rare).
Diplopia from insufficiency of one of the external muscles of the eye.	Deviation of the head simulating wry-neck.[3]
Nasal disease[4] and suppuration of maxillary sinus.[5]	Lachrymation. Discomfort in eyes and lids.[6] Scotoma fugax (blind headache).[4] Vaso-motor disturbances of lids and face.[4] Headaches.[4] Neuralgia of branches of trigeminus. Vertigo. Facial spasm.[7] Cough.[8] Spasm of glottis.[4] Asthma.[4, 9] Nightmare. Epileptiform convulsions.[10] Functional cardiac disturbances.[11] The symptoms of exophthalmic goitre.[12]

[1] S. Weir Mitchell. Am. Jour. of Med. Sciences, April, 1876. Numerous contributions in the Ophthalmic Section of the Am. Med. Association since 1880. Gould, in Am. Jour. of Med. Sciences, Jan. 1890, and Med. News, Aug. 23, 1890.

[2] Stevens, Functional Nervous Diseases, 1887. Swan M. Burnett, Transactions of the Am. Ophth. Society, 1891.

[3] Nieden, Centralblatt f. Augenheilkunde, Nov. 1892. E. G. Colburn, Proceedings of the Ophth. Section Am. Med. Ass'n, 1893.

[4] W. Hack, Berliner klin. Wochenschrift, 1882, No. 25, and Ueber eine operative Radical—behandlung bestimmter, Formen von Migräne, Asthma, Henfieber, sowie zahlreicher anderer Erscheinungen, Wiesbaden, 1884. Schaeffer, Duetsche med. Wochenschrift, 1884, pp. 357 and 376. Sommerbrodt, Berl. klin. Wochenschrift, 1885, Nos. 10 and 11. Complete summary by J. A. White, Art. Neuroses of the Nose, &c., in Vol. II, Burnett's Syst. of Dis. of the Ear, Nose and Throat, 1893.

[5] Scheinmann, Berl. klin. Wochenschrift, 1893, Nos. 49, 50, 51.

[6] Gruening, N. Y. Med. Record, Jan. 30, 1886. Gradle, Proceedings Ophth. Section Am. Med. Ass'n, 1892. Journal of the Am. Med. Ass'n, Sept. 10, 1892.

STARTING POINT.	NEUROSIS.
Ears.	Vertigo. Nystagmus.[13] Cough (rare).
Pharynx and faucial region.[4]	Cough. Epilepsy.[14] Spasm of glottis. Morning vomiting.[14]
Teeth.[15]	Neuralgia of Trigeminus. Otalgia. Headaches. Facial spasm. Epileptiform convulsions.[16]
Stomach[17] and intestinal tract.	Headache. Vertigo. Trigeminus neuralgia.[18] Visceral neuralgias. Cardiac and circulatory disturbances. Epileptiform convulsions.
Painful peripheral cicatrices.	Epilepsy.[19]

This list would be incomplete without reference to neuroses originating from disease of the pelvic organs[20] and the male genitals (especially adherence of the prepuce).[21] But since I have no personal experience in this line, and since authors on these subjects are neither as precise in their statements nor as harmonious among themselves as in the instances tabulated, I will base my comments principally on the other topics.

The coexistence of a peripheral anomaly and of a functional nervous ailment is not sufficient by itself to base upon it the conclusion that the latter is dependent upon the former. The reflex origin of a given neurosis can, however, be proven by various methods. In many instances it is suggested by the patient's history if carefully examined. Whenever the nervous disturbance follows regularly any intensification of preëxisting local ailments, a relationship between the two phenomena is highly probable in the light of our present information. If the patient states that his headache is brought on by the use of his eyes, or in another case that his attack of asthma is always preceded by sneezing and stuffiness of the nose, there can be little doubt as to the relation of cause and effect. In other instances, however, the cause is persistently present, while the nervous disturbances are of periodic occurrence, for instance, in migraine dependent on astigmatism, and in the few rare cases of epilepsy which have been traced to nasal irritation. Under these circumstances, the examination of the patient can only lead to a tentative diagnosis of the origin of the nervous trouble. The experimental production or exaggeration of reflex neuroses in patients subject to them is possible only in some instances. Thus sneezing fits, spells of nasal cough, more rarely headaches, and occasionally asthma and attacks of syncope may be induced by irritating with a probe the sensitive nasal area of patients suffering from such nasal neuroses, but this experiment is not always successful. Occasionally, too, periodic attacks of the existing neurosis follow intra-nasal cauterization. In various instances of epilepsy due to sensitive cicatrices, the reporters were able to bring on the attacks by pressure upon the scars.

As a rule, however, the reflex origin of a neurosis can only be proven by its cessation after eliminating the cause, a test which constitutes the principle of treatment. If the refraction of the eye is suspected as the cause, absolute rest of the eyes, if necessary, combined with the use of a cycloplegic drug, and finally appropriate glasses, decide the correctness of the diagnosis. If heterophoria, a strain of the ocular muscle during the maintenance of binocular vision, seems to account for the nervous disturbance, the exclusion of one eye by a shade will obviate the immediate consequences of this strain. The nasal neuroses are often checked at the beginning of an attack by the thorough application of cocain to the sensitive area, although this test is not always positive. And finally, in those instances in which fecal retention or irritation of the bowels by parasites can be suspected as the cause of the neurosis present, systematic intestinal evacuation is the test of the correctness of this view.

In other instances the therapeutic test can not be as decisive concerning the origin of the neurosis as in those just quoted. Whenever the peripheral lesion is of such a nature that persistent treatment is required for its removal and that some time must elapse before its consequences can be expected to cease, good judgment is necessary to determine whether the neurosis is really of peripheral origin or simply a coincidence. If the interests of the patient demand general hygienic direction besides the elimination of the local disease, the decision is particularly difficult. This explains why our knowledge of intestinal and uterine "reflexes" is so much less positive than the doctrine of ocular and nasal neuroses. Under such conditions, it is only the accumulation of similar well observed cases upon which reliable conclusions can be based.

It might seem as if the most conclusive evidence could be obtained by the surgical removal of the cause of irritation whenever this is feasible. Indeed, the most brilliant cures of nasal reflexes and of epilepsy due to painful cicatrices come under this head. But here also judgment and neurologic training are required to avoid sources of fallacy. It has been said that some of these cases, for instance asthma of nasal origin, were really cured by counter-irritation, and that the galvano-caustic destruction of the sensory area in the nose acted as a "derivative." This objection could be entertained only if it had been shown that "counter-irritation" anywhere else yielded equally positive results, which has never been done. The validity of the reflex theory has also been assailed on the ground that relapses have occurred after such operative cures. But whenever such relapses were examined by competent observers (Hack quotes such cases), it was found that they depended on relapses of the local disorders, which the surgical treatment had failed to eradicate thoroughly. Such coincidences are really but an additional proof of the correctness of the "reflex theory."

The real source of fallacy in conclusions based upon the results of operative treatment is, in my judgment, the difficulty of distinguishing between the influence of the operation itself and the influence of the mental impression made by the operation. It is well known to neurologists that emotional impres-

[7] Peltesohn, Berl. klin. Wochenschrift, 1892, No. 32.
[8] I. N. MacKenzie, Am. Jour. Med. Sciences, July, 1883.
[9] Bosworth, Diseases of the Nose. etc., 1889.
[10] Finke, Deutsche med. Wochenscrift, 1885, No. 4. Schneider, Berl. klin. Wochenschrift, 1888, No. 42.
[11] Knepper, Deutsche med. Wochenschrift, 1884, p. 828. v. Stein, Monatsschrift f. Ohrenheilkunde, 1889, Nos. 9 and 10.
[12] Hack, Deutsche med. Wochenschrift, No. 25. Musehold, Deutsche med. Wochenschrift, No. 5, 1892.
[13] Kipp, Transactions Am. Otolog. Society, 1883. Cohn, Berl. klin. Wochenschrift, 1891. Nos. 43 and 44.
[14] Personal observation.
[15] Résumé by A. P. Bruhaker, Art. Reflex Neuroses, in Vol. III of Litch's Am. System of Dentistry.
[16] Liebert, Deutsche med. Wochenschrift, 1885, p. 643.
[17] Trousseau, Medical Clinic, Sydenham Translation, Vol. III and Vol. I, Art. Epilepsy.
[18] Gussenbauer, Prager med. Wochenschrift, 1886, p. 31.
[19] A. R. Bowlby, Injuries and Diseases of Nervea, 1889. W. Rose, Brit. Med. Journal, 1889, p. 475. Galleranl and Raciotti, Neurolog. Centralblatt, 1893, p. 479.
[20] Résumé by G. I. Engelman, Art. Hystero-neuroses in Vol. II, Mann's System of Gynecology, 1888.
[21] W. C. Kraus, Journal of Nervous and Mental Disease, 1893, p. 409.

sions and "expectation" may stop for a time, or even dissipate permanently, choreic movements, but more especially hysterical pains and spells, even when they had existed for a long time. It is equally a matter of experience that some cases of epilepsy are temporarily benefited by any new treatment of an impressive nature. For this reason, much familiarity with the clinical history of functional nervous disorders is requisite to enable the observer to decide whether the disappearance of the symptoms could be properly attributed to the operation, or whether the cure depended rather on mental "suggestion."

The less we know about the pathologic significance of the alleged peripheral cause, the less reliable will be any conclusions as to its relation to coexisting neuroses. Hence skepticism is in place when for instance, Scheinmann[22] seeks the cause of some nervous condition in sensitive areas wandering from place to place in the nose and reappearing after the operation in another spot. Judgment might also be held in reserve as to the relation of neuroses to low degrees of heterophoria. No doubt there are cases where the strain of eye muscles working under disadvantage leads to nervous disturbances. But to what extent the lower degrees of insufficiencies of ocular muscles—almost normal occurrences—are resented by the nervous system is still an open question. Any oculist who has learned by experience how little the muscular balance of the eye-ball is at times changed by extensive tenotomies in well-marked cases of ocular deviations of the latent type can not but doubt whether the mere nicking of muscles in low degrees of heterophoria cures the patient by influencing the muscular tension or the patient's mind. Indeed the question is a proper one, whether many instances of heterophoria are not by themselves hysterical manifestations, and such a view would be supported by the frequent experience of complete relapses of the ocular deviations after temporary cures by operations on the muscles.

More than mere skepticism, however, is called for, when attempts are made to cure neuroses by muscle-cutting—that is to say, by removing the alleged muscle-strain in the forced effort at binocular vision, in cases which present manifest strabismus and hence have no binocular vision.[23]

When, however, persistent and well-defined nervous symptoms disappear promptly and permanently after the surgical removal of some demonstrable peripheral lesion, or return only if their starting cause relapses on account of insufficient treatment, there can be no logical doubt that the neurosis has been maintained by the peripheral anomaly in question.

In all discussions on "neuroses" it must be clearly kept in view that the manifestations of a disordered nervous system are but symptoms, and that these symptoms may depend on different remote causes in different instances. Similar symptoms may be of "reflex" origin from one organ or another in one case, but may be due to actual lesions in the nervous system in another patient. Hence there is no contradiction in admitting that epilepsy and chorea are sometimes of peripheral origin, although in most instances they depend on disease of the nerve centers.

The peripheral irritation which can induce nervous disturbances in certain patients is not necessarily and indeed but rarely felt as pain. It may even give rise to so little conscious sensation that inattentive patients overlook it, or at least do not connect it with the neurosis started by it. When, for instance, ametropia causes headaches or other neurotic symptoms, the patient may or may not complain of discomfort in the eyes. Personally, however, I have never seen a case in which close questioning did not elicit at least the admission that the eyes did give rise to some slight annoyance when used steadily. Similarly in the case of nasal and pharyngeal disorders. While in some instances the patients may not complain directly, still I was always able to learn by proper questioning that some local disturbance could be felt, though perhaps not enough to suggest it as the cause of the neurosis. But there are also many instances of physiologic reflexes started by an excitation of sensory nerves of which the individual does not become conscious. As illustrations might be mentioned the regulation of the act of accommodation by the blurring of retinal images, the coördination of the external muscles of the eye under the influence of diplopia, the self-regulation of the breathing movements by means of the distension of the pulmonary tissue, the changes in the cardiac rhythm and in the size of the arterioles according to local conditions of rest or activity, and many other instances.

A clear insight into the pathogenesis of reflex neuroses can only be obtained by an analysis of all the factors concerned in their production. For evidently the peripheral anomaly starting the neurosis is but one of the factors, or why should a patient with nasal polypi have asthma when so many others suffering from the same nasal condition escape the secondary affection? Why should but a small number of hypermetropic people get headaches while the majority of eyes with this deficiency cause only disturbed vision and nothing else? If an irritation alike qualitatively and quantitatively produces disturbances in the nervous system of but one person out of many, there must be special reasons for this exceptional result. Unfortunately our knowledge of the conditions determining neuroses is as yet but very meager.

The history of patients shows often that the nervous trouble began after some special increment in the intensity of the peripheral irritation. Thus very frequently headaches from eyestrain date back to the time of unusually severe use of the eyes. Again, in other instances, nasal neuroses begin when the chronic nasal condition is intensified by an acute coryza or when the nose has been irritated by exposure to dust. But these observations, important as they are, do not solve the question why such peripheral irritation will only cause neuroses in some persons and not in others.

In a fair proportion of these sufferers we can recognize hereditary influences. In my inquiries into the family histories in cases of ocular and nasal neuroses, I have very often found similar affections in different members of the family. While it is in no sense an explanation to state that neuroses are more liable to occur in a person predisposed by heredity still the fact as such is worth noting.

In the sensory neuroses, and especially those of ocular origin, I have learned to regard as important factors the pernicious results of indoor confinement in cities. My case-book contains numerous records of school children and young clerks whose headaches or dizziness or other sensory discomforts were for

[22] Berl. Klin. Wochenschrift, 1889, Nos. 14 to 21.
[23] Ranney, New York Med. Jour., 1894, pp. 80 and 113.

the time being checked by glasses of moderate strength, but who were equally comfortable without their glasses after a thorough vacation. It is especially during the growing period of life that want of out-door exercise and close confinement increase the liability to reflex disturbances. Chlorosis also has its share in the etiology of these affections, and where the history shows that the nervous disturbances although clearly of peripheral origin have only begun since anemia was manifested, iron and hygienic directions are often as serviceable as the correction of the peripheral cause.

The history of some cases shows that the sensory neurosis dates back to the time of recovery from some acute fever—measles, more often in my experience than any other. I have also noticed relatively often that headaches of refractive origin began during the lactation of mothers. In two instances of nasal neuroses, observed by myself, excessive smoking seemed to be a predisposing condition, and moderation of this habit relieved the intensity and frequency of the attacks. One of the patients had short attacks of dyspnea with palpitation of the heart and was ultimately cured by operations restoring the patency of the nose. The other one had periods of cardiac irregularity and acceleration presumably due to papillomata in the nose, but the diagnosis was not made certain, by his refusal to the operation.

A factor to which but little attention has yet been called is the coexistence of several sources of irritation in the system. I. N. MacKenzie (*Am. Jour. Med. Sci.*, April, 1884,) has observed that nasal neuroses are often most pronounced during menstruation and that they can be exaggerated by sexual excesses. It is well known that migraine accompanies the menstruation of some women. In a few instances of migraine especially accentuated during such times I have proven the ocular origin by successful correction with glasses. Several cases of asthma, the nasal origin of which was shown by the ultimate relief given by nasal surgery, have given me the history of attacks induced particularly during times of intestinal distress and in these patients dietetic management had a distinct influence on the frequency of the asthmatic attacks. It is common experience, too, that pregnancy predisposes some women to serious nervous symptoms. In some instances of facial neuralgia, of scotoma fugax and of circulatory disturbances in pregnant women, the nasal origin was strongly suggested by the history of the nasal distress, although I have only twice demonstrated the relationship by the success of intra-nasal operations. It should be remembered in this connection, that nasal operations have several times been followed by miscarriages.

It must finally be admitted that in many instances of neuroses of peripheral origin no accessory influences, no disturbances of nutrition, in fact no deviation from perfect health of the nervous system can be detected. Indeed this seems to be the case in many of the more typical instances in which the elimination of the starting point stops at once all nervous symptoms. On the other hand, whenever the history shows fluctuation in the intensity of the nervous troubles and periods of intermission, it is more likely that the peripheral cause has been aided in its influence upon the nervous system by accessory baneful circumstances without which it would not have sufficed to induce the neurosis. These considerations explain also why some neuroses cease spontaneously, in spite of the persistence of the peripheral cause, while others never stop until the starting point is removed.

Finally it is proper to ask, What is the relation of reflex neuroses to hysteria? While hysterical persons are not exempt from these troubles, I have neither found in my experience nor in the reports in literature, any large proportion of cases of neuroses of well established peripheral origin in patients with manifest hysteria. I might almost say that where the history of hysteria is clear, the therapeutic test is apt to fail in establishing the peripheral origin of the symptoms. No doubt some of the hysterical complaints, for instance some forms of headache and the globus hystericus are really of peripheral origin. But it seems as if in their production it were not so much the inferior centers as the cerebral hemispheres in which the disturbances are induced. For hysterical manifestations when once established are apt to persist, even after the influence which started them has been eliminated.

THE EMPLOYMENT OF THE ELECTRO-MAGNET IN OPHTHALMIC PRACTICE.

Read before the Annual Meeting of the State Medical Society of Michigan.

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The employment of the magnet in ophthalmic practice dates back barely twenty years; though, as "there is nothing new under the sun," the magnet was probably known to the ancients; and, at least two thousand years ago, the Brahmins were well acquainted with its use in surgery, as we find it mentioned in this relation in their sacred writings.

The first description of its use in connection with the eye was reported by Fabricius Hildanus in 1656. But Dr. McKeown, of Belfast, Ireland, has the honor of having been the first to effectively employ the magnet in an operation in the deep structures of the eye, extracting, by this means, in the year 1874, a chip of iron from the vitreous humor.

In 1877, Hirschberg constructed his electro-magnet, which on account of the large size of the tips, and the nice balance of the instrument has become the most desirable for general practice. The instrument, in simple terms, may be described as consisting of a core of soft iron, of cylindrical shape, around which is coiled insulated copper wire; the entire instrument being protected by a neat case of ebonite. There are two screws to receive the battery connection at one end, while at the other end the core projects, so that tips of different sizes can be attached to it. One large zinc-carbon cell will give a sufficiently strong current; but the storage battery is altogether more satisfactory, as it will generally be found in good working order, and giving off a much stronger current—decided advantages.

Before attempting the insertion of the magnet, it is most important that there should be a positive diagnosis of the presence of a piece of iron or steel in the eye; and, if possible, its exact location should be determined. Then, in recent cases, no time must be lost in deciding on its removal.

In doubtful cases, where an object in the vitreous with the ophthalmoscope, or by focal illumination is observed, the magnet brought in contact with the globe will sometimes clear up the diagnosis of a particle of iron, by making it alter its position; and, then often the patient will experience pain, owing to the movements of the object within the eye. When there is suspicion that a foreign body has penetrated the eye-ball, thorough examination with the ophthalmoscope should at once be made; for, if the media are clear there will be no difficulty in tracing the track of the intrusive substance. Air bubbles in the vitreous are sometimes to be seen, giving strong evidence of a foreign body having invaded the eye. Small rents in the iris, which perhaps would escape detection by a mere ocular examination, can readily be seen by the aid of the mirror.

The chips of iron or steel which penetrate the eyeball are usually splinters from hammers or other tools requiring considerable force to operate them. Boiler makers, from the fact that they are constantly using the hammer upon iron plates and rivets, would perhaps be found to form the majority of those meeting with this class of injury. But such accidents would seldom happen if the operatives wore mica spectacles as a protection to the eyes while at work; a precaution which, I believe, many manufacturers in Germany insist on their employes adopting.

Metallic chips seldom pass completely through the eyeball; they usually embed themselves in the background of the eye or fall below in the vitreous. Small particles of iron implanted in the tunics of the eye may remain a lifetime without exciting inflammatory action or interfering with vision. Hirschberg removed with the magnet a piece of iron from the eye after a residence therein of thirty years. But when a foreign body lies in the vitreous, it nearly always creates a disturbance, as well mechanically as chemically; so that the eye, almost without exception, would be lost unless the offending body was removed.

The operation can be performed with or without the aid of an anesthetic; preferably without, as the pain is not great, and often the patient can assist the operator by controlling the movements of the eye. There is but slight danger of a prolapse of the vitreous; and where it does occur only a drop or two appears in the wound and can be easily dealt with.

Splinters of iron embedded deep in the corneal tissue, and threatening to pierce into the anterior chamber, can often be readily removed by the magnet. When they have penetrated through the cornea, and lie in the anterior chamber, or rest in the iris, the tip of the magnet, introduced through the wound and brought in contact with the particle, will succeed in its removal without producing as much disturbance, or as greatly endangering the wounding of any of the delicate structures related to the aqueous humor, as would the employment of the forceps.

If the particle lies in the crystalline lens, the safest and best plan of dealing with it is to extract the lens by the ordinary operation for cataract. When the chip has pierced the deeper structures of the eye it is important to locate its site if possible; but hemorrhages into the vitreous may cloud this medium. As a rule the tip of the magnet may be guided in the path left by the foreign body, except where the wound leads through the cornea, iris and lens, when it may be best to make an incision through the sclera. Or where the wound has healed, if we are able to see the foreign body its position will suggest the course to be pursued, as the magnet should always be brought in contact with, or as near as possible to the chip of iron.

The incision through the sclera, choroid and retina should be made from six to eight mm. from the sclero-corneal junction, on a meridianal line, and from five to six mm. long. Boldly insert the magnet and complete the circuit, as the effect is strongest at the inception of the current. After allowing it to remain a few seconds, slowly withdraw the instrument, and, if successful, the fragment of iron will be seen on its point. It may be necessary to make several excursions into the vitreous, and with tubes of different shapes, before producing the result.

It is astonishing to what extent the vitreous can be stirred up by the magnet, if the rules of antiseptic surgery are carefully complied with, as the report of the following case will illustrate:

H. M., aged 44 years, was referred to me by Dr. Hitchcock, on Oct. 13, 1892, with the following history: While at work driving rivets on Oct. 11, in the Brennan boiler shops, Detroit, a piece of the hammer he was using broke off and struck his right eye, wounding that organ. He was immediately taken to the office of an oculist, who, after carefully examining the injured eye, advised him to have it at once enucleated, in order to save the other eye from an attack of sympathetic ophthalmia. It was forty-eight hours after the accident before I first saw the injured eye, which appeared to have suffered a penetrating wound of the cornea in close proximity to the temporal side of the sclero-corneal junction, on a line with, and a little higher than the center of the pupil. The laceration was from five to seven mm. long, and had not completely closed. There was a rent in the iris opposite the corneal wound. The media were obscured. The patient had no pain in the eye and has never had any since the accident. I gave the opinion that a foreign body had penetrated the eye and probably was in the vitreous, or embedded in the background of the eye; and strongly advised him to consent to my using the electro-magnet. On his acceding, I operated upon him that night, at 11 P.M., at Harper Hospital, in the presence of Drs. Hitchcock and Hickey. Having first subjected the eye, eye-lid, etc., to a bath of a solution of I-5000 of the bichlorid of mercury, I introduced the straight tip of the magnet through the wound in the cornea and iris, in the track made by the chip of steel, which it easily followed into the vitreous.

The tip was allowed to remain in the vitreous several seconds, and was then carefully withdrawn; but it did not succeed in bringing forth a chip of steel. The straight tip was now exchanged for a curved one, and made to enter the vitreous by the same route; and after slowly and delicately searching the vitreous in all directions, was withdrawn from the eye; but without the desired result. It was introduced for the third time, and was again unsuccessful; when, feeling that the vitreous had already been stirred as much as I dared, I decided on not attempting another trial. The eye was dressed and bandaged, and the man entered as a ward patient, and was turned over to the attending oculists of the Hospital. He remained in the Hospital for ten days, and shortly afterwards returned to work.

I examined him only a few days ago, on April 12, and was surprised to find he had absolutely normal vision with the wounded eye. The lens had miraculously escaped injury; there was but a slight adhesion of the iris to the cornea; and the rent in the iris had a background of clear media. In the fundus, on a straight line back of the wound in the iris, fortunately a few mm. to the outer side of the fovea centralis, is a deep fissure involving the retina, choroid and sclera, and in the central part of this, which shows as a white patch, a pointed bluish-gray object projects anteriorly into the vitreous. It seems firmly embedded in the sclera; extending three mm. into the vitreous—measured with the ophthalmoscope; and can not be made to stir. For various reasons in

connection with the facts given, and including the shape and color of the object, I am of the opinion it is a sliver of metal.

I have acquainted the patient with the existing condition of his eye, advising him to consult an oculist should the sight become impaired, or pain or redness manifest itself, or should there occur other indications of a foreign body exciting a disturbance; when the magnet can be again called into use; and, if unsuccessful, the eye be enucleated, in order to save the sight of its fellow. Considering that almost every structure of the eye was severely wounded, and the heroic measures exerted for its relief, it is remarkable that the eye retained the power of sight—normal vision at that.

A distinctive instance of the great value of the ophthalmoscope as a diagnostic aid, and of the successful use of the magnet in extracting from the eye a chip of steel which had remained in the vitreous nearly eight months, is given in the following case:

On June 20, 1893, W. P., of Detroit, aged 39 years, while driving a cast steel hammer through an inch board, by striking the former with a wrought steel hammer, had a small piece of the steel split off and strike his right eye. He was satisfied that the chip had not penetrated the eye, as all he could notice was a slight abrasion on the upper and outer part of the sclera. As there was no redness or pain, he did not consult a surgeon until a month later when, on account of a blurring of the vision he visited an oculist, who examined his eyes, and finding an error of refraction, prescribed glasses. This seemed to assist his vision; although he was not conscious of any improvement in the case of his injured eye, the sight of which was very much impaired, but to what extent he can not now state. This condition continued without any material discomfort until about Jan. 1, 1894, when the injured eye began to pain him. For this he treated himself, and continued at his daily labor until January 16, when the pain became so severe he was forced to stay at home. On this he consulted another oculist who referred him to me.

I saw the case for the first time on February 7. I found there was no scar on the eye-ball. Vision equaled perception of light only with the right eye, while the left eye had normal vision. From the history he gave me I suspected a foreign body in the eye was the cause of all his trouble; and my suspicions were confirmed by an ophthalmoscopic examination which revealed an intrusive substance in the vitreous lying on the floor of the fundus.

It was with difficulty that I could make him believe that the chip of steel was in the interior of his eye, and had been there for nearly eight months. He entered St. Mary's Hospital and consented to my attempting the removal of the chip with the electro-magnet; giving me permission to enucleate the eye if the magnet failed to extract the bit of steel. In the Hospital amphitheater, before a number of physicians and students of the Detroit College of Medicine, I made with a Baer's cataract knife an incision about eight mm. long, through the sclera, retina and choroid into the vitreous, commencing about five mm. from the sclero-corneal junction, parallel to, and on a line with the insertion of the inferior rectus muscle, so as to make the opening as near as possible to the foreign body. The large curved tip of Hirschberg's magnet, through which passed a strong current from a McIntosh storage battery, was brought into the mouth of the wound, but failed to attract the alien particle. I then plunged the tip into the vitreous, and turned its point on to the floor of the fundus; and on withdrawing the magnet had the extreme pleasure of seeing a chip of steel adhering to its point, confirming my diagnosis. Not a drop of vitreous presented itself in the wound. A stitch was taken, uniting the conjunctiva over the wound, and the eye was thoroughly bathed in a 1-5000 solution of the bichlorid of mercury and bandaged. The chip of steel is triangular in shape and weighs a quarter of a grain. The patient complained of great pain in the eye on the night following the operation. This, however, gradually passed off; and he awoke the next morning free of all distress, and he has not had the slightest discomfort ever since. He left the Hospital in seven days, and was able to return to work in three weeks.

The eye is slowly clearing from the brown (oxidation) stain of the iron; but it is probable it will take a considerable time to fully recover from this. Though the vision of the injured optic is not improved to any appreciable extent as yet, as the ball retains its shape and almost normal appearance, it is far better than an artificial eye; and the patient is enthusiastic over his recovery, fully realizing that the removal of the piece of steel has saved his only useful eye from probable blindness through sympathetic ophthalmia.

The prognosis of magnet operations is in general favorable. Dr. Heinrich Hildebrand, of Hagen, Germany, has collected 328 cases of magnet operations, including 66 of his own. Eighty of the operations concerned the anterior half of the bulbus, the rest were in the vitreous. Of the operations in the anterior half, 67 turned out favorably. Of the 248 "vitreons" operations, 74 failed to extract the foreign body. In the remaining 174 cases, 23 suffered phthisis bulbi; 26 had to be enucleated, later on; 62, or 36 per cent. of the cases, recovered with normal vision, or a part thereof; while 91 cases retained the form of the eye-ball, without vision. These results should prove the powerful aid afforded by the electro-magnet in rescuing the eyes of the victims of flying particles of iron or steel.

When there is failure to extract a foreign body from the interior of the eye, a most important and sometimes perplexing problem presents itself; namely, whether enucleation of the injured member should be performed, for fear of sympathetic ophthalmia attacking the non-injured eye; or whether the eye-ball should be allowed to remain, trusting that the foreign element is in a position to excite no disturbance.

Where the ciliary region, "the ring of danger," has not been wounded, and if the foreign body is a chip of iron or steel, and after a most careful search the magnet fails to bring forth the chip, I am not in favor of immediate enucleation; but prefer keeping the patient under the closest observation for some days, when, by the extent of the inflammatory reaction, the best way of dealing with the case can be determined.

It is not uncommon, it may be repeated, for a particle of iron to embed itself in the walls of the eye, and remain there without interfering with useful vision, or exciting any inflammation; as the former case I have reported, added to numerous others, will show.

No set rules can be laid down as to the best methods of dealing with injuries to the eye-ball; and as Noyes so aptly remarks: "One of the greatest triumphs of the oculist is when he discriminates correctly the dangers of an injured eye, and by skilful treatment and wise forbearance preserves to the patient his precious possession of sight or eye-ball."

It is only proper that I should acknowledge my

indebtedness for some of the opinions I have here presented, to the distinguished oculist, Prof. Hirschberg, of Berlin, under whom I had the honor of prosecuting my studies while in Germany. One can not easily exaggerate the inspiration of his example. His superb technical abilities, including his patient carefulness, and, above all, his unwearied insistence, by precept and practice, of the observance of the requirements pertaining to antiseptic surgery, leave an impression upon those who come into contact with him not soon if ever obliterated. I dwell upon this latter, as too many are apt to belittle or disregard the preparatory precautions which so largely contribute to the success of an operation. Hirschberg is immovable in his adherence to even the smallest of these safeguards; which in one so eminent in his profession may well be considered strong evidence of the wisdom of their employment.

A CAUSE OF FAILURE IN THE SURGICAL TREATMENT OF INTERNAL STRABISMUS.

Read by title before the Pennsylvania State Medical Society, May, 1894.

BY HOWARD F. HANSELL, M.D.
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The full measure of success in the treatment of functional deviations of the visual axes is attained only with the restoration or establishment of binocular fixation for all distances. This is the ideal result. A partial, but subjectively more important, success is the cure of the deformity, since patients with functional internal squint seldom complain of defective visual acuteness, diplopia or asthenopia; but they ask for relief for appearance's sake. All operators who have followed their cases over a period of several months or years must confess dissatisfaction with the usual routine methods of examination and surgical practice, and admit their frequent failure to restore equilibrium and coördination of the ocular muscles, or even wholly to remove the disfigurement. This is due, in my opinion, not to faulty technique, but to an imperfect conception of the physiologic relation of the accommodation to the straight and oblique muscles.

It seems to me, notwithstanding the able articles on the etiology and treatment of squint by Perinaud,[1] Hansen Grut,[2] Schnellen[3] and others, but little advance has been made in the practical management of hypermetropic squint since 1864, when Donders published his well-known explanatory theory. He speaks, in his classical treatise, of four causes, any one of which may coöperate with hypermetropia in developing strabismus: 1, congenital difference in the accuracy of vision, or the refractive condition of the two eyes; 2, spots on the cornea; 3, peculiar structure or innervation of the muscles or easy mobility of the eyes inward; 4, large angle alpha making apparent divergence for far, and too great convergence for near. But he does not allude to a fifth complication, purely physiologic and an extension of his own line of thought which perhaps more often than those enumerated, militates against a scientifically successful result of operation.

Functional internal squint, which excludes strabismus arising from changes in the transparency of the cornea and lens through disease, retinal exudations and choroidal atrophies in the macular region, paralysis through interruption of the nerve force or nuclear disease, muscular inaction or over action from traumatism, deviations from cicatrices or other organic cause, is dependent in 75 per cent. of cases on hypermetropia.

The correctness of Donders' theory is uniformly acknowledged. You will pardon a brief statement of it. The hypermetrope must accommodate to secure the best acuity of vision in the distance. His relative accommodation may or may not be disturbed. If the former, he must simultaneously converge. But convergence for infinity means diplopia. Therefore the cornea of *one* eye is rotated inward. Fixation with one eye, constant squint, or with either eye indifferently, concomitant or alternating squint, is determined by a difference in the refraction, by amblyopia or by habit. The dependence of convergence on accommodation is based upon the anatomical fact that the ciliary and the interni muscles are under the control of branches of the same pair of nerves, and when the bounds of relative accommodation and convergence are overstepped, stimulation of the ciliary induces a consistent and unavoidable over-contraction of the interni.

If this theory explained all cases we meet in practice, the treatment indicated would be direct and successful, when instituted before the muscular tissue undergoes organic contraction. There is, however, a large proportion of cases, properly classified in direct opposition to Donders, as complicated, when one eye is invariably used in fixation for all distances and the total excessive convergence is borne by the second eye. Donders says they are "simple," suggests correction of the refraction and tenotomy, and intimates a successful result. These so-called simple cases are, in fact, complicated by two anomalies; one of vision and one of muscular action. The squinting eye is amblyopic, congenital or acquired from disuse, and is not only turned inward but *rotated inward and upward.* The oblique deviation has been persistently ignored. In some text-books it is not mentioned; in none is it described at length or explained. This had been otherwise, were we accustomed to investigate the kind and degree of turning by the only scientific means, namely, the study of the relation of the false and true image, since the relatively slight upward turning is overshadowed by the greater deformity of the convergence.

In concomitant squint, where either eye is used indifferently in fixation, there is no essential difference in the refraction or in vision. If amblyopia is the result of disuse, it can not develop. In constant squint, on the other hand, the deflected eye is always amblyopic and usually has the greater optical defect.

The etiology of the upward deviation is precisely that of the convergence. The third nerve supplies other external muscles besides the internal, and unless there is a peculiar relationship or connection, undemonstrated by the microscope, between the nuclei of the ciliary and interni muscles which does not obtain with the others, we would certainly and logically expect a response to the stimulus given by the accommodation to include the superior and inferior rectus and the inferior oblique, and not be limited to the internus and the iris. The rotation of the cornea in consequence of their combined action must be inward and upward—inward because the antagonist of the internus is not involved, and upward be-

[1] Ann. d' Ocul., Vol. cvi.
[2] Trans. Oph. Soc., Jan., 1891.
[3] Arch. für Opkthal., Bd. 36, Abt. iii.

cause the inferior oblique and superior rectus are stronger in their associated action of turning the cornea upward than the inferior rectus in opposing them. Therefore, if hypermetropia is the causative factor in the production of abnormal convergence, and its influence extend to the elevators and depressors of the cornea, it must follow that in every case of hypermetropic internal squint the deviation is oblique, and a purely lateral turning is theoretically impossible. Thus we observe an hitherto unstudied condition in concomitant squint, the existence of which can be readily proven. During fixation with the right, for instance, the left eye turns in and up—the right image will be the true, and the left, which is the false image, will be lower. During fixation with the left, the right eye turns in and up—the left image will be the true and the right, the false image, will be lower; or, while fixation is accomplished by one eye, which must be accommodated to give clear distant vision, but can not converge, the visual axis of the second eye crosses that of the first on a higher plane, and as accommodation and fixation are transferred from one eye to the other, the inward and upward squint is also transferred.

The same principle holds in its application to constant squint where one eye always fixes, and the other always deviates. Here there is no transference of accommodation or deviation, but the result of excessive accommodation in the better eye is manifested in the inward and upward deviation (eso-hypertropia)of the worse eye and is necessitated by the supra-normal response of the branches of the third nerve distributed to the muscles of that eye.

I have omitted a consideration of the action of the levator palpebræ, which, belonging to the group of muscles supplied by the motor oculi, should also receive additional stimulus from hypermetropic excitation of its nucleus. Its function, however, differs from that of the other members of this group of muscles, and, while its over action in hypermetropia would be important as showing the physiologic relation of all the nuclei, it is independent of, and not kindred to, rotation of the ball. A slight increase in the vertical axis of the commissure in the squinting eye over that of the fixing eye might be difficult to determine, since the halves of the face are seldom symmetrical. The application of this extension of Donders' theory of hypermetropic squint to the treatment is obvious. It is essential that a full correction of the error of refraction shall be constantly worn, from the moment the diagnosis can be made, or the patient is old enough to wear glasses. In lieu of glasses the accommodation can be paralyzed by atropin.

The surgical treatment consists of: 1, in alternating squint, a division of both internal muscles; 2, in constant squint, a division of both internal muscles, and the superior rectus of the deviating and perhaps the inferior rectus of the fixing eye.

The degree to which the tenotomies should be carried must be governed by the distance separating the false and true image of a small light at six m. Hence it should be done in all cases, where a restoration of binocular fixation is possible, under cocain anesthesia.

Failure to secure good results from operation will often be encountered in cases of constant squint, because division of the interni will not correct the hypertropia, and it is essential to the permanency of even a cosmetic effect that the upward deviation shall be recognized and considered of equal importance to the horizontal. In concomitant squint, the hypertropia is a transient and alternating condition, transferable with the esotropia, and should *never* be surgically treated. By equalizing the convergence by tenotomies, binocular fixation is secured without interfering with the horizontal plane on which the two eyes will act together. This plane may be higher than that of the emmetrope, or after a period of normal accommodation, obtained by wearing full correction for hypermetropia, the elevators of the cornea may be properly and equally antagonized by the depressors and the horizontal plane of binocular fixation be lowered to correspond with that in emmetropia. In either case the visual axes are on the same level.

I earnestly urge, first, an examination and close analysis of the degree and kind of turning of the cornea by a study of the relative positions of the false and true image of a small gas jet or candle flame at six m. and shorter distances; second, a recognition of the hypertropia which will be invariably found to complicate esotropia, of its transference with the esotropia in concomitant or alternating strabismus; third, of the permanent upward deviation of the inward-turned eye in constant squint; and, fourth, emphasize the deductions taught by these conditions, namely, that the hypertropia of the former disappears under correction of the error of refraction and tenotomy of the interni, and in the latter, vertical equilibrium can be obtained only by operation on the vertical muscles.

SOME REMARKS ON TOTAL EXTIRPATION OF THE FIBROID UTERUS: ILLUSTRATIVE CASES.

A paper read before the Ohio State Medical Society, Zanesville, May 16, 17, 18, 1894.

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The subject of fibroid tumor of the uterus is too broad to be considered in all its aspects, in the time allotted, before this Society. I have therefore thought it advisable to speak of but two phases of the subject: 1, what cases require operation; 2, methods of operating.

Clinical experience demonstrates that only a small percentage of those suffering from fibroids require operative interference for relief. This is so well known that the profession at large have come to regard them as purely innocent growths. This is true in the majority of cases. My experience, based upon more than two hundred carefully recorded cases, justifies me in saying that the majority of women from thirty-six to forty-five years of age suffering from fibroid tumors, do not require operative interference; but this fact increases our responsibility in determining early the cases really requiring operation.

A great many women who are the subjects of fibroid tumor suffer no more inconvenience than a slight pain preceding and during the menstrual period, which is not excessive or unduly prolonged. They suffer but little, if any, from pressure symptoms or peritonitis, and the tumor only annoys them because they are conscious of its presence by manual manipulation or from information given them by their phy-

sician. As long as the patient remains comfortable and her general health is not interfered with by pressure or loss of blood, she certainly ought not to be subjected to an operation.

The chief symptoms and secondary diseases of cases requiring operative interference, are hemorrhage, pain, cystitis, peritonitis and pressure causing temporary intestinal obstruction. These cases when they do not yield readily to internal medication combined with thorough curetting, the patient being put under good hygienic surroundings, are to be looked upon with suspicion and the future progress of the case watched with unusual care and interest. Experience leads me to believe it is out of this latter number, where the symptoms can not be easily controlled, that almost all of the operative cases come. I do not mean by this statement that all of these cases should be at once subjected to the radical operation of hysterectomy, but I wish to emphasize the opinion that these cases should be carefully watched. It is not unusual to have a case referred for operation where there has been severe and frequent hemorrhage with metrorrhagia lasting from ten to fifteen days each month for a number of years. To say that these patients are in the most unpromising condition for such a radical operation is to repeat what you all know. They are exsanguinated to an extreme degree.

Three cases operated upon by me within the past year, although still able to walk had lost such large quantities of blood that the act of rising to the feet caused severe vertigo. They suffered but little pain at any time, but had been confirmed invalids for years. They had had all kinds of internal medication, combined with electricity, before they were referred to me, with the result of only lessening the hemorrhage, not controlling it. These cases illustrate in a forcible manner the point I wish to emphasize; that is, if hemorrhage and metrorrhagia can not be controlled within a few months by careful medication, that case should be referred for operation and not be permitted to become so enfeebled as to make the result of the operation problematical. In other words, if once a patient becomes a bleeder she nearly always continues to be a bleeder, and there is no permanent relief except by operation.

There is another class of cases in which the most prominent symptom is not hemorrhage, but pain from pressure of the tumor. A tumor the size of a cocoanut, which has become adherent in the pelvis from inflammatory exudation, may cause intense suffering and a great number of reflex symptoms which demand relief. In support of this I could cite many instances of which the following is a fair illustration:

Miss M., aged 40, referred by Dr. Rhu, of Marion, Ohio, was known to have had a fibroid tumor for more than three years. For one year before my visit she observed that she was growing more and more incapacitated for walking. When she attempted to walk she suffered from a sense of fullness in the pelvis and pain in the legs and head. Much of the time she was practically disabled, so far as locomotion was concerned. She could not walk across the street without causing pain in the legs which was at once reflected to the head, so that she suffered greater pain in the head than in any other part of the body.

I saw the case in consultation with her physician, March 12, 1893, at which time she was just recovering from a sharp attack of peritonitis. On examination, I found the tumor occupying the entire space in the pelvis, with a large nodule above and to the left side, wedged down, firmly fixed by adhesions and causing great pressure. It was evident the patient could only be relieved by the removal of the tumor. As her life was in danger from recurring attacks of peritonitis, I advised immediate removal. Total extirpation was made at my private hospital, March 16, 1893. The entire lower part of the tumor was adherent. After removal, the tumor somewhat resembled in shape two large cocoanuts joined together. The patient made a prompt and uninterrupted recovery and is now enjoying excellent health. By examination of the tumor, we found a good explanation of the cause of the pain complained of when the patient attempted to walk. The tumor filled the pelvis, where it had become firmly adherent to its walls, the resulting pressure on the nerves of the sacral plexus causing the pain in the legs and inability to walk. The pain in the head was a reflex from the same cause. As the tumor continued to enlarge, it could do so in only one direction, upwards. The weight from above when the patient attempted to walk was an additional source of pressure on the nerves, which was somewhat relieved when the patient lay down. It is hardly necessary to add that this patient had been under constant medical treatment, including electricity, for years before the operation.

That we may have cystitis from the pressure of a fibroid tumor alone, is well illustrated by the following case:

Mrs. K., Dayton, Ky., age 36, married eight years; no children; no miscarriages; referred by Dr. Richards. This patient had suffered several years from pelvic pain, backache, pain in the limbs and metrorrhagia. She did not consult a physician until about a year ago when she was compelled to do so for relief from an irritable bladder. She was not conscious at that time that she had a fibroid tumor, but her physician was not long in determining the cause of the bladder difficulty, which was pressure on the bladder from a fibroid tumor filling up the true pelvis. No medication relieved this tormenting trouble, which gradually grew worse until she developed cystitis of an aggravated form. Her sufferings were very great. When she was referred to me for consultation, March 2, she had not been able to retain her urine for longer than one hour at a time, for more than two months. The tumor was fixed in the pelvis and could not be pushed upwards. Total extirpation was advised and the patient readily consented. It was done March 6. The patient made an easy and prompt recovery; her bladder difficulty improved from day of operation and at the present time she holds her urine for five hours and suffers but little inconvenience. I have no hesitation in saying that in due time she will be perfectly relieved.

Peritonitis is to be dreaded even more than hemorrhage in these cases. My experience convinces me that in almost every case we have the two conditions present. We have periodical hemorrhages extending over long months, or even years, with more or less severe pain located in one or the other ovarian regions, or in both, gradually increasing from month to month, until finally the patient is attacked with acute general peritonitis from which she may or may not recover. This inflammation will recur on the slightest provocation. These cases should be operated upon at the first attack, and not be permitted to go on and have half a dozen or more recurrences, each one jeopardizing life. The cause of peritonitis in these cases, in almost every instance, is a pyosalpinx, a suppurating ovary or both, complicating the fibroid, and it is obvious to every one that the only rational treatment is an early operation. This should be insisted upon in every case at the first attack of peritonitis. The following case illustrates this condition:

Mrs. N., age 52; married thirty years; no children; referred by Dr. DeWitt. The tumor extended three inches above the umbilicus. The patient had been conscious of the existence of the tumor twelve years, but had suffered but little inconvenience until about three years before the operation, when she commenced to have irregular hemorrhages which gradually grew worse, but she would not consent to an operation. For about a year she had suffered considerable pain in both ovarian regions and the hemorrhage had been markedly increased. The patient lost much

flesh, was anemic and very weak. I saw her on May 20, 1893, when she was just recovering from a sharp attack of peritonitis of some fifteen days' duration. Total extirpation was made May 23, 1893. Extensive intestinal adhesions were found; a pyosalpinx and large suppurating ovary holding eight ounces of pus, which was imprisoned below the tumor in the pelvis, were removed with the uterus. The patient made a prompt recovery and is to-day enjoying perfect health.

That intestinal obstruction should be one of the complications which might be anticipated in these cases is plainly evident. A small tumor fixed in the pelvis causes intestinal obstruction by narrowing the lumen of the rectum. This symptom can be overcome in the majority of cases after a few days' careful medication, yet the temporary obstruction is almost always accompanied by an acute attack of peritonitis, thereby endangering the life of the patient, as the following case will show:

I was called in consultation with Dr. Van Meter on May 7, 1894, to see a patient, a strong, healthy-looking German woman 38 years of age, who has been known to have a fibroid tumor for two years. One year ago she had an attack of peritonitis with complete intestinal obstruction for five days; for twelve hours the patient had stercoraceous vomiting. The tumor was so firmly packed in the pelvis, compressing the rectum to such an extent that the finger could not be pushed by the tumor. The intestinal obstruction was finally overcome, only to have it occur again May 1 of the present year. Obstruction was complete for four days, and was accompanied by acute general peritonitis from which the patient is now slowly convalescing. An operation was advised for removal of the tumor but not assented to. This patient has obstruction from pressure of the tumor in the pelvis, against the rectum; without operation she will die from this cause at no distant day.

Just as the question of extra-peritoneal or intra-peritoneal treatment of the pedicle in hysterectomy was so hotly contested a few years ago, so now is total extirpation and the extra-peritoneal method being discussed.

The extra-peritoneal fixation of the stump had the advantages over other methods, used at that time, of controlling hemorrhage and yielding the best results. It therefore became the method that was almost universally adopted. The objections to this method are many and serious. If we use the extra-peritoneal method and clamp, we not infrequently see the pedicle slough and become a menace to the life of the patient for days afterwards. Not a few die from septic infection and peritonitis from this cause. If the patient makes a primary recovery, she is not in all cases restored to health. Quite a number of these patients suffer great pain afterward, owing to the dragging of the pedicle on the tender abdominal scar, and pressure upon the distorted pelvic organs, interfering with their functions. Not infrequently hernia follows this operation, developing at the point of the fixation of the pedicle. Last and by no means least, the prolonged and painful convalescence which necessarily follows this method is a very serious objection to it.

The new methods which have entered the field and are contesting for supremacy in the hands of leading operators to-day are, total extirpation, and Baer's method. Baer's method is extirpation of the tumor and body of the uterus, ligating the uterine arteries, leaving the cervix and closing the peritoneum over it. Both of these methods have their advocates, but as yet total extirpation has yielded the best results and is the method which I prefer above all others. While I am aware of the fact that I have not had as much experience in this line of work as some operators, yet I have removed the uterus, for all purposes, sixty times, and so feel justified in expressing my opinion upon the subject.

The difficulties attending total extirpation are not so great as one who has never attempted it would suppose. They are easily overcome by one accustomed to performing difficult and complicated pelvic operations. With the patient in Trendelenberg's posture, the time required to perform the operation is no longer than that required in making many of the difficult abdominal and pelvic operations now being performed daily. After ligating off the ovaries and dividing the broad ligaments, the peritoneum is divided across the front of the tumor just above the top of the bladder and across the back of the tumor somewhat lower down. The peritoneum is then stripped down in front of the bladder and separated from the tumor down to the vagina. After stripping the peritoneum from the back of the tumor, the uterine arteries and their branches are easily secured. The ligatures are placed between the two flaps of the peritoneum but do not include this membrane in their grasp. The number of ligatures does not usually exceed two or three on either side. One end of each should be left about six inches long and, after removal of the cervix, carried out through the vagina to be cast off through that passage. The vagina is lightly packed with gauze and the peritoneal edges which were stripped from the tumor are turned in towards the vagina and neatly coapted by a running stitch of catgut. The wound in the vagina is treated as after an ordinary vaginal hysterectomy.

This method has stood the test of experience and is gaining in favor with the best operators of the present time. Theoretically there is little to be desired in technique, as it is very near perfection. It promises as good results in patients with thick abdominal walls as in those with thin abdominal walls. This can not be said of the extra-peritoneal method.

By total extirpation there is not as much danger of hemorrhage as there is in ovariotomy, from the fact that in the latter operation the pedicle is transfixed and ligated in mass. Not infrequently the pedicle is thick and short with great tension upon it, favoring slipping of the ligature and consequent hemorrhage. In total extirpation the broad ligament is divided from the uterus and ligated in sections which are not put upon the stretch, so there is no danger of the ligature slipping off. The ligatures do not include any uterine tissue, therefore the tissue within the grasp is not susceptible to any undue shrinkage and resulting hemorrhage. There is no raw surface left in the peritoneal cavity to form attachments to intestine and omentum. There is no sloughing of the pedicle. There is no distortion of the pelvic organs from the stump being fixed to the abdominal wall, pressing upon the bladder, or interfering with the bowels. The risk from hernia at the point of fixation of the pedicle is entirely obviated. There is a comparatively painless convalescence which is at least two weeks shorter than that of the extra-peritoneal method. And here I wish to reiterate what I said in my first report on this subject, read before the Academy of Medicine in December, 1892. That I was convinced that this method had come to stay, and that the clamp in abdominal hysterectomy would as certainly be a thing of the past as it is now a thing of the past in ovariotomy.

In conclusion, I wish to say that with the present

low mortality following total extirpation of the fibroid uterus, we should not hesitate to advise all patients who are subjects of fibroid tumor to submit to the operation at once, if their life is endangered or health destroyed, either from the tumor or complications arising from it.

WOUND OF LEFT SUBCLAVIAN ARTERY.

Read before the Southeastern Kentucky Medical Society, at Stanford, Ky., April, 1894.

BY J. N. BAUGHMAN, M.D.

FLAT LICK, KY.

Member Knox County, Ky., Medical Society; Southeastern Kentucky Medical Society; Central Kentucky Medical Society; Kentucky State Medical Society; and American Medical Association.

On the afternoon of Nov. 7, 1893, Charles Haywood, aged 19 years, was stabbed in the left side of the neck about one and one-half inches above the clavicle and about two inches from sternal end of clavicle. The knife, which was an ordinary pocket knife about three inches in length of blade, going downward, backward and inward, wounding the subclavian artery in its first division; as to the nature of the wound of the artery, we were unable to tell, but are of the opinion that the knife punctured the vessel. Dr. James Steele and myself saw the case in about two minutes after the wound was received. The red arterial blood was spurting out of the wound in a stream half as large as one's finger and to the distance of about one foot above the boy's head. He was reeling from the shock and the sudden loss of so much blood, and was in what I thought a dying condition. We caught the boy, and by direct pressure, and from his fainting, stopped the blood. Dr. Steele continued the pressure while I went for styptics to my drug store, which was right at hand. The wound was packed with absorbent cotton saturated with Monsel's solution until we could get instruments, etc., to attempt to ligate the vessel, and while we were attempting to do so, we prevented hemorrhage by pressure against the vertebral column. We enlarged the wound but after repeated efforts were unable to reach the bleeding vessel, it being so deeply seated. We saturated absorbent cotton with Monsel's solution and packed it over (*not in*) the wound and held it until a firm clot was formed and the entire mass adhered firmly to the boy's neck and effectually stopped the bleeding, but it made a very ugly and bunglesome mass of blood and cotton. The patient was now resting very easily, and it being dark we decided not to disturb him until morning, when we would be better prepared to again try to secure the vessel.

Dr. B. F. Herndon saw the case with us next morning, November 8, and we decided that as we had the hemorrhage stopped it would not be wise for us to interfere with it, by again trying to secure the vessel and also having the fact staring us in the face that in all probability we would again fail, and even if we did succeed in tying the vessel our patient would be almost sure to die during the operation or soon after; lastly, the friends were unwilling for us to do so, unless we could give more hopes of success.

We had to relieve the bladder with the catheter for several days. We applied Listerin to the mass on the wound every day and by so doing were enabled to keep down all offensive odors, and had the wound entirely cut off from the atmosphere. The patient had scarcely any fever and the circulation was kept regular with digitalis and aconite. The pupil of left eye was widely dilated and remained so for about two months, when it became normal, and has continued so. The reason of this is supposed to have been on account of the wound being so near the origin of the vessel that it interfered with the circulation in the left carotid artery. A slight abscess also formed in the right ear and discharged for some two weeks a non-offensive pus, but then ceased to give any further trouble.

The second day after the wound was received, we washed the patient thoroughly, except the wound, which was not interfered with until November 19, when the coagulum, cotton, etc., was thoroughly softened with warm carbolized water, and removed, when the wound seemed to be in the very best condition. The entire wound was filled with healthy granulations and we thought our patient would soon be well. The circulation in the left arm was much improved, having been reduced to the minimum when the injury was first received, but the left arm was almost useless and has remained so ever since and is much smaller than its fellow.

When we dressed the wound we saturated absorbent cotton with Monsel's solution and laid it over the sore, Dr. Gross saying it is one of our best antiseptics, and this being the case we would thereby get a double effect from its use. The patient seemed to be doing splendidly until November 24, when we again dressed the wound which was suppurating slightly and not of the most healthy nature. There was a very slight depression in the lower angle of the wound, which was gently dressed with carbolized water and then a linen cloth covered with vaselin was placed over it. The patient was left lying upon his back, in which position he had been from the beginning, and with his head slightly rotated toward the right side. The next day, November 25, the patient became uneasy and had forebodings that he was not going to recover. He also had some fever and his pulse was a little fast. We cheered him up as best we could and left him. Both Dr. Steele and myself lived near where he was.

On Sunday morning, November 26, about 4 o'clock, we were both aroused with the information that the boy was bleeding. Dr. Steele, being endowed with the happy faculty of going into his clothing head foremost, was upon the scene in about three minutes and found the boy had almost bled to death, and he ran to my residence and store for Monsel's solution, which with us in this particular case was a cure all. When we returned the boy had fainted, the hemorrhage had ceased and he was not dead, but was so near the brink we thought we would soon be relieved of our charge.

Dr. Erichson says: "After the first secondary hemorrhage the surgeon may, and after the second he must use heroic measures to stop it." We were inclined to cut down upon the artery and tie it at all hazards, even in the face of the record that there had never been a successful case of this kind, but the friends of the patient objected. Our patient soon rallied and was doing as well as could be expected until December 8, when we were again startled by the cry: "The boy is bleeding!" Luckily for the patient and also for ourselves this was soon after daylight, and Dr. Steele and myself were both up and were enabled to be at the patient's bedside in less than three minutes from the time the hemorrhage began. We

packed the wound with absorbent cotton saturated with Monsel's solution and this, coupled with the boy's fainting, stopped the hemorrhage before damage enough was done to produce death.

At each bleeding he had lost nearly a half gallon of blood and was now in a most deplorable condition; it seemed as if there was no possible chance for his recovery. The friends objected to our again trying to ligate the artery, for while we told them there was no other remedy, we also informed them of the fact that no one had ever recovered from an operation of this kind. In a few days after each hemorrhage, our patient would rally from the shock and loss of blood, and with the exception of constipation which had to be relieved by injections, would be doing nicely for from eleven to fourteen days when he would again have a hemorrhage which would only be controlled by the timely arrival of his medical attendants and from the syncope which resulted in every hemorrhage but one; this time the blood issued in a small stream, and he did not lose over one and one-half pints. There were in all, six hemorrhages, and the patient lost some two or three gallons of blood, but would recuperate from each one so he would live through the next.

After the last hemorrhage he was in a truly deplorable condition, suffering fearful agony and could only be kept easy by giving enormous doses of morphia. There was a good deal of nausea. The last hemorrhage was about the fifteenth of January, 1894, and the patient's neck is now (April 19) and has been for two months entirely healed. It is impossible to know the condition of the artery, but fears are entertained that an aneurism may develop at any time. The patient is now cheerful and able to be sitting up, but from the great anemia he is very weak, and it will be many months before he is well, if such an event should ever occur. Within the last two months he has suffered a great deal from the passage of renal calculi, but now seems to be improving, though he still has some pus in his urine at times. However, he does not suffer from the attacks of renal colic nearly so often as he did a few weeks ago. He has suffered a great deal from general neuralgic pains, and has had one or two swellings of left knee and ankle, but this would only last for two or three days.

One fortunate circumstance is that the patient has never sneezed or coughed since he was wounded. This was one thing we feared, for had it happened it would almost certainly have precipitated another hemorrhage.

We only dressed the wound when we were absolutely forced to do so, but by having the air excluded by packing over it absorbent cotton and Monsel's solution we were enabled to keep it in an aseptic condition, and we applied Listerin over and around the dressing every night and morning.

ADDENDA.—At this date, May 23, the wound is firmly healed and no *bruit* can be heard, which shows the artery to be well healed, with no indication of any aneurism, but the patient is still in a very feeble condition, having to be helped up and down. The left arm remains useless but the circulation in it is good. The patient still continues to pass renal calculi and no treatment seems to abate it in the least. It is evident to my mind the boy will always be an invalid which is due to the great amount of blood lost. As far as the wounded artery is concerned it has successfully healed, which is something wonderful, and so far as I have learned has never before occurred in so large a vessel. A wound at this point has never recovered save in one case, that of Dr. Dunlap, of Danville, Ky., when he ligated the first part of the left subclavian artery in a negro boy at a Philadelphia hospital. In his case, he tells me, the left arm was useless the same as the above, and the pupil of the left eye was dilated for some time but finally became normal.

SOME OBSERVATIONS ON THE DISEASES OF THE ALIMENTARY CANAL AND THEIR COMPLICATIONS.

Read before the Missouri State Medical Society in convention at Lebanon, Mo., May 16, 1894.

BY PAUL PAQUIN, M.D.

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The diseases of the alimentary canal may be divided into two general classes: The primary and the symptomatic; the primary, in its turn, may be subdivided into specific and non-specific affections. The symptomatic include a variety of morbid conditions too numerous to enumerate. It is my purpose in this paper to make a few general remarks on the morbid conditions in general which affect the alimentary canal, and the complications which are frequently noticed in connection with them.

The primary diseases of the digestive apparatus under the two subdivisions just mentioned include everything, from such serious specific maladies as cancer, tuberculosis, typhoid fever, cholera, etc., to those often confused conditions considered more simple, as indigestion, dyspepsia, etc. I do not wish to be understood, however, in making this classification of the primary diseases of the alimentary canal, that all the diseases usually listed under the title of non-specific, are such in fact; if all diseases due to microbes are specific, there are many more affections of the bowels that deserve this title, than is usually granted. But in the present state of the medical mind, we are justified in terming non-specific a variety of indefinite or definite, microbic affections, causing more or less serious disturbances, but not usually affecting the substance of any organ to a marked degree.

Of the symptomatic or secondary diseases of the alimentary canal, much could be written. A great number of nervous diseases, for instance, produce or favor the development of morbid conditions in the digestive tract. It is so with a number of affections of certain organs of other apparatus; diseases of the lungs, throat, nasal cavities, the liver, kidneys, for instance.

On the other hand, there are certain forms of diseases of the digestive apparatus which result in complications in other organs or sets of organs, principally in the nervous system, the kidneys and the apparatus of circulation.

Until very recently, the diagnosis and treatment of the majority of the diseases of the alimentary canal was more or less empirical. Conclusions were reached from external symptomatic evidence and from the history given by the patient, and treatment was usually based exclusively on such slim grounds. Indeed, this course is prevalent now, very extensively. It is no wonder, therefore, that so many of the diseases of the alimentary canal which at first

seem slight become rebellious and chronic and sometimes never yield to treatment. The digestive apparatus being, as it were, the soul of the machine, *i. e.*, the furnace manufacturing the material for the energy of the economy, is the set of organs that should be most properly and faithfully cared for. As a matter of fact, there are no parts in the human body so greatly abused by the individual, the cook and the polypharmacist of the medical fraternity.

Bouchard, Dujardin-Beaumetz, Matthieu in France; Ewald in Germany; Jaksch, of the University of Prague, and Cagney, of London, have by their extensive researches and experiments established grounds for clinical diagnosis of those maladies, which are of the utmost value for those who devote serious attention to the diseases of the alimentary canal. In the first place, they have given us some reliable means of chemic, microscopic and bacteriologic analyses of the contents of any portion of the alimentary canal, and of those products of the urinary secretions which result from disturbances of this apparatus. They have also established rational grounds for the prescription of rational dietetics, formulated with special reference to any given disease in an individual. Finally, they have given us successful means of treatment which were never before used and which we find, even now, difficulty in bringing to the favorable notice of the medical profession of our country, particularly in the West. Indeed, it has been my misfortune to have heard reputable physicians scoff at the idea of trying to diagnose obscure maladies of the alimentary canal by clinical analysis, and treat them by the new methods of the French, German and English, and the Eastern Americans. I have heard some decry even the use of the stomach tube, which is more harmless than the catheter, and ridicule the idea of the utility of intra-intestinal and intra-stomachal electricity. The very same men would affect to believe that intestinal disinfection is, likewise, a theory that can never be applied usefully in practice. There can be but two excuses for such views to-day: Either ignorance of the advanced methods of diagnosis and treatment of the diseases of the intestinal apparatus, or indolence when it is found necessary to go through a long, tedious process of exact analysis and protracted treatment. It is much more convenient, in fact, to write a prescription on an assumption acquired from a cursory examination than to take some days in making the examination, and some weeks or months in irrigation and disinfection, or other treatment of the digestive organs.

The first indication in a given malady is to find its origin and its cause. The next, whether it is complicated or not. These precepts apply emphatically to the digestive maladies. To arrive at these facts one must go systematically through the methods of examination. In the majority of cases, first, the buccal cavity should be examined with reference to the microörganisms and other morbid evidences that may be found there, such as coated and furred tongue, foul breath, etc. It should be noticed also whether there exists any nasal catarrh, with secretions running down into the stomach. Then, if it presents any evidence of morbid phenomena (and sometimes when it does not, positively) the stomach itself, should be examined: 1, as to its dimensions and physical conditions, to establish whether or not it is dilated or hypertrophied, and whether pathologic lesions or a growth exists; 2, as to the reaction of the stomach contents, and their nature from a bacteriologic standpoint; 3, as to the capacity of the stomach secretions to digest albumen and the effect of the digestive juices on starch and other substances (sometimes it is even necessary to establish the absorption, capacity and the motility of the stomach itself;) 4, as to the existence or non-existence of stenoses or strictures of the cardiac or pylorus orifices. If there are indications we should then examine especially with reference to cancer and ulcers.

In another class of morbid conditions we are first led to examine the stomach to establish whether or not its coats are inflamed, whether the contents contain living microörganisms, and whether there exists catarrh of the stomach. In still another class of diseases we find ourselves in the presence of indications of certain neurotic conditions, as hysterical gastralgia; genuine gastralgia, as a result of the diseases of the central nervous system; neurasthenic gastralgia of the irritating and depressing varieties; hyper-acidity of the gastric juice; nervous vomiting; cramps of the stomach; paresis of the cardiac orifice; nervous anacidity of the gastric juice, which necessitates most of the tedious inquiries just mentioned for a safe diagnosis. Finally, having satisfied ourselves as to the origin and nature of the disease by these investigations, it may be found necessary (and sometimes before the investigation we have to take into account) the relation of the diseases of the stomach to those of other organs. It is here that we have to deal with symptomatic intestinal disturbances and complications. We find them appearing in tuberculosis, in valvular diseases of the heart, in diseases of the kidneys, the liver and the central nervous system, diabetes, rheumatic diathesis, etc.

The examination of the intestines is made on the same general line indicated for the stomach. We first proceed to the physical examination and then to analyses as accurate as possible, including the chemistry, bacteriology and microscopy of such intestinal contents as may be deemed wise to investigate. Our investigations should be made with a view of determining: 1, the physical conditions; 2, whether or not microörganisms play any part in the production of the morbid phenomena presented, what organic lesions, if any, may be revealed in the dejecta. We should establish the form of the intestinal irritation, the nature, if deemed necessary, of the microbes found in the bowels, the kinds of food that fail of digestion, the chemical products of intestinal putrefaction and other kinds of fermentation, the evidences of auto-intoxication that may be presented, the nature of the mucus, if any, expelled, etc. Nor should we stop our analysis here; we should test the urine thoroughly, not only to exhibit its density and reaction or to establish the presence or absence of albumen or sugar, but also with a view of discovering whether any of the intestinal products, due to diseases of or fermentation in the intestines, are excreted with the urine. Having thus carefully gone through the processes necessary to make a safe diagnosis of any given morbid condition of the alimentary canal, we have most important data on which to base treatment.

Generally speaking, most of the diseases of digestion are more or less complicated, or aggravated, at least, by the action of microörganisms; therefore, in

the majority of cases, it will be found of the greatest utility to irrigate the stomach and the colon, and then disinfect the small intestines by the use of such antiseptics as will reach them without losing their power and with the least irritation, and begin at that point to arrest the growth of ferments. This general treatment is applicable, usually, not only in all diseases in which there is so-called dyspepsia, with the exception of cases of cancers and ulcers—in which modifications are necessary—but is applicable also in typhoid fever, in Asiatic cholera, cholera morbus, and in innumerable other morbid conditions of the digestive tract that every physician needs to understand well, and that may occur independently or in connection with some other affections. The stomach tube, for the pure or medicated lavage and disinfection of the stomach plays a most important part. By its use, gallons of water can be used each day or each sitting. The following medicinal agents may be used with advantage in the disinfection of this organ:

ROSENHEIM'S SOLUTION FOR LAVAGE OF THE STOMACH.

Borax	2 drachms.
Creolin	4 grains.
Salicylic acid	18 "
Thymol	4 "

Use with a syphon tube after clear water lavage, once a day for disinfection.

COMPOUND CINNAMON AND CITRIC ACID LAVAGE.

Pasteurine, (composed according to published formula and analysis, of cinnamon, citric acid, gaultheria, witch hazel)	2 ounces.
Water	1 quart.

Use with syphon tube as preceding prescription. Either of these formulas may be used in lavage of the colon.

For the small intestines and for continual disinfection, calomel may first be used in doses varying from ½ to 3 or 5 grains, preceded and followed by an alkalin laxative and then by the long use of acid antiseptics, as Pasteurine, or the use of other products arresting aerobic and anaerobic germs, as naphthol, benzo-naphthol, which spend their force particularly in the small intestines. The stomach and lower bowels can be irrigated with water, medicated or not, with the agents just mentioned, using for the purpose a colon tube four or five feet long. I need not say that the intestinal elimination as well as kidney elimination, should be rendered and continued as perfect as possible. The free use of pure water, hot or cold, is for this purpose, very beneficial. The elimination may be assisted otherwise by medicinal agents as may be deemed best under the circumstances.

There are a number of conditions of the stomach and bowels that can be materially improved and sometimes cured by the proper use of electricity. It is, to-day, practicable to introduce an electrode into the stomach. Having filled it partly with water an electrode is introduced into the stomach, and the other one is applied externally wherever wanted. Galvanism and faradization may thus be produced with perfect safety. The same process of electric treatment, involving the whole length of the canal from the stomach to the rectum, may be used with one pole in the stomach and the other in the lower bowels, thus passing a current longitudinally through the tract. In various forms of atony of the digestive tube, this kind of treatment was found particularly useful.

All these new methods, however, would avail little for permanent cure were it not for the proper use of dietetics, during and sometimes after the treatment. It is here that the knowledge of the physician in the composition and the physiologic digestion of food is taxed to its utmost capacity; for one can not always prescribe a diet with the assurance of getting favorable results, without being well versed in these branches. Furthermore, it is absolutely necessary in many cases to be acquainted with the physiologic, chemic and bacteriologic condition of the alimentary canal to understand what phenomena must take place when foods of a given kind shall reach it. The haphazard diet that we usually find prescribed in many cases is often fraught with danger or, at least, very commonly produces disturbances more serious than existed before treatment. Very few in general practice would agree, for instance, in giving to the stomach complete rest from any kind of food for as long as six, seven or ten days in the case of catarrh of that organ, feeding the patient during all that time with pre-digested food by colon enemata, and yet this is precisely what is done occasionally in aggravated forms of this disease, and with the very best success.

The greatest difficulty that we find in the way of treating diseases of the alimentary canal by improved methods is that so many object to the use of the stomach tube, fearing its introduction into the organ, because it produces nausea and sometimes a sense of choking; and physicians who will not use this method have encouraged this repulsion and thereby robbed many a patient of this one means of salvation, until no remedy could be successful. On the other hand, I have met practitioners who had used the tube for awhile and stopped it for no other reason than that one or two patients never came back, and the doctors lost that much revenue.

I submit, that since the evidences are eminently in favor of most of the modern improvements and methods of diagnosis and treatment of the diseases of the digestive apparatus I have mentioned, it behooves every physician to give them careful attention. True, it requires time and apparatus, but in the matter of reaping satisfactory results it will pay, although it may not yield much financially.

THE RISE AND FALL OF THE LICENSED PHYSICIAN IN MASSACHUSETTS. 1781–1860.

The President's Address at the Ninth Annual Meeting of the Association of American Physicians held in Washington, May 29, 1894.

BY REGINALD H. FITZ, M.D.
BOSTON.

In calling to order the ninth annual meeting of our Association I desire to express the highest appreciation for the honor you have bestowed upon me in appointing me to preside over your proceedings. To conduct the affairs of so aristocratic a democracy has been made a task so easy that the gift of persuasion, or the knowledge of parliamentary law become wholly unnecessary qualifications. The one obligation which has weighed somewhat heavily is the thought of the opening address which is to prepare the way for such communications as you are to make for the advancement of scientific and practical medicine—all the more as my own attention has been particularly directed for the past few months toward a class of practitioners who have no idea of scientific medicine, and whose only thought of the practice of medicine is how much money can be made out of it.

It may not be uninteresting to learn what men like yourselves, many years ago, did in order to discourage such persons—what they planned, what they accomplished, and why they failed. I will, therefore, ask your attention to the rise and fall of licensed physicians in Massachusetts, 1781–1860.

In the "Records of the Governor and Company of the Massachusetts Bay in New England" (1854, III, 153), is to be found the first legislation concerning the regulation of medical practice in Massachusetts. On May 3, 1649, the General Court, held at Boston, voted as follows:

"Forasmuch as the laws of God (Exod: 20. 13) allowes no man to touch the life or limme of any pson except in a judicyall way, bee it hereby ordered and decreed, that no pson or psons whatsoeuer that are imployed about the bodyes of men, woemen, and children for preservation of life or health, as phisitians, chirurgians, midwives, or others, shall presume to exercise or putt forth any act contrary to the knowne rules of arte, nor exercise any force, violence, or cruelty vpon or towards the bodyes of any, whether young or old,—no, not in the most difficult and desperate cases—wth out the advice and consent of such as are skilfull in the same arte, if such may be had, or at least of the wisest and gravest then present, and consent of the patient or patients, (if they be mentis compotes,) much lesse contrary to such advice and consent, vpon such punishment as the nature of the fact may deserve; wch lawe is not intended to discourage any from a lawful vse of their skill, but rather to encourage and direct them in the right vse thereof, and to inhibit and restrayne the presumptuous arrogance of such as through præfidence of their oune skill, or any other sinister respects, dare be bould to attempt to exercise any violence vpon or towards the bodyes of young or old, to the prejudice or hazard of the life or limme of men, woemen, or children."

Until the years immediately preceding the War of the Revolution there was no more stringent regulation of medical practice than this. But in 1760 the City of New York had found it necessary to regulate the practice of medicine within its limits on account of the abundance of quacks preying upon the community. Five years later the Medical School of the University of Pennsylvania was established, and in the following year the New Jersey Medical Society was founded. In still another year the Medical School of Columbia College began its career; and in 1771 the colony of New Jersey passed its act regulating the practice of medicine, to be followed in 1774 by the abortive attempt in Connecticut.

The years thus ripe in revolutionary ideas and acts produced their fruit in Massachusetts.

Although there were excellent physicians in the larger cities and towns of the Commonwealth, and several of them possessed medical degrees received in Europe, they were few and far between. Most practitioners had served merely a sort of apprenticeship to their seniors. There was no medical school in the State, and but two in the country, and these almost as remote as the leading schools of Europe at the present day. Any one undertook the study of medicine in such manner as he saw fit, and entered his practice with as little preparation as he chose. A considerable number of wholly unqualified practitioners thus were to be found, a source of danger to the community, a disgrace to the name of physician, and a cause of jealousy, contention and distrust among the members of the profession.[1]

The example set by New Jersey and New York was one which demanded a speedy following, and thirty-one of the leading physicians of Massachusetts, sixteen being from towns outside of Boston, became incorporated as the Massachusetts Medical Society, "that a just discrimination should be made between such as are duly educated, and properly qualified for the duties of their profession, and those who may ignorantly and wickedly administer medicine whereby the health and lives of many valuable individuals may be endangered, or perhaps lost to the community."

That this purpose might be carried out, the President and Fellows of the Society or their appointees from its members were given "full power and authority to examine all candidates for the practice of physic and surgery, who shall offer themselves for examination, respecting their skill in their profession, and if upon such examination, the said candidates shall be found skilled in their profession, and fitted for the practice of it, they shall receive the approbation of the Society in letters testimonial of such examination," etc. They were obliged, under penalty to hold this examination, although candidates were not obliged to present themselves for approval.

The State thus did not prevent the practice of medicine by any one, but it implied that the letters testimonial of the Society discriminated between the duly educated and properly qualified, and the ignorant and wicked. By the limitation of the maximum membership to seventy, admission to the Fellowship became a proof of distinction which the better educated and higher minded physicians were proud to attain. This number, furthermore, gave evidence of the comparatively few physicians in the State at that time, who were considered worthy of this high distinction. Indeed, it repeatedly happened in the early life of the Society that it was impossible to secure the attendance of a sufficient number of Fellows to form a quorum to transact business.

Two years after the incorporation of the Medical Society the Medical School of Harvard College was established; and it was feared that the power of Harvard College to examine medical students and grant degrees in medicine might interfere with the authority of the Society to examine candidates for practice and issue letters testimonial. According to the memorial of Dr. John Warren in 1811, this "would have produced the most unhappy effects, but for the repeal of an exceptionable article in that establishment, and the accommodating conduct of those who, at that time, were the guardians of science and the patrons of the healing art."[2]

But doubts arose with reference to the duties and powers of the Society concerning the examination of candidates and its authority to demand and receive compensation for its services, and an act in addition to the act of incorporation was passed in 1789. It was therein made the duty of the Society, "in order more effectually to answer the designs of their institution, from time to time to describe and point out such a medical instruction or education as they shall judge requisite for candidates for the practice of physic and surgery, previous to their examination before them. . . and they shall cause the same to be published in three newspapers in three different counties within this Commonwealth."

The Society continued to fail in its object to create a proper standard of medical qualifications. The population of the State rapidly increased, and the number of practitioners likewise. There was no sufficient inducement to lead physicians to apply for

[1] Proceedings of the Massachusetts Medical Society, 1831, 19.

[2] Dr. S. A. Green's Centennial Address, Med. Comm. Massachusetts Medical Society, 1875–81, xii, 639, 654.

the approval of the Society; and in the first twenty years of its existence only some twenty candidates had received the testimonials in approval of their professional skill.[3] In the same period Harvard had conferred its medical degree upon thirty candidates.

Early in the present century Dr. John D. Treadwell, a young, learned, devoted and public-spirited physician of Salem, impressed with the inability of the Society to accomplish its aims, endeavored to improve its usefulness. An extensive correspondence was instituted among the members and with the assistance of Mr. Sewell, afterward Chief Justice of the State, a bill was drafted which, somewhat modified, was enacted in 1803.

The Massachusetts Medical Society, as it now exists, was then instituted; and its plan of organization became a model for other State societies. It was no longer a close corporation with a limited membership, but it was possible for every physician in the State to become a Fellow. It was only necessary that he should have been a student in medicine agreeably to the regulations of the Society, and pass a satisfactory examination before the censors, after which he received a license to become a practitioner of medicine or surgery; "and after three years of approved practice in medicine and surgery, and being of good moral character, and not otherwise," he became a member of the corporation by subscribing to the by-laws.

The medical graduates of Harvard University were made licentiates without passing an examination, since the right to confer degrees had been granted Harvard College long before the Massachusetts Medical Society was incorporated. "The only means of avoiding collision with that ancient and respectable institution was by the compromise which was adopted."[4]

A duly licensed physician in Massachusetts in 1804 was required to give satisfactory evidence of the following qualifications before being admitted to examination for the license: Some acquaintance with Latin and Greek, and with the principles of geometry and natural philosophy; three full years of study under the direction of some respectable physician or physicians whose practice he must have attended. During this time he must have read the most approved authors in anatomy, physiology, chemistry, materia medica, surgery, and the theory and practice of physic. He was examined in physiology, pathology, therapeutics and surgery.

There was still no obligation on the part of any practitioner to present himself for license; and the only privilege enjoyed by the licensed physician, apart from the right to attend the meetings of the Society and the use of its libraries, was exemption from service in the militia.

Notwithstanding the Act of 1803 made it possible for every properly qualified physician to become licensed and a member of the Society, it proved necessary to take further steps to bring them within the fold, and in 1806 a by-law was passed in the following terms:

"To promote the laudable design of the Legislature, in forming and incorporating this Society, to prevent as far as may be all unqualified persons from practising medicine or surgery, and in order to discourage empiricism and quackery: it shall be deemed disreputable and shall be unlawful, for any Fellow of this Society, in the capacity of physician or surgeon to advise or consult with any person who having been a Fellow of the Society, shall be expelled therefrom, or with any person whatever, who shall thereafter commence the practice of medicine or surgery within this Commonwealth, until he shall have been duly examined and approbated by the censors of the Society or by those of some district society," etc.

The object of this by-law was to guard the public against ignorant, designing and unscrupulous pretenders. The Society had provided the means by which physicians could give evidence of having followed a suitable course of study, and it was its duty to inform the public that if it employed unlicensed practitioners it must suffer the consequences.

Notwithstanding these attempts at compelling practitioners to become educated physicians, the standard was evidently too high for all to attain. Many could not comply with the requirements; others did not find a sufficient inducement in the honors and privileges bestowed by the Society. The Thomsonians, then beginning their career, required no education and no license. There was no law to prevent their entering practice; and Chief Justice Parsons[5] had then made his famous decision in the case of the Commonwealth v. Thomson, "that if the prisoner acted with an honest intention and expectation of curing the deceased by this treatment, although death, unexpected by him, was the consequence, he was not guilty of manslaughter. . . . There is no law which prohibits any man from prescribing for a sick person with his consent if he honestly intends to cure him by his prescription; and it is not felony, if through his ignorance of the quality of the medicine prescribed or of the nature of the disease or of both, the patient, contrary to his expectation, should die."

The Chief Justice evidently felt that there was likely to be need of some legislation which should prevent the occurrence of such cases, for he closes his decision by saying:[6] "It is to be exceedingly lamented that people are so easily persuaded to put confidence in these itinerant quacks, and to trust their lives to strangers without knowledge or experience. If this astonishing infatuation should continue, and men are found to yield to the impudent pretensions of ignorant empiricism, there seems to be no adequate remedy by a criminal prosecution, without the interference of the Legislature, if the quack, however weak and presumptuous, should prescribe with honest intentions and expectations of relieving his patients."

In 1811 an unsuccessful attempt was made to incorporate a rival society with the same privileges as those enjoyed by the Massachusetts Medical Society, under the title of the Massachusetts College of Physicians. The announced reason was that two societies were better than one; the real object was thought to be the establishment of a new medical school.

The Massachusetts Medical Society strongly opposed the scheme, on the ground that it was unnecessary and would lead to the rejected candidates of the one society being accepted by the other, whatever might be their qualification, thus producing disagreements and animosities injurious to the profession and to the public.[7]

It is possible that in consequence of the recommendation of Chief Justice Parsons, certainly with the view of discouraging quackery which was rapidly increasing under the influence of Thomson, the Legislature in 1818 passed its first "Act regulating

[3] Dr. James Jackson's speech at the Annual Dinner, 1856.
[4] Proceedings Massachusetts Medical Society, 1831, 26.
[5] Massachusetts Reports, 1809, vi, 134.
[6] Op cit. p. 142.
[7] Dr. S. A. Green. loc. cit., p. 651.

the Practice of Physick and Surgery," which was supplemented in 1819 by "an Act in addition to an Act entitled 'an Act regulating the practice of Physick and Surgery.'"

According to the first of these Acts, no person entering the practice of physic and surgery within the State could recover by law any debt or fees for his professional services unless he had received a medical degree from some college or university, or had been duly licensed by some medical society or college of physicians, or by three Fellows of the Massachusetts Medical Society, designated in each county by its councilors, with power to examine candidates and grant licenses. Copies of these licenses were to be deposited with the clerk of the town, district or plantation in which the licentiate resided.

In the Act of 1819, that the physician might recover his debts by law, it was necessary that he should be a licentiate of the Society or a medical graduate of Harvard. If the candidate for the license was educated out of the State, the censors might waive a new examination if they were satisfied that he had received an education agreeably to the regulations provided by the Society.

It is stated [8] that this difficult trust was accepted with reluctance,[9] that the law was not sought for by the Society, and that it was doubtful whether its action was not rather injurious than beneficial. Of this law Chief Justice Shaw said:[10]

"It appears to us that the leading and sole purpose of this Act was to guard the public against ignorance, negligence and carelessness in the members of one of the most useful professions, and that the means were intended to be adapted to that object. If the power of licensing were given to the Medical Society exclusively, there would be much more plausible ground, at least, to maintain that the power was conferred on a body who would have a temptation to abuse it, so as to promote their private interests; but where the power is conferred equally on the University charged with the great interests both of general and professional education, and which can not be perceived to have any such interest, that ground of argument seems to be wholly removed, and it seems difficult to perceive how a power which it is important to the community should be placed somewhere could be placed more safely. The courts are all of the opinion that the law in question is not repugnant to the Article of the Bill of Rights, above cited, and that its validity can not be impeached on the ground that it is a violation of any principle of the constitution."

The licensing of physicians by the Society doubtless aided in restraining a certain number of practitioners from adopting some of the methods of the charlatan; but it did not interfere with the encouragement of the latter by the community. I am indebted to Dr. John Homans for the opportunity of quoting from a letter of Dr. George C. Shattuck to Dr. Homans, written July 26, 1828. It gives evidence of the fondness for quackery in Boston at that time:

"The city has 60,000 (inhabitants?) and seventy-one regularly bred physicians. About one-half, from either youth or age, have not much to do. The irregular physicians are numerous, at the head of which, in popular influence, we may place Thomson, who has formed his botanical society, who have individually learned his system of practice by hot drops and sweating, etc. The disciples of this system, perhaps may embrace one-sixth of the population of Boston. The patent medicines are employed in about, I believe, another sixth of the cases."

In 1831 the Society had reached such a degree of success in carrying out the objects of its incorporation that it included in its ranks "nearly every educated practitioner of medicine or surgery in the State."[11]

The line of distinction was so strongly drawn between its members and irregular practitioners "that the profession is no longer made responsible in the minds of men for the consequences of their ignorance and malpractice, nor its harmony disturbed by their misconduct; and they are much less successful than formerly in diverting the confidence of the community from regular physicians to themselves."[12]

At this time, however, there were certain discordant elements within the Society which threatened its prosperity and usefulness. Some of the younger physicians were dissatisfied with the clause in the Act of 1803, which demanded a period of three years of probation in practice before admission to full membership in the Society. The Legislature was therefore requested to repeal this clause, which it did by a special act in 1831, and approved candidates became at once Fellows of the Society.

A more serious disturbance, which menaced the harmony and influence of the Society at this time, was the appeal to the Legislature from the physicians of Berkshire County, in the western part of the State. They desired to be incorporated as an independent body, nominally on account of their distance from the headquarters of the Society, their limited privileges, and their dissatisfaction with the requirements of the censors. It was supposed that this action was largely planned in the interests of the Berkshire Medical Institution, a medical school incorporated in 1823, but without the authority to confer the degree of Doctor of Medicine.[13] It was situated in Pittsfield, and was practically a department of Williams College (not far distant), which had the power to confer degrees, but no medical faculty or medical school. Williams College sanctioned the degree of the candidates educated at the Berkshire Medical Institution. The conditions of this alliance proved important in the courts[14] when the honorary degree of M.D. from Williams College was offered in evidence as a legal qualification. It was decided it was invalid, since the defendant must have both the education and the degree to be a legally qualified practitioner.

In the year following the incorporation of the Berkshire Institution it had petitioned the Legislature to be granted the same privileges as belonged to the medical graduates of Harvard University, the most important of which was that of being acknowledged and received by the Massachusetts Medical Society without examination as regular practitioners of medicine and surgery.

At that time this petition was successfully opposed, on the ground that the Berkshire Institution had no independent board of overseers like Harvard College, and therefore was not under the same restrictions and oversight. The petition to form an independent society was also successfully opposed; but in 1837, with the approval of the Society, an Act was passed, according to which graduates of the Berkshire Medical Institution were "entitled to all the rights, privileges and immunities granted to the medical graduates of Harvard College."

The rights and privileges of the licentiates of the Massachusetts Medical Society had been somewhat extended by the Anatomical Law of 1834, according

[8] Proceedings Massachusetts Medical Society, 1840, p. 68.
[9] Loc. cit., 1831, p. 10.
[10] Hewitt v. Charter, Jr., 16 Pick., 355.
[11] Proceedings Massachusetts Medical Society, 1831, 18.
[12] Loc. cit., 1831, 19.
[13] Loc. cit., 1836, 25.
[14] Wright v. Lanckton, 19 Pick, 291.

to which "the dead bodies of such persons as it may be required to bury at the public expense might be surrendered to any regular physician duly licensed according to the laws of this Commonwealth."

The State had thus definitely committed itself to the regulation of the practice of medicine by the Acts of 1818 and 1819, and had placed the duty of licensing practitioners in the hands of the Massachusetts Medical Society. It conferred but few privileges on the licensed, namely, exemption from militia service and jury duty, the right to obtain and dissect the unclaimed bodies of those to be buried at the public expense, and to collect fees by law.

But unlicensed physicians could take their pay in advance, and were not desirous of the privilege of consulting with the members of the Society. The Thomsonian movement was rapidly spreading throughout the country, appealing to the people by its simplicity and economy, its dogmatic assertions and reports of wonderful cures, its advocacy of vegetable remedies, and its cry of persecution.

The efforts of the Society to include within its ranks all educated practitioners, led in 1836 to the recognition of dentists as practitioners of medicine, since dental surgery was being studied and pursued scientifically by gentlemen of regular medical education.[15]

In the following year a further attempt was made in this direction, by requiring that every licentiate or medical graduate of Harvard or Berkshire entitled to admission to the Society must enter within a year after being so entitled, or be deemed an irregular practitioner. This term was applied to all practitioners in the State who were not Fellows or Licentiates of the Society, or doctors in medicine of Harvard or Berkshire. The above regulation was repealed three years later, since it took away "the freedom originally intended to be allowed to all regular physicians to join the Society or not, as they pleased," and stigmatized "as irregular practitioners gentlemen who have been recognized as competent physicians merely for the exercise of this freedom."[16]

In 1836, the statutes of the Commonwealth were revised, and the report of the commissioners (1835, Part I, 125), includes all the legislation previously enacted, placing the control of the licensing of physicians in the power of the Society.

But the Legislature did not accept the first section, which read as follows:

"No person who has commenced the practice of physic or surgery, since the year one thousand eight hundred and eighteen, or who shall hereafter commence the practice thereof, shall be entitled to maintain any action for the recovery of any debt or fee accruing for his professional services, unless he shall, previously to rendering these services, have been licensed by the officers of the Massachusetts Medical Society, as hereafter provided, or shall have been graduated a doctor in medicine in Harvard University, or in the Berkshire Medical Institution, by the authority of Williams College."

It also negatived a clause making the neglect to record a license a like disqualification to its non-possession.

The Legislature approved this part of the report of the committee with the above exceptions, and it became chapter 22 of the revised statutes, entitled, "Regulations Concerning the Practice of Physic and Surgery."

According to Dr. J. Mason Warren,[17] the first section was omitted in accordance with the wishes of the greater part of the (State Medical) Society . . . as being in its action adverse to their interests. It served merely to excite sympathy, especially for the Thomsonians, and could not prevent them from receiving fees for services rendered.

The Society continued in its work of licensing physicians without apparent disturbance until 1848. At this time its effect in controlling the conditions of medical practice in the State is thus expressed by Dr. A. L. Peirson, of Salem, in behalf of a committee of which he was chairman:[18]

"We have steadily elevated our profession, by improving medical education, encouraging the harmony and honorable intercourse of its members, and have protected from the mischief of quackery, by discouraging every show of it among regular practitioners. This simple and efficient plan of the Society has accomplished all that was ever intended by its organization in 1803. . . . It is to be regretted that, from natural causes, in no way to be attributed to the form of organization, the concentrated action of the Society has not been equally felt in all parts of this extended Commonwealth."

According to Dr. Z. B. Adams,[19] there were at this time 1,237 medical practitioners in Massachusetts, most of whom belonged to the Massachusetts Medical Society.

On the contrary, Dr. J. V. C. Smith presented the minority report of the same committee, in which he states:[20]

"The Society was once eminently useful in protecting the community from the encroachment of ignorant pretenders, . . . and it must be obvious to all that circumstances have greatly changed, our legislative tables have been completely turned, and will probably ever remain so. A license, or medical degree, is no longer requisite for the practice of medicine in Massachusetts, and no laws of the State, or of the Massachusetts Medical Society, are of any avail in guarding the entrance into the profession, or regulating the conduct of its members. . . . Less than one-half of the regular practitioners of medicine now nominally constitute the Society. In Berkshire, there are one hundred; less than twenty belong to the Society. In Hampden, one hundred and thirty (about); and of this number only about twenty or twenty-five are members of the State Society. In some other counties there is doubtless a majority, while in others not one-half of the regular physicians are members. The number of Fellows of the Massachusetts Medical Society is not far from seven hundred, which is not probably one-half of the physicians in the State."

These reports were called forth by a resolution presented by Dr. Childs, of Pittsfield, involving a change in the organization of the Society for the purpose of advancing medical science, promoting harmony and good feeling in the profession, thereby contributing to the best interests of society.

Although the councilors largely favored the views expressed in the majority report, the existence of a considerable degree of dissatisfaction and the necessity of remedying it was apparent in the appointment of a committee to consider the question of altering the by-laws. This committee consisted of Drs. John Ware, A. L. Peirson, W. Lewis, J. Jeffries, J. V. C. Smith, H. H. Childs and John C. Dalton. The report of this committee is especially valuable from the character of the latter, and the recognition of the necessity of the Society to increase and consolidate its strength.

They found[21] that many members had often expressed the opinion that the Society as constituted

15 Proceedings of the Massachusetts Medical Society, 1836, 116.
16 Proceedings of the Massachusetts Medical Society, 1840, 72.
17 Transactions of the Medical Society of the State of New York, 1844, 1845, 1846, vi, app., 40.
18 Proceedings of the Massachusetts Medical Society, 1848, 142.
19 Transactions of the American Medical Association, 1848, i, 366.
20 Proceedings of the Massachusetts Medical Society, 1848, 150.
21 Proceedings of the Massachusetts Medical Society, 1848, 155.

did not accomplish all the purposes of which it was capable—and failed to secure the favor of the profession in remote parts of the State. Consequently only a limited number of physicians found it for their interest to become members. They were called upon to obey laws they had no voice in making and to contribute to the expenses of an organization in which they found it difficult to take part. The Society is but little known to those among whom they are thrown, thus has but little influence over them, and is not necessary to their reputable standing among physicians nor to their success with the community that they should be connected with it.

The committee reported various amendments to the by-laws involving favorable action of the Legislature which took place in 1850. By-law V permitted any reputable practitioner of medicine or surgery who had been in practice not less than fifteen years, to be admitted a Fellow, previously to 1852, by the district society where he resides by a vote of two-thirds of the members present at any stated meeting.

The Society was thus endeavoring to increase its influence in the one direction by licensing as many educated and intelligent physicians as possible, and even without examination in certain instances.

This liberality, however, was to be controlled by what many now see to have been an unwise policy, namely, the treatment of the homeopathists.

In 1846[22] an applicant for membership stated that he had great confidence in the efficacy of medicine "especially when prepared and prescribed agreeably to the directions of Hahnemann." The councilors referred the application to the censors, with full powers to settle the matter, and they admitted the applicant to membership.

In the meantime the influence of homeopathy was increasing, and in 1850[23] it was moved "that all homeopathic practitioners are, or should be, denominated irregular practitioners, and, according to the By-Laws of this Society, made and provided, ought to be expelled from membership." This resolve was tabled on motion of Dr. Bigelow.

At the next meeting Drs. Hayward, O. W. Holmes and J. B. S. Jackson were appointed a committee "to devise some course of action, to be pursued by the Society, in regard to all homeopathists." This committee reported as follows:[24]

"1, *Resolved*, That any Fellow of this Society who makes application to resign his Fellowship in consequence of having adopted the principles and practice of homeopathy may be permitted to do so on paying his arrearages; but he shall not be entitled to any of the privileges of Fellowship, nor shall his name be retained in the list of Fellows.

"2, *Resolved*. That a diploma from a homeopathic institution shall not be received as any evidence of a medical education; nor shall the Censors of the Society regard the attendance on the lectures of such institutions, nor the time passed at them, as qualifications which shall entitle candidates to an examination for a license from this Society."

This report was adopted. Three years later the question of homeopathy was again brought before the Society at the annual meeting.[25] The Essex North District Society there presented the following resolution:

"Forasmuch as there is no common ground of support or sympathy between homeopathy and allopathy;

"*Resolved*, That if the homeopaths are allowed to retain their regular standing in the Massachusetts Medical Society, and claim fellowship and counsel with allopaths, we, as consistent and conscientious individuals, request to be honorably discharged from our allegiance and connection with the parent society."

Dr. Spofford presented the following resolution:

"That, while we recognize the right of regular physicians to use medicine in any quantity or doses which they may consider useful to their patients, we consider all use of the name of homeopathy in public papers, on signs or otherwise, as quackish or disreputable, and that all persons who make pretensions to homeopathic practice ought to be excluded from the Society."

These resolutions, together with the whole subject, were referred to the councilors, who appointed the following committee to report upon them: Drs. Bigelow, Metcalf, M. Wyman, Spofford and Alden. Dr. Jacob Bigelow reported in February, 1854, and his report was laid on the table.

In the next year,[26] the censors of the Suffolk District Society rejected a candidate for admission who avowed himself practicing upon the principles styled homeopathy, on the ground that he was not "fitted for the practice of medicine." It was voted (Feb. 7, 1855), on motion of Dr. Bowditch, "that the Councilors approve of the course adopted by the Censors of the Massachusetts Medical Society for Suffolk District."

In the following June this district society called the attention of the general society to defects in the by-laws concerning the expulsion of members, with reference to a remedy; and this question, together with that concerning the admission of members, was referred to a committee for a report. A few days later the latter reported. Their report was referred to the councilors for adoption. They, in turn, referred the report to a committee, which altered the recommendations; these were adopted by the councilors in February, 1856, and by the Society on May 29, 1856.

These alterations made it possible to expel a member for any breach of the by-laws, for which censure, expulsion or deprivation of privilege was a penalty, and for any conduct unbecoming and unworthy an honorable physician and member of the Society, in addition to causes hitherto deemed sufficient. A carefully arranged method of conducting trials for offenses was also provided. The report of the committee of the councilors recommending these alterations stated that they had no definite measures to offer with regard to homeopathy, and submitted the subject to the judgment of the councilors. This part of the report was laid on the table without debate.[27]

June 3, 1856, four days after the adoption of the amended report by the Society, the Homeopathic Medical Society was incorporated by the Legislature. It was authorized to examine all candidates for membership, and, if qualified, give them the approbation of the Society. Its members were declared exempt from militia service.

In the following year, the motion that all candidates for the Fellowship be examined by the censors was referred to a committee, reported upon favorably, and the Legislature passed a special act March 5, 1859, making this method the law.

At this time the revision of the statutes was again under consideration, and the commissioners had made their report to the Legislature, in which the existing laws concerning the regulation of the practice of

22 Loc. cit., 1846, p. 108.
23 Proceedings Massachusetts Medical Society, 1850, 32.
24 Loc. cit., 1850, 51.
25 Loc. cit., 1853, 102.
26 Loc. cit., 1855, 7.
27 Loc. cit., 1856, 35.

medicine were included. This report was referred to a joint committee, which was subdivided into special committees. The general committee referred the chapter concerning the regulation of medical practice to one of these special committees on May 16, 1859. It instructed this committee, "by special order, to inquire into the expediency of omitting all that part of the chapter relating to the Massachusetts Medical Society and to the regulation of the practice of medicine; and on May 21 they reported to the general committee, amendments striking out every section, and every line, and every word in that chapter which gave the Massachusetts Medical Society any power to examine or license physicians or surgeons, or to prescribe a course of study and qualifications for physicians or surgeons."[28]

Four days later, the councilors appointed a committee, consisting of Drs. J. Bigelow, A. A. Gould, J. Jeffries, G. C. Shattuck, H. J. Bigelow, H. H. Childs and J. G. Metcalf, and "instructed them to look after the interests of the Society in the Legislature," and they were "authorized to take such measures to protect their interests as they may deem expedient."[29]

But, in the words of Mr. Benton, "the general committee adopted these proposed amendments, with the addition of a change of title of the Act from 'Regulations concerning the Practice of Physic and Surgery' to 'of the Promotion of Anatomical Science;' and that chapter now stands, with the same title as Chapter 81 of the public statutes. All the amendments were adopted by the Legislature, and were enacted Dec. 28, 1859. The Legislature then deliberately took out of the law of the Commonwealth every provision for the regulation of the practice of medicine or surgery, or for the examination or qualification of physicians or surgeons."

The committee of the Society appointed to look after its interests in the Legislature recommended, Oct. 5, 1859, that "no person shall hereafter be admitted a member of the Society who professes to cure diseases by spiritualism, homeopathy or Thomsonianism," which was adopted. As evidence of the state of feeling at the time, it may be said that at the meeting at which this resolution was approved, it was voted that the Society disclaim all responsibility for the sentiments contained in the annual address of the day previous. This had been delivered by Oliver Wendell Holmes, and was entitled, "Currents and Counter-Currents of Medical Science."

Thus we see that the Massachusetts Medical Society was organized in 1781 with the express purpose of making a just discrimination between duly educated and properly qualified practitioners and those who ignorantly and wickedly administer medicine. For many years its Fellows acted most judiciously in endeavoring to include within their number every educated and moral practitioner in the State. They accomplished this largely by the force of example, association and united encouragement. The State made them the sole source of licenses to practice. The progress of Thomsonianism left their responsibilities essentially intact. The advent of homeopathy found them weak where they should have been strong, short-sighted where they should have been far-seeing. The leaders were obliged to follow, and the reproval of the censors prevailed against the wisdom of the councilors.

Homeopathic diplomas and homeopathic certificates are now accepted by the Society. Homeopathic physicians have been found fitted to practice by the great public, which decides this question for all. Ten years of increasing intolerance destroyed seventy years of enthusiastic effort, devoted labor, tactful management and wise council in the public interest. The State revoked the control of medical practice, and the people have been the sufferers. The history of Massachusetts in this respect is the history of the country. She was one of the last of the States to lay down the control, and she will be one of the last to resume it.

Thanking you for the patience with which you have listened to an historical narrative which offers but little in the way of moral or example to our own Association, we will proceed to the business of the day.

[28] Argument of J. H. Benton, Jr., before the Committee on Public Health, 1885.

[29] Proceedings Massachusetts Medical Society, 1859, 112.

SOCIETY PROCEEDINGS.

Ohio State Medical Society.

The Forty-ninth Annual Meeting of the Ohio State Medical Society, held at Zanesville, Ohio, May 16, 17 and 18, 1894.

FIRST DAY.

Prayer was offered by the Rev. Charles E. Barnes.

The Address of Welcome was delivered by Dr. E. C. Brush, Chairman of the Committee on Arrangements. The Society was welcomed to Zanesville after a pilgrimage of thirty-nine years.

At the previous meeting held in Zanesville, 1855, Dr. G. S. B. Hempstead, of Portsmouth, presided, and Drs. W. W. Dawson, of Cincinnati, and Charles C. Hildreth, Zanesville, were the Secretaries. Reference was made to Dr. Alfred Ball, of Zanesville, who was the first physician to offer his services to the Governor of Ohio, in 1862, and Dr. Howard Culbertson, who in 1861, was by this Society awarded the prize for the best essay on the use of anesthetics in obstetrics, and also author of the prize essay on excision of the larger joints, presented to the AMERICAN MEDICAL ASSOCIATION in 1876.

The Report of the Committee on Arrangements was then submitted by the Secretary of the Committee, Dr. J. C. Crossland.

Telegrams conveying the congratulations of the Illinois State Medical Society and the Iowa State Medical Society, were received, and the Secretary instructed to return to these bodies, and also to send to the Missouri State Medical Society, the fraternal greetings of the Ohio State Medical Society. These Societies were in session at the same time.

The annual report of the Treasurer and Librarian was read, showing a membership of 665 members, and the Society free from debt. It was accepted.

The report of the Secretary was read and received.

A revised Constitution was submitted by the Special Committee on revision of the Constitution, and was adopted.

The following Committee on Nominations was appointed by the President: Drs. Dudley P. Allen, Geo. A. Collamore, W. J. Conklin, Thad. A. Reamy, and W. J. Scott.

DR. D. S. KELLICOTT, Professor Zoölogy and Entomology, Ohio State University, read the first paper entitled,

THE STATE UNIVERSITY AND MEDICAL EDUCATION.

The author spoke first of the propositions or fundamental principles in accordance with which the University authorities have arranged the course designed especially to prepare students for the successful study of medicine, and then of the course itself.

1. Thorough training is needed for real success in any profession or vocation. This means that the making of a modern master blacksmith requires one to pass the grammar and high schools and four years of as exacting college work as in any course in any college. It has been said, by General Walker, that: "A good technical course produces better educated men in all that term implies than the ordinary college course."

2. The training which is to fit men to practice medicine should be especially thorough and many-sided. It is not only to prepare men to earn a living, but men who, by virtue of their training and opportunities are to be leaders in their respective communities; men who are to have, and may safely have, in charge the lives and health of the people.

3. Therefore, the least that a State university should be permitted to do by way of direct preparation for this great responsibility is a sound preliminary discipline that has reference to the needs, methods and scope of the more strictly university studies of the professional school. This may be accomplished through the regular courses, where pretty free electives are permitted, or by the briefer special course with strict requirements, designed to bring the student out at a definite place, with special fitness and qualities.

4. Medicine has rapidly advanced in recent years as all biological, or more generally, all physical sciences have done. It is less empirical and therefore less independent than ever before; for, as Prof. Huxley puts it: "It is a peculiarity of the physical sciences that they are as independent as they are imperfect; it is only as they advance that the bonds which really unite them all become apparent." The naturalist or biologist has certainly done much to discover and fashion the foundation stones of medicine.

5. It seems, therefore, to follow naturally that the healing art should be treated, from an educational standpoint at least, as a branch of biology, and that the understanding and interest in biology, its methods and its scope, should be broadened and deepened by proper instruction at the proper time, *i. e.*, in the academic course.

6. It appears from a recently issued report from the United States Commissioner of Education, that the relative number of medical students who have acquired academic or scientific degrees is less than formerly. In other words, a larger number, relatively, enter upon medical training direct from the high school, or from the ranks of school teachers or from those who have failed to get on in some other vocation. In the same report it is shown that a majority of medical faculties agree that their students are as well or better prepared now than in former years, so, after all, it may be that the state of the case is no worse, but this is not enough. The difference between "well" and "*pretty* well" is very great. The student's preparation for university studies ought to be "well." It ought to be *very* "well," for until students have special elementary training for the medical course, too much time in that course must necessarily be spent unprofitably on mere elements that should have been well in hand at entrance.

7. The time at present required to earn an academic degree in the American college is regarded by many educators as too long, at least, as compared to the time required in the professional schools. President Hall would "degrade the A.B. degree at least a year in the best colleges;" "Harvard tends toward a three years' course;" while "Columbia allows a coördination of college and professional studies;" so it is a grave question whether it is not better, in the long run, to put more time on the professional training and less on the academic, especially so if the student enters upon his work late in life. To meet this question fairly the State university has instituted a three years' course, the studies of which have especial reference to those that are to follow in the medical college. Moreover, for those who prefer the four years' course in either science or letters, with the degree at the end, pretty free electives are allowed in the fundamentals of a medical course.

8. The Doctor of Medicine has magnificent opportunities for investigation in a range of questions of the highest importance. The annals of science attest their ability. No other profession, speaking generally, in this country, has equal incentives and opportunities; hence the scientific training from the first should be, as far as possible, in the laboratory and with the scalpel. The younger the brain and nerves and muscles when they begin to direct instruments of precision, the greater the skill and conscientiousness in the pursuit of truth in after life; the greater will be the ambition and the broader the foundation therefore to leave one's profession better than he found it.

To enter the course preparatory to the study of medicine at the State university, a student must be 17 years of age and have completed the equivalent of the average high school course in English; it is practically what is now required to enter the engineering and agricultural courses. No language other than English is required.

The course requires three years with an average of seventeen hours per week through the academic year, or about eighteen hundred hours. The time is divided among the several groups of subjects as follows: Foreign language, 432 hours; English, 124; physical science, 318; biological sciences, 656, and the balance upon several subjects designed to make a man a good and strong citizen. In addition, military drill is required one hour per day for the first two years. The completion of this course does not make a finished scholar, but it is claimed that the student concentrates his energy; he has a definite purpose, and there is no subject in the course not germane to his future studies or his future possibilities as a citizen and practitioner. The student who does conscientiously the work of this course is as well or even better prepared to follow and profit by the instructions of specialists than are those who have received a college degree. All the sciences, physical and biological, are taught by the laboratory method. There are two years in physiology and the same in anatomy. One year of three hours a week with text-book, lectures and demonstrations, and one of five hours in the laboratory.

DISCUSSION.

DR. DUDLEY P. ALLEN, Cleveland.—The relative difference between classical training and technical training is discussed in the paper at some length. One difficulty in the United States is that the students do not pass from the preparatory schools into the colleges until 18 or 20 years of age. If they take three or four years special study, they are 26 or 27 years old. If they go through hospitals, that adds another year and a half or two years. If they go to Europe, they come back ready to start at about 30. Men in the United States, beginning the practice after thorough preparation, are considerably more advanced than in Germany or France. A man should be able to begin the work earlier than at present. I presume one difficulty is that a great many colleges are not willing to give a degree to a man who has not studied for years. A good deal can be done in this. Chemistry, materia medica, botany, physics, and also the facts of electricity can be taught in the college or university as well as in the medical college. A four years' college course and four years' medical course could thus be completed in seven years, instead of eight as at the present time.

DR. H. J. HERRICK, Cleveland.—The old idea is that medicine is a learned profession, with theology and law, and it is right it should be so considered. A man hardly knows, before a classical training, what he wants to pursue. Besides books you want manual training. The term should be extended preparatory to studying medicine and perhaps in medicine.

DR. W. J. SCOTT.—The manual training schools are of very great value in training young men how to do and how to think. A boy who is a natural mechanic will make a better surgeon when he studies medicine. This does not argue against a person having a classical education should they desire. With electives in the place of the old regular course in college, the student is sooner prepared to begin the work of life.

The author, in closing the discussion, urged all young men to begin study at an early age, and if they can take a classical course by all means do so, especially where there are electives, as there are now in all leading universities.

THE PREVENTION OF TUBERCULOSIS,

was read by DR. C. O. PROBST, Secretary of the Ohio State Board of Health.

If tuberculosis is a preventable disease surely, considering its prevalence and great fatality no subject of more importance can occupy our attention. Dr. Billings estimates that 125,000 people died of phthisis pulmonalis in the United States in the year 1890. Hirsch says that one-seventh of all deaths among civilized races occur from tuberculosis. The vital statistics of Ohio show the total number of deaths reported from phthisis—laryngeal and pulmonary—during the ten years 1884 to 1893 inclusive, to be 36,455, equal to over 12 per cent. of the deaths reported from all causes. The number reported from tubercular diseases including tubercular peritonitis, tubercular meningitis, hydrocephalous and scrofula, was 42,563, equal to over 14 per cent., or about one-seventh of the deaths from all causes. There were 16,521 deaths from phthisis in males, equal to 10.4 per cent. of the deaths from

all causes in males, and 18,800 deaths from all forms of tuberculosis, or 11.8 per cent. In females there were 19,934 deaths from phthisis, or 13.9 per cent., and 23,762 deaths from tuberculosis in all forms equal to 16.4 per cent. of the deaths from all causes in females. It is usually found that the mortality is greater in males.

In the prevention of tuberculosis we should work in two directions: 1, to prevent the broadcast sowing of the bacillus tuberculosis; and 2, to fortify the soil against its growth.

Let us consider the latter, the predisposing cause, first. How may we control heredity? Whether legislation to prevent the marriage of consumptives, or the children of consumptive parents would be wise or unwise we need not expect any movement in this direction with the present public feeling in the matter. The children of tuberculous parents, however, should be specially guarded against prolonged or close exposure to the exciting cause as in nursing a phthisical person without proper care of the sputa; while by strict and continued attention to all the conditions that favor physical, especially chest development, and the maintenance of a high standard of health their resistance to the tubercle bacilli should be increased. The duty of imparting such instructions belongs to the family physician.

Certain occupations, in which workmen are necessarily and continuously exposed to the inhalations of dusts, especially dusts with sharp cutting points, are attended with a comparatively high mortality from phthisis including phthisis pulmonalis. Against 100 deaths from phthisis in all males between 25 and 65 years, there are 1,576 deaths from this cause in the ten dust-inhaling trades. This greatly increased death rate is doubtless attributable to pulmonary injuries, which favor either the entrance or growth of the bacillus or possibly both; and it is to be noted that while these workers in dust present an unusually high comparative death rate from phthisis, they are still more frequently the victims of other forms of pulmonary disease. Other occupations show a preponderance of death from this disease. This is specially noticeable in occupations carried on in close, badly ventilated rooms, where little physical exercise is required and where constrained position is unfavorable to chest development as among tailors shoemakers, printers and the like. The cause is probably to be found in the constant breathing of pent-up vitiated air, which acts both to concentrate the bacilli cast about the work-shop by those already affected, and to produce a pulmonary condition favorable for their growth. A high death rate is almost invariably found among those constantly exposed to prebreathed air, as in prisons, barracks, nunneries, etc. An opportunity is here presented for the State to very materially lessen the loss of life from phthisis, and at the same time from other causes. Laws should be enacted compelling owners and operators of shops and factories to provide appliances for the removal of all machine dust. Workmen exposed to dust arising from hand operations, which can not be so removed, should be urged or required, if possible, to wear respirators. Greater attention should be given to the ventilation of such places, and minimum requirements as to air space per capita and renewal of air should be provided for by the State and enforced by its agents. The State should also undertake to secure proper ventilation of school houses, for it can not be doubted that the constant breathing of impure air in schoolrooms lays the foundation for much of the disease, of tuberculous as well as other character, occurring later in life. Municipal authorities should provide for the ventilation of cities by the judicious location of public parks, and by regulating the width of the streets and height of buildings; the proper cleaning and sweeping of streets is also a factor in lessening the spread of tuberculosis and other air borne diseases.

Of the other predisposing causes of tuberculosis, damp soil and damp dwellings may be mentioned. Sewerage becomes a factor in reducing the mortality from phthisis, and municipal authorities might also require the proper drainage of the soil upon which dwellings are to be located.

We turn next to the exciting cause. the tubercle bacillus. This may usually be found in all tuberculous discharges, but is chiefly disseminated by dried sputa of persons suffering from phthisis pulmonalis. If every person suffering from this disease could be induced to expectorate into a receptacle containing a disinfectant solution, or into cloths which are at once burned, the ravages of tuberculosis would undoubtedly be very greatly lessened. Not until the masses are made to realize that consumption may be communicated from person to person, may we hope for general observance of such measures. The public press should be enlisted in this educational crusade; and the State Board of Health, by properly prepared circulars, should widely disseminate among the people plain instructions for the prevention of consumption. In theaters, halls and other places of public assemblage, and in railway cars and steamers, it would be possible to require that cuspidors containing a disinfectant should be provided. There is always great probability that a room occupied by a consumptive has become infected, and such a room, when vacated, and the clothing and bedding of the patient, should be disinfected. Unless the relatives or friends are both willing and intelligent, this should be done under the direction of the health authorities, and wherever this seems necessary, the attending physician should report the fact to the board of health. Should tuberculosis be made a notifiable disease? In my judgment it would be unadvisable to attempt to enforce such a rule in Ohio until public opinion has declared in favor of it. The establishment of hospitals for consumptives is to be recommended.

One important channel of infection remains to be considered, viz., the ingestion of tuberculous meat and milk. The prevalence of intestinal tuberculosis in children is believed to be due largely to the ingestion of raw milk from tubercular cows. The bacillus is not destroyed by the gastric juice. As we can hardly expect to stop the eating of rare meat or the drinking of unboiled milk, steps should be taken to eradicate the disease among food-producing animals.

The facts and arguments presented seem to justify the following conclusions:

1. Tuberculosis is invariably due to the action of the bacillus tuberculosis.

2. The healthy human body, under ordinary circumstances, is immune to the disease.

3. Among the predisposing causes productive of tuberculosis are: *a*, heredity; *b*, certain occupations; *c*, breathing impure, especially pre-breathed air; and *d*, dampness of soil and dwellings.

4. The knowledge that tuberculosis is a communicable disease, and instructions for its prevention, should be widely disseminated among the people.

5. State and local authorities should combat in every possible way the predisposing causes of the disease, leaving mainly to attending physicians the proper treatment of patients to prevent infection.

INFECTION IN TUBERCULOSIS—FOOD PRODUCTS.

This paper was read by Dr. H. H. Spiers, Ravenna. No factor is more conducive to the well being of a people than diet of food product. England and India may be cited in illustration. Exchange the food products of these two countries for five generations, and think you their relative strength would remain the same? As with the nation so with the individual, though less marked. Bone, brain and muscle are built on food ample in quality, quantity and variety.

At times a staple production fails or is defective or diseased, through climatic or other causes, and a people dependent on one production must then face starvation or become enervated through diet. As examples may be mentioned the famine in Ireland through failure of the potato crop, local outbreaks of ergotism, etc. Again a product may be defective in that it is improperly cared for. Overripe fruits, partially decayed vegetables, or meats improperly kept must cause sickness to the consumer. In regard to a food product there is only one royal way: *To select only the best.*

There is only one food product with which we are all familiar that is an ideal perfect food: Pure milk. No article has been more used and abused, and it stands to-day eulogized and condemned. Its purity is affected by intrinsic or extrinsic causes. In other words, milk may be changed during secretion or after it is withdrawn. Of the various changes that take place after milking we will not speak, but simply state that they may all be prevented for a longer or shorter period by a proper sterilization.

Of the changes that take place at or during secretion we wish to speak more particularly:

1. It is asserted by high medical authority that tuberculous animals secrete milk containing bacilli, but so far as known to the author no one argues the presence of the bacilli in milk. Seeing is believing.

2. Sterilization of infected food products does not restore a perfect food. No sterilization will change a diseased grain or partially decayed vegetable into perfect food. Were five tons of moldy hay sterilized after the most approved German method, is there a physician who would pay a full market price for the hay? The hay is an imperfect food before a mold fungus starts, and killing the mold fungi does not restore

perfect bay. Milk secreted by a tuberculous animal is a diseased product before the bacilli are found and killing the bacilli by sterilization does not restore a perfect milk. Milk is a secretion; an elaboration of materials from the blood. If the blood be pure the milk is pure, and *vice versa*. The milk of a syphilitic is poor in quality, and should be nursed only in exceptional cases. What shall we say of the milk of an animal suffering from a constitutional disease? Herein, it seems to the writer, lies a secret of the 50 per cent. of mortality under 5 years of age. Poor as are all artificial infant foods, in that they do not contain the elements of nutrition —they are superior to commercial condensed milk, gathered as it is from unknown sources, in that they do not contain elements of disease. If pure milk be the only perfect food, if the infant human race must live on milk, then the way to obtain pure milk is the desideratum of the century. We must have healthy animals, and these can be best obtained by procuring healthy progeny by selection. The animals must conform to hygiene. The man who sells rotten bananas and robs you of your child is no more guilty than the man who improperly cares for the cows that furnish the infant's food. They should alike be held amenable to law. Every precaution should be taken to keep milk pure, and herein lies a field for sterilization.

As to infection in tuberculosis. Imperfect food product lowers the vital resistance, and lowered vital resistance in a tissue means weakness in that tissue. It is the condition of the system that allows the bacilli to enter.

IS CONSUMPTION CURABLE?

This subject was treated by DR. R. E. CHAMBERS, of Chandlersville. The paper was limited to the discussion of tubercular consumption. Many cases reported as cured, in some instances the report being sustained by post-mortem examination, and doubtless correct, may be chargeable to some accidental cause. A case may be here related which came under the observation of the author:

A young lady was annoyed by a cough which became troublesome. There was hectic fever, excessive expectoration, great emaciation, and other physical signs of consumption. The case was abandoned as hopeless. Finally, during a difficult paroxysm of coughing, she felt something hard in the expectoration, which upon examination proved to be a chicken bone which she had drawn into her lungs years before. The healing process commenced and from that date recovery was manifest. Should the investigator for pulmonary facts examine her lungs, they would reveal cicatrices, similar to those which have been found post-mortem in cases reported as recovered from tuberculosis. Diluted alcohol constantly applied by means of six folds of linen over and across the upper lobes of the lungs seems to have power in checking the progress of the deposition and the softening of tubercle in the lungs, and the number of patients who have recovered from incipient consumption under its use and who after many years are still living and in apparent health, speak in strong terms of its value. I have treated some patients with this, in connection with cod liver oil, but without success.

As to heredity, I may mention in illustration a family under my observation: The mother died of the disease, and the father remarried. The children of the second wife were nursed by the children of the first marriage. One by one the children, whose mother had died of consumption, on attaining their twenty to twenty-fifth year, developed the disease and died. The children of the second marriage did not show a trace of pulmonary trouble, and are living to-day. They all grew up at the same house and with the same surroundings. This would surely speak in favor of heredity; on the other hand, it would indicate that the disease is not contagious. The bacilli, which have been claimed to be the cause, belong to the same class of organized life as our forest trees, simply vegetable scavengers. Some consider this as a result and not a cause, and if this be true, we may well question the plausibility of the culture of this decomposed structure, introduced hypodermically into the muscles of the back, destroying an organism incased in lung structure so long that it has become a part of it. It is now claimed by Koch that this culture will not kill the bacilli; it will only make its home uninhabitable. It is to be seriously doubted whether a cure was ever effected; at least, the author has never seen one cured after the disease was fully established.

DISCUSSION OF "CONSUMPTION."

DR. CHAPMAN, of Toledo, five years ago read a paper on what he called tubercular diathesis, and at that time the author of the first paper took the very same grounds he did. There is a way to prevent consumption, which we are learning every day. We should try to prevent an heredity that will develop into a condition susceptible to this disease. The time will probably come when medical men will be called into a household to be constant attendants as long as there is a possibility of tuberculosis remaining in the family. The stooping of the shoulders, turning of the arms at the shoulders, and the sluggishness in walking allow the lung to take such a position that air can not readily pass in and there is caused a necrosis, and as this extends the soil is ready and the germ of tuberculosis will lodge there and be developed. I believe the destruction of the bacilli, with attention to the soil, are going to do all that can be done toward prevention, and I believe the history of the future will not show 14 per cent. of deaths from that horrible disease.

DR. H. H. STRAIT, Cleveland, thought the tubercular diathesis is a catarrhal condition; that is, it is not tuberculosis, and that a great majority of those cases recover. It may be termed a pre-tubercular disease. The irritation of the mucous membranes may here be called an apex catarrh. It is certainly well to make a diagnosis before the patient has tubercle bacilli in his sputum. In the dispensary he had seen only one case recover after the bacilli were found in the sputum. There is a catarrh of the lungs that is non-tubercular, but predisposes to tuberculosis.

DR. H. J. HERRICK, Cleveland, regarded consumption as a disease of impaired nutrition, involving primarily the digestive organs. He did not accept apex catarrh. The trouble originates back in the gastro-intestinal canal, and we should look there for the cause of the difficulty and the cure. The tubercle should be regarded as in a measure a deposit, and it is not difficult to show the connection between impaired nutrition and assimilation and this condition of the lung. Creosote as an antiseptic unquestionably does help.

DR. C. E. BEARDSLEY, Ottawa—If a parent is affected with tuberculosis about the thirtieth year, say, his children will have it about the same time. As to whether the bacilli produces the disease or not, it does seem that a condition must exist before the bacilli can be produced; there must be a diathesis. The disease can be cured up to the time that there is a lesion, but afterward it is impossible.

DR. JOHN MURPHY, Cincinnati—While I agree with the author, I must say he is in the minority of the bacteriologists. Koch has not pretended to say whether the bacillus was the cause or the result, and that question to-day is one which is perplexing and troublesome. One thing is certain, and that is these patients are usually materially benefited by a change to a high, dry atmosphere. All people can not enjoy that, and it would be well to have poor people sent at public expense to one of these climates when afflicted with this disease. We often inherit other diseases from as far back as a great-great-grandfather or great-great-grandmother, and why not phthisis?

DR. PROBST—Answers have been received from 1,149 physicians of the State, a little more than one-sixth. As to the immunibility of the disease, there were 509 answers, giving instances of that kind occurring. In answer to the question as to the disease being communicated by the husband and wife, with no heredity in the wife, 82 cases were given; with the husband and wife, when the facts of heredity were not given, 56, making a total of 148. With the wife and husband, heredity in the husband, 68; wife and husband, heredity not stated, 45, where there was no blood relation to account for heredity. These facts indicate the possibility of the communication of tuberculosis without heredity.

"La Grippe in the Differential Diagnosis between Scarlet Fever, Measles and Rothëln," Dr. James L. Tracy, Toledo, was read by title.

DR. AMELIA J. PRIOR, Cincinnati, read a paper on

SCARLATINA.

The author spoke of the disease from an obstetrical standpoint. Some claim that pregnant women are more liable to the disease, and some that they are less liable. In a case in which a young married woman was exposed to it she did not contract the disease; she continued to the end of pregnancy, and the disease was not developed during the puerperal period.

DR. J. S. HALDEMAN, Zanesville, discussed the subject of

DIPHTHERIA.

The disease starts from, and fixes itself at the point of inoculation, and extends from that location through the whole system. This idea of transmission, however, stands in contra-distinction to the one that the poison may be taken into the system some other way, either by the lungs,

stomach or intestines without causing any appreciable local destruction of tissue, penetrates the whole organism, and finally advances centripetally to a certain part and then locates itself. Diphtheria may occur sporadically as well as epidemically, and in certain especially favorable localities it may become endemic. It may be considered a miasmatic contagious disease. It may be conveyed through the air alone or by solid matters, to which it may have become attached. The virulence of the contagion depends very much upon the susceptibility of the individual exposed. Children seem to be particularly impressed by it, especially those under 12 years old; those most likely to be seized and to succumb are from 2 to 5 years old, while under five months they seem exempt and impenetrable to its ravages. The sexes are about equally susceptible. Its period of incubation is variously estimated, and depends upon the amount of infectious material, the force of resistance, and on the structure and texture of the tissues which permit the entrance and absorption of the diphtheritic matter. It usually appears about the third day after exposure.

The disease may assume different forms and degrees of virulence, as follows: 1, the catarrhal, which is the mildest; 2, the croupous, in which the fibrinous exudations are manifest; 3, the septic, in which the disintegration of the exudations takes place, followed by processes of decomposition, and gives rise to septicemia; 4, the gangrenous, in which the inflammation may so deepen and intensify that the textures and functions of the parts may entirely lose their vitality, and the most offensive sloughings obtain.

The disease may be arrested in any one of these forms by timely, constant, careful and correct medication and treatment. The cure in the first and second is much more easily accomplished than in the third and fourth, and in the fourth it rarely takes place. An early diagnosis is therefore important. The catarrhal variety, perhaps, is recognized with the greatest difficulty from the fact of its apparent insignificant symptoms, when other affections may be mistaken for it.

First Day—Evening Session.

(A CRITIQUE)—THE DOCTOR.

Dr. Samuel Hart, Marietta, read this able article. There is in the title, "doctor," no guarantee and no trade-mark. It is appropriated by the mountebank, the brazen pretender and the doctor of corns. Medicine has had an evolution along the centuries, but superstition, priestcraft and astrology still remain in some modified form as an opponent of true medicine of the present day. The drug trust is custodian and practically owner of all the favorite formulæ of the doctor which are to him valuable personal property, and represent some of the best efforts and experience of his life. The trust appreciates a popular prescription, for it continues to return for "refilling;" not only for the first patient, but for many friends and relatives who are "exactly like" No. 1. The unlimited "refilling" of unindorsed prescriptions is directly responsible for a deplorable amount of alcoholic and narcotic habit, which is induced insidiously by chronic medicine tippling. The immense power of the nostrum and the semi-proprietary trade is directly in the possession of the druggist. It is the disheartening opponent of all honest and intelligent practice. The legitimate drug and pharmacy business is essential, helpful and convenient, and if it will take safe and wholesome care of the public interests it will be appreciated as a good trust. But the doctor is on the defensive against the antagonism of numerous creeds, the popular demands for new and startling cures and plans, the omnivorous craving for pills and the "Spring Renovator" and the "Safe Kidney Bug."

The universal, kind, but dangerous advice-giving by the laity is to be deprecated. Last, the public press is averse to regular, conservative, non-advertising medicine. The immense nostrum business; the disgraceful advertisements covering acres of illuminated pages, must command a friendly newspaper interest and efficient lobbying power in legislation to prevent a clean and wholesome State regulation of medical practice.

But the case of the doctor is not grave; the prognosis is entirely hopeful, the prescription infallible, and of his own medicine; it is comprised in a single word, *merit*—professional merit.

THE VALUE OF RECENT THERAPEUTIC LITERATURE,

By Dr. W. C. Chapman, Toledo. The literature on therapeutics is very deceptive, and at present we are unable to derive the benefit from it which we should obtain. There is a tendency to take up new remedies rather than to consider thoroughly the old reliable ones, and this is to be deprecated. Many remedies are given, having essentially the same action. We need literature upon which we can rely. It is far better to have one good remedy, thoroughly understood, than any number of unreliable ones. It is better we should use the remedies with which we are familiar, and not experiment upon our patients. We are too prone to give medicine when not needed, and to give more than is necessary. It is our duty to assist nature. Take the cases serratum, and about 73 per cent. will recover if given water alone.

DISCUSSION.

Dr. C. E. Beardsley spoke of the influence of medicine, and in illustration mentioned the action of salt solution and atropin upon nerves, as demonstrated by the use of the microscope. If we have potent medicines we can surely find use for them therapeutically. By studying the action of these drugs we are able to produce the effects we desire.

Dr. W. J. Scott—There is no doubt but medicines have influence when properly used. Sometimes two or three remedies may be used to advantage. This, however, does not argue that we should make unnecessary use of them. The therapeutic literature of to-day undoubtedly contains many new remedies of little or no practical value, and these should not occupy the most valuable part of our literature.

Dr. E. G. Alcorn—It will not be twenty-five years until the regular school of medicine will be treating symptoms instead of dosing as they are to-day.

The author in closing the discussion advised more precision. Dosage in sickness is not to be condemned, but it is better to have one good remedy that you thoroughly understand than a million that scatter. We should use the remedies that we know. At present one man will use one thing, another will use another thing, and if you analyze those things there is practically no difference in their action. There is no doubt but bromid is an excellent remedy, and so is bromo- and hydrochloral, but it is doubtful whether even these will do everything they are claimed to do. This is one respect in which our present literature is unreliable.

CERTAIN ENTOZOA OF THE DOG AND THE SHEEP,

by Prof. D. S. Kellicott, Columbus. The anatomical laboratories and the clinics of the Veterinary Department of the Ohio State University afford exceptional opportunities to study entozoa of domestic animals. Intelligent prevention on the part of the flockmaster or scientific treatment on the part of the physician depends upon a knowledge of the habits and life histories of the parasites. There are many entozoa that have been long known in one stage, but how acquired by their host, or whether they develop direct or in a second host, are mysteries still. The well-bred and well-fed dog is a noble animal, a useful one, and a faithful friend; but the dog of the other sort is a menace and a nuisance. Just why people in general will meekly allow themselves to be overrun by sparrows, insect plagues and the plague of curs, is inexplicable. Cobbold has given a list of twenty-one species of entozoa infesting the dog, six of which occur in the list infesting man.

The paper records observations on five species affecting the dog and sheep; of these one is a distome, three are tape worms, and the fifth a nematode. The distomum sp. was discovered in the lungs of a dog last March. The three tape worms are Taenia coenurus, T. serrata, and T. cucumerina (elliptical). These are the only species thus far found to infest dogs examined at the University. The T. coenurus is by far the most common, occurring in from 15 to 20 per cent. of all old dogs that have come under observation. It is safe to say that it is harbored by one in every five to ten worthless curs roaming our streets and fields, who in consequence scatter millions of eggs upon soil and in streams for the infection of sheep or other herbivorous animals. The life cycle of the second specie, T. serrata, begins in the rabbit, when it bears the name, cysticercus pisiformis. It is rare with us, but Cobbold states that 5 per cent. of English dogs harbor them. It is plain that rabbit for valuable dogs should be cooked. The T. cucumerina, common in Europe, is rare in Central Ohio. The intermediate host is the dog louse, Trichodectes canis.

Oesophagostoma columbianum, the nematode, in the immature stages produces the "nodular disease of the intestines." The worm evidently has a wider range than was once supposed, and may be doing damage in our section that is attributed to some other species.

DISCUSSION.

Dr. Kinsman—It has been known for a long time that a common cause of death among horses is an aneurismal dilatation of the mesenteric arteries, and manifestations of these

worms have been found post-mortem in Central Ohio. It is found epidemic in sheep. In Iceland, where the people live in close proximity with the animals, the primary stage occurs in the dog and is transmitted to the owner, and we thus have the hydatid disease.

DR. W. J. SCOTT—It has not been mentioned how these parasites are developed. The eggs of the parasite are very numerous, and pass from the bowels of the dog. In his licking to get himself clean and then drinking out of the bucket, he deposits them there, and then the Icelander drinks out of the same bucket, and these are developed. Some years ago a Dr. Cleveland claimed to cure almost any sort of disease with hot water and raw beef. He fed his subjects on raw beef and it was found that a good many of them had tape worms of a peculiar development. These probably came from the cocci contained in the beef.

The eggs are perfectly smooth, five or six times the diameter of the blood corpuscles, and are scattered in bunches all over the thoracic wall. An interesting question is how they got there.

APPENDICITIS—THIRTY CONSECUTIVE OPERATIONS DURING ONE YEAR, WITH ONE DEATH,

by DR. DUDLEY P. ALLEN, Cleveland. The paper contains an account of cases operated upon from April 26, 1893, to May 3, 1894, being thirty in number. Two of them were operated upon by Dr. Wm. H. Nevison, and twenty-eight by the operator. Eighteen were operated in the chronic and twelve in the acute stage. In addition, seven cases were seen in consultation in which delay was recommended, and one case was in a moribund condition when first seen, and died about an hour later. In another case, seen in consultation, a collection of pus was diagnosed in the right lumbar region. and an operation advised, which was made by Dr. Humiston. The case recovered completely. Another case was that of a boy dying with evidences of obstruction of the bowel, the pelvis half way from the pubes to the umbilicus being filled with pus. An operation was strongly urged, although the patient was already in collapse and died some three or four hours later. At the autopsy it was found that the origin of the collection of pus was an ulcerated appendix. The one case which died was that of a young man, seen in his first attack. Though the attack was somewhat severe, he recovered and was seemingly well, but was seen five or six weeks later in a second attack. This was not very violent, but he was positively advised to have an operation performed after the severity of the symptoms had abated. He was again seen in a third attack and similarly advised, but no operation was permitted until the seventh attack, which was six months after the original one. He was then in a decidedly serious condition; the adhesions were found to be very great, and the operation was one of extreme difficulty, but seemingly successful. On the sixth day swelling of the left parotid gland became apparent, and two days later the parotid was thoroughly opened, before any abscess had formed, there being simply multiple minute points of breaking down tissue. The patient died on the fifteenth day. Two other cases in which delay was recommended came to operation in subsequent attacks, and both recovered. During the year there were seen forty cases of appendicitis, thiry having been operated upon, and all but one have recovered. Besides these, one was dying when seen.

In one a large abscess was found and opened in a patient already in collapse, and it was not until the autopsy that its origin was found to have been in an ulcerated appendix. Three cases in which delay was advised were among those operated later. The remaining four cases are still alive, two of the four having suffered from repeated attacks, while two have been lost sight of.

In the acute cases and in those in which pus has been present, the abdominal cavity was packed with iodoform gauze, and the wound left open. When no pus was found, and when possible, the appendix was amputated, invaginated and closed by two or three rows of catgut, and the abdominal wound closed without drainage. In cases with considerable pus present, and extensive ulcerations, too great effort has not been made to remove the appendix. In some cases the appendix was evidently entirely destroyed by sloughing. In others to have found it, would have necessitated opening widely the peritoneal cavity, in which cases it is not wise to pursue the effort too far.

The following conclusions seem justified:

I. Though many cases of appendicitis may recover without surgical aid, it is by no means an easy matter to distinguish these from those which are more serious, and it is of vital importance if surgical counsel is to be summoned, that it should be called before the disease is so far advanced as to render the operation hopeless.

2. Operations for appendicitis, though often easy, are at times extremely difficult, requiring the skill necessary for the most critical laparotomy, and it would be better in many cases to trust to nature than a poor operator.

3. Careful examination will disclose the fact that many patients, suffering from what is supposed to be a primary attack of appendicitis, have had previous difficulty in this region, and an examination of the appendices removed will demonstrate positively the existence of long standing inflammation.

4. Operations in the acute stage of primary attack are beset with danger, and it is important they should be undertaken before the patient is in collapse, before peritonitis has become general and before the patient is thoroughly septic.

Operations upon recurrent cases, though sometimes of extreme difficulty, are in most instances, if in the hands of a skilful operator, far less dangerous than the disease itself, and in such cases the question of operation should receive careful consideration.

DISCUSSION.

DR. HERRICK.—The question is whether operations for appendicitis are justifiable in a great many cases, and what class to operate upon. Of about fifty cases, I have only known two which were operated upon, terminating fatally. In constantly and rapidly recurring cases of appendicitis, our duty is to operate, and to select the time between paroxysms for operation. However, for the last eighteen months there seems to have been too much of a craze for operating.

DR. KINSMAN—In these cases, as soon as there is distension of the abdomen, there is complete paralysis of the bowel, and then, according to Richardson, we should not operate. In several cases I have seen the McBurney point was clear enough, but there was no tumor found. A positive symptom of appendicitis, which can be relied upon, seems to be lacking.

DR. DANDRIDGE—No doubt we should not prolong too long the search for the appendix. Some cases are masked, and very insidious. A case I operated upon yesterday commenced last Wednesday. The case was seen first on Saturday, and there was a well-defined resistance in the right iliac fossa, with marked pain and a slight fever, ranging from 100½ to 102 degrees. The boy did not feel very sick, nor did he present the appearance of being sick. The fever continued, the local condition did not subside, and an operation was undertaken. The appendix had sloughed, the accretion was free, and the terminal portion was gangrenous. There is no doubt whatever but the patient in this case was much safer with the operation than without it, although the symptoms were very slight. The pathologic conditions found indicated that it had existed some time. The surgeons are not so anxious to operate in these cases as they are sometimes charged. It seems that hernia frequently follows this operation.

Every case should not be operated upon, but frequently the surgeon is called too late to operate successfully. It is extremely difficult to determine when to operate. Dr. Richardson recently said to me: "The more I see of appendicitis, the less I know about it." As to diagnosis, I have never yet made an error, but every time I have operated for appendicitis I have found the condition operated for. Definite rules upon which to base a diagnosis can not be given. The condition, however, will usually be found in young people having pain in the region of the appendix.

DR. C. R. HOLMES, Cincinnati, then requested that his paper be read by title: "Diseases of the Accessory Nasal Cavities and Their Influence in Producing Ocular Inflammation; Modern Surgical Treatment and Report of Cases."

(*To be continued.*)

A Wide Liberality.—The will of the late Jesse Seligman, of New York City, provides for the bestowal of donations to not less than forty-seven public institutions, or for public benefactions. The gifts vary from one hundred to seven thousand dollars respectively. The personal estate left by Mr. Seligman is worth over one million of dollars, of which about one-tenth part is donated to charitable objects. He has been styled "a most catholic giver."

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All members of the Association should send their Annual Dues to the Treasurer, RICHARD J. DUNGLISON, M.D., Lock Box 1274, Philadelphia, Pa.

SATURDAY, JUNE 9, 1894.

THE LICENSED PHYSICIAN IN MASSACHUSETTS.

In his address at the ninth annual meeting of the Association of American Physicians, held in Washington last week, DR. REGINALD H. FITZ, President of the Association, traced the rise and fall of the licensed physician in Massachutetts from 1781, the date of the incorporation of the Massachusetts Medical Society, to 1860, when the Legislature had deprived the Society of any power to regulate the practice of medicine by the examination and licensing of physicians and surgeons or by the enforcement of a prescribed course of study and qualifications.

With abundant citations from historical authorities, the learned speaker sketched the growth of the Society and its increasing usefulness and influence, which, in 1818–19 led the State to definitely assume the regulation of the practice of medicine and to place the duty of licensing practitioners in the hands of the Society. In 1831 the Society had reached such a degree of success in carrying out its objects that it included in its membership "nearly every educated practitioner of medicine or surgery in the State;" and for the next ten or a dozen years its policy seems to have been extremely conservative, even going to the extent of discouraging the granting of further power and authority by the Legislature on the ground that it would be adverse to the best interests of the Society and would serve merely to excite sympathy for quacks and irregulars, and especially for the "Thomsonians," who were rapidly increasing in numbers throughout the country—the system "appealing to the people by its simplicity and economy, its dogmatic assertions and reports of wonderful cures, its advocacy of vegetable remedies and its cry of persecution."

This conciliatory policy seems to have been extended to the "homeopaths," and in 1846 an applicant, who stated that he had great confidence in the efficacy of medicine, "especially when prepared and prescribed agreeably to the directions of HAHNEMANN," was admitted to membership. The Society continued its work without apparent disturbance until 1848, when it is recorded in the Proceedings of that year that: "We have steadily elevated our profession, by improving medical education, encouraging the harmony and honorable intercourse of its members, and have protected from the mischief of quackery by discouraging every show of it among regular practitioners. This simple and efficient plan of the Society has accomplished all that was ever intended by its organization."

Two years later the growth of homeopathy had become so great that there was a demand by many members for a change from what they denominated the rule of King Log to that of King Stork, and, although a resolution offered at the annual meeting in 1850, to declare all homeopathic practitioners irregulars and to expel them from membership in the Society, was tabled on motion of DR. BIGELOW, the agitation was still continued, and at the next meeting it was ordered that the diploma of a homeopathic institution should not be accepted as evidence of a medical education, nor as a qualification entitling its owner to "an examination for a license from this Society." Meanwhile, the pressure from the district societies for further aggressive action became more and more pronounced, and, in 1856, at the demand of the Suffolk District Society, the by-laws were so amended as to make expulsion from membership the penalty for offenses hitherto punishable by censure or deprivation of privilege; and a hostile public sentiment was aroused at what was stigmatized as the growing intolerance of the Society. Almost simultaneously with these amendments to the by-laws, the Massachusetts Homeopathic Medical Society was incorporated, and thenceforth the breach between the public and the Society widened year by year.

In 1859 the Massachusetts statutes were undergoing revision, and a committee of the Legislature was instructed "by special order, to inquire into the expediency of omitting all that part of the chapter (of the statutes) relating to the Massachusetts Medical Society and to the regulation of the practice of medicine." The committee reported in favor of such omission, and on Dec. 28, 1859, there ceased to be any regulation of medical practice in the State.

DR. FITZ is evidently not sanguine as to the feasibility of State control of this subject. He closes his address with these words: "Ten years of increasing intolerance destroyed seventy years of enthusiastic effort, devoted labor, tactful management and wise council in the public interest. The State revoked the control of medical practice and the people have been

the sufferers. The history of Massachusetts in this respect is the history of the country. She was one of the last of the States to lay down the control and she will be one of the last to resume it."

As a commentary upon this concluding sentence it should be noted that the Massachusetts Senate has already passed a bill for the control of medical practice in the Commonwealth, substantially the same as that in force in Illinois and many other States. Probably in order to avoid any future charge of "intolerance," section 11 of the bill exempts from its operation "clairvoyants, persons practicing hypnotism, magnetic healing, mind cure, massage methods, Christian science, cosmopathic or any other method of healing," provided they refrain from appending to their names "the letters M.D., or using the title doctor, meaning thereby a doctor of medicine." Surely such a concession should allay opposition, even in Massachusetts.

RIGHT OF RECOVERY FOR UNLICENSED PRACTICE IN EMERGENCY CASES.

The Appellate Court of Indiana considers, in the case of Board of Commissioners of Adams County v. COLE, decided March 13, 1894, the right of a physician to recover for services rendered in a case of emergency without his having the required license to practice medicine. The question arose over a physician located not far from the border line in Ohio, being called to attend a man in Indiana suffering from a broken leg. It was shown that there was a pressing emergency, and an urgent necessity to amputate the leg as soon as it could be done, in order to save the patient's life, so that there was no time to be spent in first securing an Indiana license on the physician's part. The statute of the latter State, however, requires every physician or surgeon desiring to practice his profession there to procure a license therefor, and enacts that no cause of action shall lie in favor of any person for services as a physician, surgeon or obstetrician who had not, prior to the rendition of such services procured the prescribed license. The practice of medicine and surgery consists, the Court holds, in the application of science, skill, and experience to the cure or alleviation of the ailments of the human body; and whether a physician exercises his skill upon one patient, or upon a greater number, he is, in each case, engaged in the practice of his profession. According, then to the letter of the law, strictly and literally interpreted, it says that nothing could be recovered in a case like this. But, it is further declared, courts are not always required to give full force to the exact letter of the law, but are oftentimes permitted—nay, more, required—to relax somewhat the rigor of an exact compliance. And this is one of the cases where the exception is to be made. To hold that the physician's conduct, thus far, was within the inhibition of the statute, would be the extreme of inhumanity. This does not, of course, justify him, the Court adds, in continuing his attendance upon his patient, day after day, without procuring a license for the practice of his profession there, though it does show that he is entitled to recover something for his services first rendered. Among the instructions given to the jury in this case was one to the effect that if a physician competent and qualified, from another State or county, were called on a professional visit for consultation, or the call was made because of some special skill or ability of the physician in a particular branch of his profession, or there was an existing emergency for the attendance of such physician, in order to save life, and under such circumstances the physician acted without procuring a license, such physician would be entitled to recover for his services thus rendered, notwithstanding he had no license, and the law would aid him in making such collection. This charge the Court holds was erroneous. The right to recover is not to be extended beyond the necessity of the actual emergency. It is better that competent physicians should suffer some inconvenience than that the door should be opened for the incompetent. If a physician may safely practice his profession without a license because some one—wise or unwise—judges him to have special qualifications for the treatment of certain ailments, and "the call is made because of some special skill or ability of the physician in a particular branch of his profession," then there will remain few practitioners in all the land who may not utterly disregard the provisions of the law. All that would be necessary for him to show would be that he was called to visit his patient "because of some special skill or ability" in the treatment of some given infirmity; and this he could always do, for the very reason for his call was that his patient believed him to be possessed of such special skill and ability.

CHRISTIAN SCIENTISTS MUST GET CERTIFICATES.

Judged according to both the law and the Gospel, are the so-called "Christian scientists" in the case of State v. BUSWELL, decided by the Supreme Court of Nebraska April 17, 1894; and the judgment rendered is against them. The defendant named in this case was indicted for practicing medicine, as a Christian scientist, without a certificate from the State Board of Health, as required by the State statutes. Strangely enough, the jury rendered a verdict of "not guilty," to which the State excepted, and on its exceptions took an appeal. The Supreme Court sustains the exceptions, but says that in cases presented as this one was, on the exceptions of the State, no judgment can be rendered, and therefore none is attempted. It consequently is here content to pass upon the questions of law raised, for the future

guidance of trial courts. The Act to establish a State Board of Health; to regulate the practice of medicine, in Nebraska, etc., it holds, is as much directed against any unauthorized person who shall operate on, profess to heal, prescribe for, or otherwise treat any physical or mental ailment of another, as against one who practices "medicine, surgery and obstetrics," as those terms are usually and generally understood. The object of the statute establishing a State Board of Health, etc., is to prevent imposition upon the afflicted by ignorant and unqualified pretenders to healing power; and any person not within the exceptions prescribed in the Act, (as persons rendering gratuitous services in cases of emergency, and commissioned surgeons of the United States Army or Navy, and nurses in their legitimate occupations,) and not having complied with its requirements as to a certificate, who shall, under any pretense, operate on, profess to heal, or prescribe for, or otherwise treat any physical or mental ailment of another, thereby renders himself liable to its penalties. The defendant relied upon the teachings of the Bible for his authority as a Christian scientist. Lest his contention be misunderstood or imperfectly stated, the language contained in the brief filed on his behalf is freely used. This and the summary of the evidence given by him and his witnesses furnish some curious reading, though a reproduction of it would not particularly instruct readers of the JOURNAL. The Court also, as before intimated, goes to the Bible for light on the case. It quotes from the eighth chapter of the Acts of the Apostles where SIMON, the sorcerer, figures in the narrative, and he is condemned for seeking to purchase the gift of God with money so as to make gain thereof. The healing of NAAMAN, of leprosy, by compliance with a very simple hydropathic course, and the rebuke of the prophet's servant for taking the reward therefor which his master refused, as well as God's recorded disapproval of BALAAM's partly executed project of profiting by the use of the Divine power with which he was endowed, are cited to show that the exercise of the art of healing for compensation, whether exacted as a fee or expected as a gratuity, can not be classed as an act of worship. Neither is it a performance of a religious duty, as was argued. The conservatism resulting from the study of standard authors might be somewhat depended on to minimize the evils attendant upon unlicensed practitioners' attempts to follow regular and approved methods, although, as against even these, the law should be enforced. Still more stringently, says the Court, should its provisions be rendered effective against pretensions based upon ignorance, on the one hand, and credulity on the other.

Blank Applications for membership in the ASSOCIATION, at the JOURNAL office.

MISREPRESENTATIONS BY MEDICAL EXAMINERS.

The Supreme Court of Arkansas re-states, in the case of the Providence Savings Life Assurance Co. v. REUTLINGER, decided March 10, 1894, the law, as determined by many adjudications, with regard to the effect of misrepresentations made by medical examiners, especially of insurance companies. It says that when a medical examiner, authorized by an insurance company to fill up blanks for answers to questions to be propounded to applicants for insurance in a medical examination, or to fill them up is within the apparent scope of his authority, does so by writing false answers, and thereafter procures the signature of the applicant thereto, after he had given correct answers to the questions, and the Company afterwards receives the premiums, and issues a policy, the Company will, upon the death of the insured, be estopped from insisting on the falsity of the answers, although warranted to be true.

This rule is, however, subject to the obvious limitation that if the applicant, knowing the presence of the untrue answer by having read it or otherwise, afterward certifies to its truth, the insurer may set up the untruth. And if, after the delivery of the policy, he discovers that a fraud has been perpetrated on him and the company by means of the false answers, it would be his duty to make the fact known to the company. He could not hold the policy without approving the action of the agent, and thus becoming a participant in the fraud committed. The consequences of that approval can not after his death be avoided.

It is also held, in this case, that where questions propounded to an applicant for insurance upon his life as to his physical condition are in such terms as include the most trivial ailments or injuries, they will be interpreted as referring only to such illness or injuries as affect the risk to be assumed, unless they are in words which exclude such interpretation. The presumption is that trivial ailments or injuries are not within the contemplation of the parties, and that the questions, in the absence of words directing attention to them, are not asked with the view or purpose of ascertaining the existence of the same. The answers of the applicant are interpreted in the same manner as the questions eliciting them; that is to say, as responsive to the questions in the sense in which they are asked.

INTOXICATION OF PHYSICIAN MAY BE SHOWN.

In an action brought to recover damages for the malpractice of a physician or surgeon, the Appellate Court of Indiana holds, in the case of MERRILL v. PEPPERDINE, decided March 30, 1894, the plaintiff may show, by himself and other witnesses, the condition of the physician or surgeon, as to being intoxicated, and as to his appearance, at the time the services were being performed.

CORRESPONDENCE.

Editorial Correspondence.

DENVER, COL., May 30, 1894.

The ASSOCIATION Train arrived at Colorado Springs at 9 A.M., where we had an excellent breakfast at the "Antlers." A trip to Pike's Peak, which had been contemplated, was postponed on account of the rain which fell in torrents, loosening boulders, which rolled down the mountain and smashed everything in their path so that ascent was impossible; but notwithstanding the rain most of the party went to visit the Garden of the Gods. This singular spot is a large circular area of about 80 acres surrounded by rocks rising from 300 to 500 feet perpendicularly, the crests of which seemed to assume fanciful shapes, and which when viewed in profile might by some stretch of the imagination be said to resemble the animals and faces as announced by our coachman. We rejoined the train fully repaid for our toilsome trip, but more than one of the party expressed the wish that Jupiter Pluvius were not in the ascendency. At Colorado Springs we again met Dr. Maclean's party and congratulations were exchanged at the "Antlers." Dr. Solly, of Colorado Springs, showed our party many attentions. We then left for Denver where we arrived at 5 P.M. amidst a downpour of rain. We were met at the depot by a delegation of Denver physicians among whom were, Dr. Chas. Dennison, Capt. Le Garde, U.S. Army, Clayton Parkhill, Dr. Hopkins, J. A. Rogers, W. J. Rothwell, E. J. Rothwell, W. S. Bagot, J. N. Hall, W. A. Jayne. Many of our party went to Brown's Hotel for dinner, some were entertained by Dr. Chas. Dennison, others at the various clubs. At the Denver club dinner we noticed the following present:

Capt. LeGarde, Denver; Drs. Graham, Chicago; Mulheron, Detroit; Graham, of Denver; Montgomery, of Philadelphia; Donald Maclean, Detroit; Rogers, Denver; Lapthorn Smith, Montreal; E. F. Ingals, Chicago; E. J. Senn, Chicago; Jayne, Detroit; Talbot, Chicago; Frank Woodbury, Philadelphia; Imry, Detroit; Stearns, Indiana; Rano, Connecticut.

Dr. Maclean's party were also in Denver at the same time, and joined our party in the festivities of the evening.

We left Denver at 2:30 A.M.; Dr. Dennison and Dr. Graham of Denver joined our train here.

COLORADO SPRINGS, May 31.

We arrived here for an early breakfast at the "Antlers," and found that the rain had caused landslides at the Manitou tunnel, and a washout near "Divide," so that our train must remain at this point twenty-four hours at least. If the rain continues, the probability is that we will be obliged to remain thirty-six hours longer. The only other road is in an even worse condition by reason of the loss of bridges, so we can not get away and must make the best of it. The party are taking the matter philosophically, but want to see the Peak, which is hidden in the clouds, and the pouring rain does not show at this hour any signs of abatement.

The following is a list of those joining the train at Burrton, Kan.:

C. S. Bond and wife, Richmond, Ind.; Miss Lizzie Hill, Richmond, Ind.; E. Griswold and wife, Sharon, Pa.; J. E. Woodbridge and wife, Youngstown, Ohio; A. C. Brant and sister, Canton, Ohio; A. B. Walker, Canton, Ohio; G. H. Price, Nashville, Tenn.; A. D. Price, Harrisburg, Ky.; Ambrose Morrison, Nashville, Tenn.; G. D. Butler and wife, Pulaski, Tenn.; H. C. Davis, Harrisburg; G. E. Davis, Salvisa, Ky.; C. T. Benner, Tiffin, Ohio; Percy Warner and wife, Nashville, Tenn.; J. A. Nicholls and wife, Pulaski, Tenn.; C. A. Abernathy, Pulaski, Tenn.; Julia Flournoy, Pulaski, Tenn.; A. R. Baker, Cleveland, Ohio; J. T. Reddick, Paducah, Tenn.; A. G. Willey, Spencer, Ohio; Edwin Walker and wife, Evansville, Ind.; A. D. Hahn and wife, Richmond, Ind.; D. C. Wilson and wife and daughter, Ironton, Ohio; O. B. Dunn, Ironton; S. C. Martin and wife, Anna, Ill; S. J. Young and wife, Terre Haute, Ind.; C. Hicks and daughter, Cahorn's, Ind.; S. H. Pearse and wife, Mt. Vernon, Ind.; Miss Alice G. Howard, Mt. Vernon, Ind.; Miss Anna Schrader, Mt. Vernon, Ind.; X. C. Scott and wife, X. C. Scott, Jr., Cleveland, Ohio; J. T. Hibberd and wife, Richmond, Ind.; Miss L. M. Hibberd, Richmond, Ind.; Miss E. M. Comstock, Richmond, Ind.; J. E. King and wife, Centreville, Ind.; J. A. Foote, Terre Haute, Ind.; C. T. Brown and wife, Pendleton, Ind.; J. W. Cook, Pendleton, Ind.

Registration in South Carolina.

AIKEN, S. C., June 4, 1894.

To the Editor:—The Legislature of the State of South Carolina, in session December, 1893, passed a medical law which went into effect Jan. 4, 1894. The tenor of it is:

That any one who has not registered in this State to practice medicine and surgery before Jan. 4, 1894, will have to appear before the Board for examination, after they have presented their diploma to the Board. The Board meets the fourth Tuesday in April of each year, and whenever they deem necessary to have an extra meeting. This year we meet again Tuesday, October 9, and all examinations before the Board are written, two hours being allowed upon each branch. Any one who is practicing in this State after the October meeting will be prosecuted. The fine is $300, and imprisonment for six months.

Any one desiring further information can get it by applying to the undersigned. C. F. MCGAHAN, M.D.

SOCIETY NEWS.

Chemung County Medical Society.—The annual meeting of the Chemung County (N. Y.) Medical Society was held May 23. The following officers were elected: President, W. E. Colgrove; Vice-President, Jonas Jacobs; Secretary, N. H. Noble; Treasurer, C. T. Squire.

Officers Chicago Medico-Legal Society.—The annual meeting of the Medico-Legal Society was held at the Grand Pacific June 2. The following officers were elected for the ensuing year: President, Dr. James Burry; First Vice-President, Dr. C. D. Wescott; Second Vice-President, Dr. Sanger Brown; Secretary, Dr. Archibald Church; Treasurer, Dr. Joseph Matteson.

Indiana State Medical Society.—At the recent meeting of the Indiana State Medical Society, May 17 and 18, at Indianapolis, the following officers were elected for the ensuing year: President, E. S. Elder, Indianapolis; Vice-President, C. S. Bond, Richmond; Secretary, F. C. Woodburn, Indianapolis; Assistant Secretary, K. K. Wheelock, Fort Wayne; Treasurer, J. O. Stillson, Indianapolis.

F. C. WOODBURN,
Secretary Ind. State Medical Society.

American Physicians and Surgeons.—The Triennial Congress of American Physicians and Surgeons closed its third meeting in Washington, D. C., June 1. The meeting was opened on Tuesday afternoon, May 29, with an address by Dr. Landon Carter Gray and the program embraced papers on "Morphology as a Factor in the Study of Disease;" "Sewer Gas;" "Distribution and Control of Leprosy in the United States;" "Nephritis in its Surgical Aspects;" "The Influence of Animal Experimentation on Medical Science" (by Dr. Alfred L. Loomis, President of the Congress); "The Surgery of the Accessories of the Nose;" "The Influence of Infectious Processes on the Nervous System." Delegates were present from the American Surgical Association, American Climatological Association, Association of American Physicians, American Association of Genito-Urinary Surgeons, American Orthopedic Association, American Physiological Society, Association of American Anatomists, American Pediatric Society, American Ophthalmological Society, American Otological Society, American Neurological Association, American Gynecological Society, American Dermatological Association, and the American Laryngological Association.

Washington State Medical Society.—The fifth annual meeting of the Washington State Medical Society was held at Spo-

kane, Washington, May 3 and 4. The attendance was rather small, especially of the members from the western part of the State. The papers presented, were, however, of a higher order than those of any previous meeting.

The following was the program carried out: Opening prayer, by Bishop L. H. Wells, of the Episcopal Church; Address of Welcome, by Mayor E. L. Powell; Report of Chairman of Committee of Arrangements, by Dr. N. Fred Essig, of Spokane; President's Address, by J. W. Waughop, of Fort Steilacoom; annual reports of Secretary, Treasurer, and Publication Committee; report of Committee on Credentials, by G. A. Weed, of Seattle; report of Committee on Necrology, by N. J. Redpath, of Fort Steilacoom; reports of Special Committees; reports of Standing Committees.

The following papers were presented: The Drunkard and His Cures, by W. W. Potter, of Spokane; Auto-Infection, by J. W. Hickman, of Tacoma; Cerebral Palsy of Childhood following Diphtheria, by C. W. Sharples, of Seattle; Cholecystotomy, with Reports of Three Cases, by J. B. Eagleson, of Seattle; Complications and Accidents in Abdominal Surgery, with Reports of Cases, by J. J. McKone, of Tacoma; Surgical Cases of Interest Occurring in Seattle, by C. W. Sharples of Seattle; Surgical Infections, by Edward Bowes, of Spokane; Physiology in the Public Schools, by G. S. Armstrong, of Olympia; Mental Development, by J. M. Semple, of Medical Lake; Concealed Insanity, by W. H. Anderson, of Medical Lake; Some Cases of Optic Nerve Trouble, by R. L. Thomson, of Spokane; Ruptured Perineum, by C. G. Brown, of Spokane; Dry Dressings to Promote Primary Union, by G. T. Doolittle, Spokane; Treatment of Urethritis, by D. G. Russel, of Spokane; Salpingitis, by T. L. Catterson, of Spokane; Cause and Prevention of Peritonitis in Women, by C. P. Thomas, of Everett; Hydatid Cyst of Liver, by J. T. Coleman, of Tacoma; Cleanliness in Surgery, by D. Mason, of Spokane; Trachelorrhaphy Forceps, by J. M. Crump, of South Prairie; Treatment of Foreign Bodies in the Brain, by H. B. Luhn, of Spokane.

The following officers were elected for the coming year: President, Dr. D. Mason, of Spokane; First Vice-President, Dr. J. W. Hickman, of Tacoma; Second Vice-President, Dr. H. R. Keylor, of Walla Walla; Secretary, Dr. R. L. Thomson, of Spokane; Treasurer, Dr. J. B. Eagleson, of Seattle.

Seattle was chosen as the next place of meeting.

PUBLIC HEALTH.

House-to-House Inspection.—The house-to-house inspection, which accomplished so much good last summer in improving the public health of Philadelphia, has been ordered repeated this summer by the authorities of that city. A similar work is being prosecuted, under the auspices of the State Board of Health, in several hundred cities and towns of Illinois, as one of the important features of a sanitary survey of the State.

Another Epileptic Colony.—At the recent meeting of the Illinois State Medical Society a resolution was introduced and adopted, indorsing a proposition for an epileptic colony for the State on the Bielefeld plan. The resolution was referred to the Committee on Legislative Action, with instructions to bring the matter before the next General Assembly and to use all proper means to have such a colony established.

School Vaccination Law Upheld.—In the proceedings growing out of the suit to prevent the New Britain (Conn.) school board from enforcing its school vaccination order, the Superior Court at Hartford has decided that the law giving the school board authority to order all school children to be vaccinated and to exclude from the schools all not vaccinated is constitutional and that orders based thereon must be obeyed.

Vaccination Order Rescinded.—Owing to a conflict of authority between the City Board of Health and the Board of Education in the City of Philadelphia, the Board has withdrawn its order excluding non-vaccinated children from the public schools. The reason given is that as no epidemic threatens at present the Board was "not willing to resort to extreme measures." One way to prevent epidemic smallpox is to compel the vaccinal protection of every scholar and to rigidly exclude every child not so protected at all times and under all circumstances.

Floods and the Public Health.—Dr. Benjamin Lee, Secretary of the Pennsylvania State Board of Health, has instructed the medical inspectors of the Board to exercise increased vigilance in the districts of the State affected by the recent floods, "as such conditions will be left as will, undoubtedly, prove extremely prejudicial to the public health." Inspectors are advised, however, to make no promises of material aid, either in the shape of money or of disinfectants, "as the appropriation for the State Board of Health does not contemplate such use of its very limited funds."

Health of New York City.—Reports of the Bureau of Vital Statistics continue to show an excellent state of the public health in New York City. The annual death rate for the four weeks ended May 26 was a fraction less than 21 per thousand, as against 25.48 per thousand for the corresponding period of 1893. The mortality from pneumonia, although diminishing, is still greater than that from consumption. Diphtheria continues to be the most fatal of the zymotic diseases; a considerable number of new cases of smallpox are still reported every week; there is but little typhoid fever in the city.

Michigan Conference of Health Officers.—The second annual conference of Health Officers in Michigan will be held at Ann Arbor, June 14 and 15. The first day's session will be devoted to the subject of tuberculosis. There will be papers on the "Spread of Tuberculosis," by Prof. F. G. Novy, M.D., of the State University, and on the "Restriction and Prevention of Tuberculosis," by Dr. Henry B. Baker, Secretary of the State Board of Health, with demonstrations of the tubercle bacilli, methods of staining, growing and inoculating with the bacilli and postmortems of animals that have been inoculated with the bacilli. Other subjects to be presented and discussed are the "Causation, Restriction and Prevention of Typhoid Fever," the "Relations of Vaccinia, Variola and Varioloid," and a demonstration of the methods employed in the State Laboratory of Hygiene for the examination of drinking water will be given.

Cemeteries from the Sanitary View-Point.—Investigations of the Paris cemeteries strengthen the arguments against intramural interments and in favor of cremation for the disposal of the dead in the interests of the quick. Although M. Rochard asserts that the belief that bad smells emanate from cemeteries is unfounded and that there is an absence of noxious gases in well-kept cemeteries, there are other evils more insidious and more dangerous. Water filtered through the soil of cemeteries becomes polluted, and wells more than 100 meters from the graveyards of Mont Parnasse and Père Lachaise were found to be contaminated from this source. With regard to the theory of germs being stored up in graveyards and later spread about, resulting in epidemics, M. Rochard believes that it is not impossible that when graves are dug microbes rise to the surface and mix with the surrounding atmosphere; but no fact has yet been demonstrated that this possibility has been recognized. It might be added that the well-known longevity of gravediggers and their general immunity from the zymotic diseases is a disproof of the theory.

Immunization Against Cholera.—Additional proof of the etiological significance of the cholera vibrio and of the feasibility of immunization against Asiatic cholera is furnished in

the experimental work of the pathologist, Sabolotny. He finds that a species of rodent (*Spermophilus guttata*), common in South Russia, is highly sensitive to the cholera bacillus. This animal is readily infected by the cholera culture whether introduced subcutaneously, intraperitoneally, or by the mouth, and whether with or without Koch's preliminary treatment by soda and opium, although this treatment makes infection more certain. It may also be rendered immune by the previous administration of attenuated cholera cultures by the mouth; it then survives the otherwise fatal dose of cholera even when given in conjunction with soda. No doubt, among the numerous species of the *Spermophilinæ* which abound in this country—the ground squirrels, prairie dogs, gophers, etc.—there may be found one or more as useful as the *S. guttata* for the repetition of these experiments by American bacteriologists.

The Epidemics.—Cholera is reported to be general in Canton, and a serious epidemic of a disease from which over 7,000 deaths have occurred since the middle of April, is prevailing in Hong Kong. The disease is said to be similar to the plague which decimated the province of Hochow in 1883-4; but it is thought not unlikely to be the same disease so prevalent in Canton. Cable dispatches report cholera "raging" in the districts of Plock, Radom and Petrokoff in Russian Poland. As a precaution against the importation of the disease into Prussia, an order has been issued to compel all Russians entering Prussian territory to pass through Illowo on the frontier, where the strictest sanitary regulations are enforced.

Between Jan. 1, 1894, and May 31, ult., there were 1,739 cases of smallpox in Chicago, with 501 deaths—a mortality of 28.8 per cent. The monthly increase in the number of cases was as follows: January, 128 cases; February, 233; March, 305; April, 544; May, 529. During the first sixteen days of May there were 398 cases—a daily average of 24.8 new cases; during the remaining fifteen days of the month there were 131 cases—a daily average of 8.7 new cases. The epidemic may be said to be at an end for the season, although four or five new cases are still reported daily.

The Infectious Diseases.—With the object of securing a more accurate nomenclature for the infectious and contagious diseases, Dr. W. H. Thomas, at a recent meeting of the New York Academy of Medicine, offered the following classification:

1. Infectious diseases are due to the presence of their respective living microörganisms in the body.
2. Infectious diseases are divisible into three classes: *a*, communicable; *b*, non-communicable; *c*, septic.
3. The communicable diseases are those whose origin is from an animal body—examples of which are smallpox, Asiatic cholera and tuberculosis.
4. The non-communicable infectious diseases are those whose origin is not from an animal body, but from a place or thing—examples of which are ague, yellow fever and miasmatic diseases in general.
5. The communicable diseases are divisible into two classes according to the ordinary modes of their communication: *a*, into the contagious; *b*, into the non-contagious communicable diseases. The contagious communicable diseases are those in which simple proximity to the sick is sufficient to communicate the infection—examples of which are scarlet fever, measles, smallpox, diphtheria, mumps, etc. Isolation of the sick in these cases is, therefore, needful to prevent infection. The non-contagious communicable diseases are those in which the communication is not by simple proximity to the sick, but through intermediate means of communication. Isolation of those sick with them, therefore, is neither needful nor effective in comparison with measures directed against intermediate means of infection—examples are typhoid fever, Asiatic cholera and tuberculosis.
6. The septic infectious diseases are those in which infection is introduced through a wound or abrasion—examples are erysipelas, hydrophobia, tetanus, etc.

This is a fairly commendable attempt at securing greater accuracy in classification, but it can hardly be called perfect. Dr. Thomas, for example, would scarcely, on reflection, classify all forms of erysipelas as "septic," caused by the "introduction of the infection through a wound or abrasion." This takes account only of surgical or traumatic erysipelas, and entirely omits from classification that form of the disease of greatest interest to the epidemiologist, to-wit, the idiopathic or medical form—the form which more frequently than the traumatic tends to become epidemic through faulty hygienic conditions and surroundings. This form clearly belongs in "class *a*, communicable;" and for purposes of sanitary administration, in the "contagious" subdivision of this class.

MISCELLANY.

Resignation of Dr. Edwards.—Dr. Joseph F. Edwards has resigned his membership in the Pennsylvania State Board of Health.

Practice in Switzerland.—In theory at least, the prohibition of the practice of medicine in Switzerland without the government license, is so strict that a physician without such license is forbidden to prescribe for his own wife during a temporary sojourn in that country.

An Abiotic Region.—Analyses of the air, water and soil of the Spitzbergen group of islands in the Arctic region show an extraordinary poverty of bacterial life. While the air of the streets of Paris contains an average of 51,000 bacteria to the cubic meter that of the Arctic Sea contains only 3 to the meter; and the water of Spitzbergen is not only devoid of any pathogenic microörganisms, but is also entirely free from any kind of bacilli.

The Deadly Decimal Point.—Our esteemed contemporary, the *British Medical Journal*, is another victim of the proofreader's hostility to the decimal point, although we are the actual sufferer. In a recent issue of our British namesake, there appears the following: "There is (says the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION) an average increment of nearly 6,000 new home-made medical practitioners every year, and, while the population of the United States increased 248 per cent. during the decade 1881-90, the number of newly-graduated doctors increased over 50 per cent. in the same period." The insertion of a point before the figure 8 in the percentage of increase of population will relieve us of the charge of indulging in "Yankee bounce" as to our growth, at the same time that it will make clear the lesson of the figures, *i.e.*, that our increase in the number of newly-made doctors is more than twice as great as the increase in population—over 5 per cent. per annum for the former and less than 2.5 per cent. per annum for the latter.

Circumcision Specialists.—In England, where the custom of announcing births in the public prints obtains much more largely than in this country, the proud parents are promptly deluged with samples and circulars of every article pertaining to infant life—from soaps to sucking-bottles, from puff powders to perambulators, from infant foods to physics. The latest development in this line of infant industries is the "circumcision specialist," whose services are straightway offered to the male infant even before he has voided his meconium. The *British Medical Journal* has received the circular of one of these preputial operators, who urges the importance of the youngster being circumcised without delay and offers to do the business in half a minute in an ordinary case and within a minute even in the most difficult. Among the moral and physical reasons for its performance

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ADDRESS.

THE NERVOUS SYSTEM IN DISEASE AND THE PRACTICE OF MEDICINE FROM A NEUROLOGIC STANDPOINT.

MEDICAL PROGRESS—PROGNOSTICATIONS OF THE FUTURE OF MEDICINE.

Address in Medicine, read before the AMERICAN MEDICAL ASSOCIATION, at San Francisco, June 6, 1894.

BY C. H. HUGHES, M.D.

ST. LOUIS.

In this age of preëminent progress in every department of human research and endeavor, I congratulate you on the onward march Medicine has made and is yet making towards its glorious goal—the mitigation of human misery and the mastery of disease, and especially do I congratulate you on the part American Medicine has taken in the scientific triumphs of the closing century over the encompassing elements and environments adverse to man's health and strength and consequent happiness and efficiency in the affairs of life. If we look back over the passing century for only a few decades, at her contributions to the welfare of man, we find that she has given more than her full quota to the common fund of human happiness. She has made physical and psychical tranquillity and power, happiness and length of days, possible to man under the strain and pressure of modern progress. She has searched out and is searching out the causes which are inimical to, or promotive of, man's strength in the battle of life. She teaches him how to evade the one and to utilize the other in power of mind and body.

As our father Hippocrates drove the devotees of superstition from the temple of Hygeia, and taught the people that offended gods could neither bring, nor propitiated gods dispel disease, and was an example of medical hygiene in his own longevity, far beyond that of any man of his time, and as that later medical devotee of Æsculapius, Andreas Vesalius defied the popular prejudice and ecclesiastical power of his day at the risk of his own life, to make his first human dissection (and whose unfortunate untimely death the world has never ceased to deplore), so we, his professional descendants, continue to this day breaking down and ignoring the barriers of ignorance, of prejudice and superstition that have stood or now stand in the way of man's happiness and prosperity, unlocking the secrets of nature's *arcanum*, and setting the captive mind and organism free from the enthrallment of disease and the gloom of untimely death.

Substitutive inoculations, beginning with the triumph of vaccinia, for establishing tolerance and immunity from other violent diseases, are spreading the rescuing power and glory of our noble profession, and the names of Jenner and Pasteur are now immortal. And the "great white plague," consumption, with its 165,000 annual victims in this country alone will soon be a thing of the past, through wisely applied antisepsis.

Electroscopic explorations now penetrate the dark and otherwise hidden places of the human body, making it a glow of light to the diagnostician, while other diagnostic means, electric, physical, chemical, dynamometric, æsthesiometric, thermometric, ophthalmoscopic, laryngo-pharyngoscopic, otoscopic, microscopic, spectroscopic, oncographic, sphygmographic, auditory, percussional and tactile diagnosis and urinalysis, come to the aid of the modern physician in searching out disease. What would our painstaking fathers in the profession have given to have seen this day of accurate methods of determining the existence and place and boundaries and prognosis of morbid conditions. By these means, no viscus and no system of the body escapes the searchlight of modern medical diagnosis.

With these aids at our command, but little, if any, of the human anatomy in health or disease is absolutely beyond the reach of our science, and scarce any part beyond some relief from the multiple resources of medical art. That *noli me tangere* of our ancestors, the abdominal cavity, is no longer a *terra incognita* to the resources of surgery, thanks to Wm. Lister, of London; McDowell, of Kentucky; Battey, of Georgia; and Murphy and Senn, of Chicago; Lane, Gross, Agnew, Frank Hamilton and John T. Hodgen. The once hidden recesses of the brain also are now with impunity penetrated to where our ancestors dared not go, saving lives and minds formerly doomed to destruction, thanks to Fritsch and Hitzig, of Germany, Ferrier and Horsley, of England and Bartholow, of America, the latter having been the first physician in the world to explore and prove the truth of cerebral localization by demonstrations on the living human brain.

"The time has been that when the brains were out the man would die." But we have changed all that. With judicious neuriatic council, profound anatomical knowledge, and skilful surgery, science now penetrates to the very dwelling place of thought and volitional motor impulses in the cerebral cortex, enabling perishing victims to be saved by the helping hand of modern neurology and cerebral surgery.

Thus does medical science move majestically onward in her benefactions, and man, her beneficiary, moves forward to his higher destiny, under her benevolent ministrations.

I could not in the time allotted to this address give even an outline of general medical progress in our day, and I presume it is more appropriate and really expected that I should make an address more in the line of my special observation. Accordingly, since general practice is advanced by light from every quarter, I ask your attention to points in the prac-

tice of medicine from the standpoint of a neurologist.

LA GRIPPE, A TOXIC NEUROSIS.

I begin with that discomforting, distressing, disastrous and often fatal malady, la grippe. A disease with which all of us have become painfully familiar; a malady whose insidious destructiveness has not been properly appreciated by either the public or the profession; a disease which has been laughed at and sneezed at by doctor and patient, even while death was stealthily approaching to claim the unapprehensive victim; a disease whose nervous sequences, where death has not intercepted them, have been astonishingly various and grave. I discuss chiefly the neuropathic aspects and sequelæ of this disease. It is, in my judgment, a toxic neurosis, in its early stage a nervous fever, its later symptoms depending on the centers specially touched by its toxine.

Notwithstanding the warnings and apprehensions early aroused in the minds of a few clinicians of keen observation, the gravity of the grippe, especially in its toxic neuropathic sequence is only just beginning to be generally recognized, though many months have elapsed since Julius Althaus, Symes Thompson and W. R. Gowers, of London; Chas. K. Mills, of Philadelphia; myself and other writers, first called attention, since the appearance of the late epidemics, to this now clearly demonstrable fact. And long before these, in former epidemics, Theophilus Thompson, (the father of Symes) and Graves, Blakiston and Peacock had noted the prominence of the nervous symptoms, especially evidences of vagus implications. Its possible fatality in certain familiar forms is now, after a larger clinical experience, much more generally apprehended and dreaded by the profession, especially since the publication of the post-mortem findings of Kusskow, of St. Petersburg in forty cases, and the fatal results in isolated instances reported in the journals from different sections of the country where epidemic influenza has prevailed.

Kusskow's post-mortems showed hemorrhagic and pyemic or septico-pyemic results as the two forms, with purulent and gangrenous inflammation of lung tissues and frequent metastasis to other organs. Hemorrhages and hematomas in the muscular tissue, parenchymatous bleedings and bleedings by diapedesis, pachymeningitis hemorrhagica interna, in one case. In 50 per cent. of the cases, hyperemia of the pia, also meningeal infiltration and suppurative meningitis and hemorrhage into the lateral ventricle, and very frequently lobar pneumonia. The heart muscle was soft, friable and anemic.

Peritonitis was never discovered. The kidneys were found to be usually affected, the spleen contracted, the intestinal canal was unchanged. Calcification was found in the muscle cells similar to those found in typhoid lesions of the bowels, venous thrombosis more often than arterial, besides the often described pharyngo-laryngeal infiltration. As the hemorrhages were invariably unilateral, the author concludes that the lesion involves the sympathetic centers.

But these fatal endings are but little more serious than some of the results of the invasion of this disease into the region of the cerebrum, middle ear, meningeal and brain inflammation and softening, and the issue of insanity.

I have known of several cases of insanity, profound melancholia, abscess of the brain, general neuritis, facial and sciatic neuralgia and fatal paralysis (one hemiplegic), but most of the vagus in this disease and its more chronic sequelæ are largely neural. The heart failure mentioned by Wilks, and seen perhaps by most of us to end life in influenza, is also due to involvement of the vagus center in the medulla, as in so-called grippe pneumonia, which accounts for the rapid fatality of lung implication in grippe, and this heart failure also causes emboli and their consequences. This vagus center involvement accounts for "the great and alarming prostration and cardiac weakness out of all proportion to the intensity of the fever" noted by the authorities. And those other "striking features" likewise referred to; "delirium," the great nervous manifestations, headache, pain in the back and limbs and unbearable aching and soreness like the dengue fever misery, point also to the nervous system. This, with the meningitis with which the pneumonia is associated, the neuritis and the mental disorders, disinclination to mental effort, melancholia and insanity which follow, as well as the numerous paralyses resulting, some of which, as already noted, terminate life, point plainly to the part the nervous system plays in revealing the presence of this peculiar and rapidly traveling poison of the air, which could spread from St. Petersburg to St. Louis in the short space of a few months.[1]

The profound depression and the feeble intermittent pulse reveal to the neurologist the pathic power of this poison in its attack upon the vital nervous centers, and the bronchitis and the pneumonia, the swelled pharyngo-laryngeal mucous membranes, the middle ear and Eustachian catarrh, coryza, intestinal catarrh and the nephritis, even, are no antagonizing exceptions, nor does the occasional finding of pneumococci invalidate this neuropathic view. They are seldom found in the grippe and more often elsewhere.

The grippe pneumonia, which is one of its most characteristic and fatal symptoms, is such as might come from section of the vagi, and a study of the origin and many distributions and functions of these nerves, pulmonary, cardiac, etc., gives us lucid explanation of the phenomena of the disease not otherwise so readily understood.[2]

[1] It is a mistake, therefore, and in the light of lately recorded experience and in that of my own limited observation, to say that "in the delicate and aged alone do we see fatal results," and it is a further mistake to attribute such results, when they do occur, "only to the intensity of the fever," as one of our most brilliant and gifted authors (Wm. Osler, "Practice of Medicine," 1892) has done. His sagacious clinical acumen compels him, however, to add "profound depression."

[2] The vagus largely governs the lungs, the heart and the circulation in this disease, and toxic irritation and depression of the medulla and pons explain most of the symptoms of la grippe. Section of both vagi above the origin of the superior laryngeal nerves is followed by loss of power in the muscles of the larynx, as well as of sensibility in larynx, trachea, bronchi and lungs. The reflex act of coughing is abolished, the glottis does not close, food and foreign bodies, saliva and irrespirable gases get into the respiratory passages and cause inflammation. This was shown as far back as 1740 by Valsalva and Morgagni; also by Langallois in 1812. This has been confirmed so often since that no one now disputes it. The vessels of the lungs become surcharged with blood, owing to the labored and difficult respiration and the long distension of the lungs between inspiration and expiration; serous exudation and pulmonary edema follow, blood exudes and pus forms in the air vesicles and a probable paralysis of the pulmonary vasomotor nervous system takes place to add to the pulmonary engorgement through the capillary system of the lungs. The pneumonia which takes place immediately after section of the vagi was found by Michaelson, according to Landois and Sterling, to be in the lower and middle lobes; the pneumonia following section of the recurrent nerves is shown more slowly in catarrhal inflammation of the upper lobes especially. Rabbits die with symptoms of pneumonia from section of the vagus. They may live for several days, if the recurrents only are cut. Dogs live longer. If the ninth, tenth and twelfth nerves are torn out from one side in a rabbit, death also takes place from pneumonia, according to Grünhagen.

In birds the upper larynx remains closed firmly and death does not take place for eight or ten days, and then with symptoms of inanition and fatty degeneration of the heart. The heart shows cloudy swelling and wax-like degeneration. Frogs die of asphyxia under the same circumstances. Some fibers of the vagus seem to exert a trophic influence over the lungs and heart.

Unilateral section of the vagus in rabbits is followed within forty-eight hours by the appearance of yellowish-white spots in the myocard-

It would be interesting, but too tedious at this time, to further follow this wandering and widely connected nerve, and note its relation and that of its near neighbor nerves, which originate in the fourth ventricle.

All that we have thus far said has just warrant in the recorded and accepted facts of neural physiology, and the careful clinician will not fail to note their significance, and much more by study of the physiology of the other nerves whose nuclei originate in the fourth ventricle, and this nerve center when touched with its peculiar toxine, in its bearing on the symptomatology of la grippe.[3]

Influenza greatly weakens the *vis medicatrix* of the nervous centers, permits latent tendencies and slumbering diseases to spring into active force and leaves the patient, after the active febrile stage has passed and after what is erroneously regarded as the stage of convalescence, in a state of profound neurasthenia or toxic neuratrophia, from which spring many ills. It will develop into mischievous activity a latent rheumatic gout, neuralgia, malaria or syphilis. We may expect to combat every morbid tendency the patient is prone to, before we have entirely cured him of this malady. These latent morbid aptitudes so brought into renewed activity seriously complicate la grippe and embarrass prognosis. These should be appropriately combated, to leave nature as unembarrassed as may be possible, to contend with the devastating foe. And because of the gravity of the nerve prostration and of the nervous sequelæ, the patient should be put to bed and kept there till the fever storm is over, and in the house much longer in order to conserve the fighting energy of the assaulted nerve centers.

This injunction should be as imperative in many cases of grippe as it should be in cholera, for influenza is a far graver malady in its immediate and especially remote effects on the nervous system, than it at first sight appears.

ium, especially near the inter-ventricular septum; on the papillary muscles and along the furrows of the coronary arteries. The muscular fibers exhibit retrogressive changes whereby their striæ disappear; they become swollen and filled with albuminous granules. After eight or ten days the interstitial tissue of these foci becomes infiltrated with small round, granular cells, especially near the blood vessels. At a later stage the interstitial connective tissue increases in amount and the muscle atrophies. No effect is produced by section of the depressor or sympathetic fibers, and Fantino thus concludes that some of the fibers of the vagus exert a trophic influence on the myocardium. The same fact is not so nearly demonstrable in regard to the lungs, but it is equally inferable.

The pulmonary branches of the vagus supply motor and sensory (cough exciting) branches to the whole bronchial system of the lungs (the pulmonary vessels being supplied with vasomotor nerves) from the sympathetic system.

They send afferent fibers to diminish, under stimulation, the activity of vasomotor centers, and thus cause a fall of the blood pressure during forced expiration, and similar fibers to act on the inhibitory centers of the heart, and thus accelerate the heart's contractions. Simultaneous stimulation of these two sets of fibers alters the pulmonary rhythm.

The vagi also contain afferent fibers which go from the pulmonary parenchyma to the medulla, which are continually in action, stimulating the respiratory center. Consequently, section of the vagi deepens the respirations and diminishes their frequency. Stimulation of the central end of the vagus also accelerates the respirations. Labored and difficult respiration may occur either when these fibers, which excite the respiratory center reflexly, are cut off, or acting centripetally to afferent impulses proceeding upward in the vagus. Conditions determining pneumonia may therefore exist in the nervous mechanism of the lungs and in its points of origin in the cord and superimposed medulla oblongata. If the trunk of one vagus or its center is paralyzed respirations are labored, deep and slow, such as follow section of both. Stimulation of the cardiac branches of the vagus may cause temporary suspension of the cardiac contractions, a feeling of great depression and of impending dissolution, such as we see sometimes in grippe, and as we see in dyspeptic asthma and the abdominal frog tapping experiment of Goltz.

[3] The therapeutic lesson of the neuropathic implications of influenza is rest and reconstruction (pending the search after its causative bacteria and their proper bactericide), rest and reconstruction, that phagocytosis may be promoted in the blood, chloral as the best antiseptic, hypnotic and calmative, for even the delirious stage. In the latter, ammonium bromidum added. For the pain, the coal-tar derivative analgesics, and sweat-producing opiate combinations, the elimination of all disturbers and depressors of nerve centers entering through the blood, like the rheumatic and malarial or venereal poison.

DYSPEPSIA AS A BRAIN DISEASE.

What is true of the neural relations of grippe is largely true of those of dyspepsia, a disease which, as Amariah Brigham, an American physician, was the first to show, about 1840, usually has its origin in the brain, as I have elsewhere attempted more elaborately than I shall do at this time, to establish.

I shall only ask you hear to consider it as a possible brain affection from what we know of its causes, those in whom it usually exists and the conditions of mind, occupation and environment of those in whom we find it most often manifest.

Dyspepsia belongs to the brain working, brain worrying and nerve tone exhausting class, to those who bother their brains and eat little or not over much, rather than to those who gormandize; to those who burn the midnight oil in study, do not sleep from fret and worry and from carking care, rather than to the *bon vivant* high liver, and he who tarries long at the wine. It belongs to the men of affairs and women of care, to the infelicitous and the disappointed in hope and ambition, those whose cerebro-spinal systems are inordinately strained and inadequately repaired in life's battle, so that their lower corporeal functions suffer from defective innervation of the viscera concerned in the maintenance of organic life, and whose cerebro-spinal systems consequently reciprocally suffer from defective appropriating power and inadequate nutrition, but starvation alone seldom develops dyspepsia.

It is through the neural connections of the brain and stomach that the acknowledged apepsia nervosa of neurology is a clinical fact. It is thus also that the relationship of nausea to migraine as the concomitant of the latter, but so long considered the cause, is explained, and conversely, that we understand *vertigo e stomacho laeso*, as first described and explained by that great master in medicine, Trousseau.

The brain influences the stomach and the stomach influences the brain, but the power of the former over the latter is far greater than the latter over the former in chronic conditions.[4]

To concede this influence of the nervous system over the digestive processes, we need not ignore any fact of chemico-biologic research, nor shut out any of the light thrown on the subject by the distinguished American investigator, Beaumont, and those who have followed him in elucidating the functions of the stomach. On the contrary, Beaumont's investigations proved the power of mental state over the digestive processes of Alexis St. Martin.

The liver, the kidneys, the bladder and the bowels are similarly influenced by emotion, and the lymphatic system is likewise under nervous control like the arterioles, by the vasomotors.

A center in the medulla also influences through the chorda tympani nerve and probably the sympa-

[4] Great brain and nerve strain, as in insanity, brittles the bones; grief and fright blanch the hair and face; fear paralyzes the heart, depresses temperature, causes excessive and clammy perspiration; anxiety arrests secretions and shrivels the skin; remorse wastes away the body; anger flushes the face, and so fills the brain with blood that its vessels burst and the victim falls with apoplexy; shame flushes the cheek, slows the heart and respirations; sorrow shows itself in tears; love and good fortune brighten the countenance and quicken the step and pulse, and lift up the form, while adversity and remorse sadden the face, slow the pulse, bend the form and depress the bodily movements. These things and many needless to mention, show us the potency of mental influence, through its proper neural channels, on the movements of the organism. We can not deny them in regard to the stomach. On the contrary, as we see the systole of the heart arrested by emotion, so we see digestion stayed by disagreeable and depressing thought. Mental force, through psycho-neural media, pervades the body and the stomach is not exempt from its invigorating or depressing influence over its physiologic functions.

thetic, the salivary secretion. A center there also influences the action of the kidneys. The chorda tympani contains secretory and vaso-dilator fibers, the sympathetic, vaso-secretory and vaso-dilator. Salivary secretion is induced reflexly by mastication and the irritation of the presence of food in the mouth and stomach and by the vivid remembrance of certain foods whose eating has made an agreeable impression, and by emotion.

We swallow, we digest, we sob and vomit by means of vagus fibers, and its fibers go to the celiac plexus, the spleen, the liver, the kidneys and the small intestine. Esophagismus, gastrodydia, or cardialgia, tachycardia, palpitation and angina pectoris and spleen, intestinal liver and kidneys, are influenced by this wonderful nerve, as well as asthma and exophthalmic goitre and many affections of larynx and lower air passages; notwithstanding the complete pathology of this wonderful nerve and of many of the interesting diseases connected with it may be said to be yet somewhat obscure.

The vagus and the vasomotors influence or govern circulation, respiration and digestion.[5]

The dominion of the nervous system over the spleen is also evident. This fact is one of the concessions of the physiology of our day. Stimulation of the medulla leads to contraction of this organ. Not only its arteries but the organ as a whole is maintained in a state of tonic contraction to a certain extent through the agency of the nervous system.[6]

HYSTERIA.

No better or more familiar illustration of the possible potential relation of the nervous system to disease need be mentioned before a body of practical clinicians that that of hysteria and its neural peculiarities and associated functional disturbance of organs (that mimic of all diseases with its protean features in so many instances), its atrophies, paralyses, contractures, alternating anesthesias, hyperesthesias, paresthesias and aphasias, aphonias, dysphagias, stigmata, emeses, suppressions, excesses and and perversions of excretions, nutritional, sensory, motor, psychical, visual, tactile, auditory and emotional derangements.

Hysteria illustrates in an especially forcible manner from the standpoint of clinical observation how suddenly and how extensively nearly all the organs of the body may be profoundly disordered in function by morbid impression through the nervous system and these pathologic impressions often repeated and prolonged do sometimes develop actual and enduring organic diseases.

There is a suggestive practical lesson in this "neuromimesis" or mimic neurosis, as to the relation of the nervous system to diseases in general. As the study of this disease led Goodell to discern and portray the nerve counterfeits of uterine disease and to say: "The crying error of the day is the mistaking of nerve disease for womb disease;" so I say of disease in general, the crying error of the day is the ignoring of neuropathic implications, concomitants and sequences of organic, visceral and general diseases, and the mistaking of nervous for other diseases.

As any organ of the body may fail functionally and be perverted in the performance of its functions, so may we have organic derangements from frequent repetitions of functional disorder, if the trophic and vasomotor nerve centers share in the functional disturbance.

THE TROPHO-NEUROSES.

Here we enter the clinical domain of the trophoand vasomotor neuroses whose name is legion, from symmetrical gangrene and local asphyxias of Raynaud's disease, to the ecchymoses, etc., pigment hypertrophies, cornifications, nævi, pigment atrophies, (lepra, vitiligo, etc.), arthritic atrophies, climacteric and menstrual cutaneous swellings, etc., urticaria, angioneurotic edema, the night palsy of Ormerod, secretion anomalies like seborrhea, hyperidrosis, amidrosis and the occasional vasomotor disturbances of the fevers, as in typhoid and of dropsy and anasarca.[6]

About all the changes which come under our eye in the skin and muscles, are due to impressions made through the trophic and vasomotor nerves, influencing the circulation and growth, among which we may instance scleroderma, myxœdema or cachexia pachydermique and the myopathies, pseudo-hypertrophy and progressive muscular atrophy.

PHYSIOLOGIC RHYTHM, ETC.

The nervous system regulates the law of rhythm in the animal economy in both its physiologic movements and pathologic perversions of movement, and this fact affords us, from a neurologic standpoint, important hints for the management of our patients and therapeutic suggestions, hints often overlooked in practice.[7]

The nervous system is almost an omnipresent system of the human organism. The more we learn of it the more do we wonder at man's wondrous mechanism. The more we see of its relations to organism the more we discern of its omnipotence and of its subserviency in the workings of the human economy. It excites, it controls, it reveals and is revealed and influenced by disease. The sensory nerve trunks and branches can be traced as clearly by neuralgia (sciatic, intercostal, trifacial, etc.), and by neuritis, as by the anatomist's scalpel; and the various paralyses reveal the channels of motor conduction and centers of origin of motor impulse, thus affording us means of diagnosis beyond the reach of our unaided vision. Thus cerebral localization has been confirmed

[5] This is just such an observation as should come more frequently from general practitioners. The vasomotor nervous system is omnipresent in its organism. It follows the vascular system to the innermost recesses of the body, and the number of its morbific functional possibilities is beyond computation. Some of the vasomotor ataxias, quite familiar to practicing neurologists who have opportunity for general medical observation, have been noticed and given a clinical grouping under the tenor "Vaso-Motor Ataxia," by S. Solis-Cohen. Vide "Vaso-Motor Ataxia," by S. Solis-Cohen, American Journal of the Medical Sciences.

[6] Physiologists now maintain that its metabolism is controlled directly by the nervous system and they are far nearer than formerly to an understanding of its function, just as the same system is concerned in the bilious and glycogenic functions of the liver as we see demonstrated in the fourth ventricle puncture proof of artificial glycosuria, and exsection of the pancreas has resulted in glycosuria influencing the nervous system as profoundly as thyroidectomy. The spleen may be diminished in size either generally by the stimulation of one of the afferent nerves, and, locally, by direct application of the electrodes to the surface of the organ. And Paul Gibier has produced glycosuria by psychical excitation of animals. (Vide, Trans, N. Y., Acad. Med., 1893.)

[6] The term, trophic disorder of muscles and organs, is at present much more restricted than it manifestly will be when physiology shall have more accurately numbered and located the trophic centers, whose influence over the tone and quality of the tissues and organs is now no longer a question. Certain nerve centers and nerve fibers do undoubtedly influence the growth and repair and atrophy or decay of the tissues, and Romberg, in this discovery, has rendered medical science in its practical aspects a priceless service.

[7] It suggests, for instance, that we should interrogate our patients as to the normal rhythmic time for eating, defecating and sleeping, in the administration of food, of laxatives and hypnotics, and suggests also the best part of the day for necessary disturbance of our patient with medical ministrations, ablutions, driving, exercising, etc. All habit, physiologic or pathologic, is bound up in the law of rhythm and a nervous system is essential to this phenomena.

as a fact of neuro-physiology, as well as by electro-vivisection.

In the interrogation of morbid symptomatology; convulsive disturbances, tremors, subsultus, paralysis, circulatory changes, the periodicity of intermittency and remittency, temperature changes, delirium and other phenomena of the fevers, the collapse, spasm and ricewater discharges of cholera, and even of the remote causation of cancer and of many of the dermatoses, we can not help but see how intimately associated the nervous system is with the movements of the organism under the influence of disease. These phenomena may, truly, in a manner be called nervous. Certain it is that the nervous system in disease plays no insignificant part, often the most important; and to timely tranquillize and reconstruct it against the assault of the causes of disease in the organism is no small part, if not the chief part of the physician's work, for, though the blood carry germs of deadly disease to vital nerve centers, to conserve these centers by suitable therapeutic reinforcement against their destructive work, means victory over impending dissolution.

The *vis medicatrix naturæ* resides in these nerve centers and in their power to maintain, under stress of invading disease, the normal metabolism in the various organs, and as I believe, though this is not yet susceptible of scientific proof, of the furnishing and multiplying of the phagocytic hosts of conservative destruction in the healthy blood. If the blood is the life, the nervous system is likewise the life of the organism. In this dual government of the economy in health and disease, both

"Are parts of one great whole,
Whose life the blood is,
And the nerves the soul,"

if this liberty of paraphrase before employed by me may be here again permitted. If we realize this fact in our clinical conclusions and efforts at treatment, we make better practitioners at the bedside than if we seek to explain the phenomena of disease by a single factor like modern humoralism or solidism, or visceralism, or the germ theory, absolute and unconditional. It requires something more than a morbific germ to develop disease. The other factor is an assaulted, yielding and morbidly responding organism, and back of that are the disturbed or resisting mechanisms of neural control, central or peripheral, which resist, cast out or succumb to disease.[8]

THE IMPORTANCE OF EARLY RECOGNIZING NEURASTHENIA.

A great advance was made in clinical medicine when neurasthenia, or as I have called it, general functional neuratrophia, was first recognized and differentiated from secondary exhaustion of the general nervous system, from the auto-toxicity of retained excretions and profound physiologic brain and nerve and muscle tire. This condition described by Van Deusen, an American physician, in 1877, followed by Beard, another American physician, in 1878, is one in which the nervous system appears to suffer in its nutrition, normal stability and power, involving the viscera and nervous system only in a functional and secondary manner.

Neurasthenia or general functional neuratrophia, shows itself chiefly in the brain and is psychically characterized by timidity of conduct, nervous irritability and morbid fears, bordering on, but not becoming delusions, and physically by functional atonicity of the viscera, especially of stomach, heart, bowels, and motor and psychical areas of the brain. It is the cause and source of apepsia nervosa and of cerebro-spinal irritation, and differs from hysteria, with which it is sometimes mistakenly confounded, in being continuous and not paroxysmal, and in being far more common in men than in women.

It is a conservative neurosis like migraine, saving its victims from profounder breakdown, because the individual will endure but so much and can not stand a longer strain without a period of rest and repair, whereas if he could endure more, the issue would be apoplexy, paralysis or other organic trouble. Before its recognition, it was thought necessary that some organ or system (the sanguineous, hepatic, etc.) should be profoundly affected to justify a conclusion of disease, and great injustice was done its victims under designation of hypochondriasis, hysteria, simple nervousness, etc., not requiring medication. Neurasthenia is a nineteenth century evolution in clinical medicine.[9]

THE RELATIONS OF NEURAL OVER-STRAIN TO THE DEVELOPMENT OF CANCER AND CONSUMPTION.

The developmental relations of cancer to neural over-strain, worry and decadence of the brain and allied nervous system have lately received renewed consideration, since the writer first called attention to this singular fact in the cases of General Grant, Napoleon Bonaparte, Thomas H. Benton and others. I believe, as I many years ago stated, that a breakdown in the central nervous system by which its trophic and resisting power are greatly lessened, makes possible and precedes all cases of cancer. But for this, cancer germs, if such exist, would be innocuous. The same fact is in a manner true in regard to the receptivity of phthisis and other diseases of bacillic or bacteric origin. Seeds, to germinate, must have receptive soil, and in relation to cancer, as Sims Woodshead, who believes in its parasitic causation, declares, the germs require a lowered condition of the vitality of the epithelial elements in which they make their habitat, as conditions of their growth and development. Finding a soil, they multiply, secrete their toxines, and by their irritant action on the parts which they invade, resemble certain well-known pathogenic microbes, especially Koch's bacillus, in the degenerative processes and products which they entail.[10]

[8] Certain phenomena of reflex, in clinical and surgical therapy too, are better appreciated by him who thoroughly considers the nervous system in his practice. Such an one usually recognizes two factors in the peripheral causation and the morbidly responding center, which betrays in an extraordinary manner the existence of the irritation, peripheral or central.

Benjamin Rush notes the fact that Leo X. died of joy upon hearing that a great calamity had befallen the French nation; the door-keeper of Congress died from the same cause, inducing cerebral apoplexy, upon learning of the capture of Lord Cornwallis and his army during the Revolutionary war; and the great Harvey, who discovered the circulation, died in a fit of anger. It is because impressions upon the nervous system have the power to kill that they may also engender and cure disease. This malevolent potency makes psychotherapy a benevolent possibility in practice, and no wise physician ignores it.

[9] Dr. Geo. M. Beard forced the general recognition of this functional morbid state of the nervous system by the profession, though some physicians of eminence yet dispute it.

[10] But the question of the parasitic origin of this disease was left *sub judice* at the last International Congress at Rome, at the close of the most interesting and learned discussion ever held upon the subject, Pio-Foa, the referee's, advocacy of the parasiticism of cancer being ably contested by Cuzin, Duply and Cornil. Pio-Foa, supported by Morpurgo, of Turin, maintaining that these parasites are encapsuled protoplasmic bodies within or without the nucleus of the cancer cell, similar to the descriptions of Clarke, Soudakeritch, Walker and others, resembling the spores of protozoa or malaria hematozoa, and are common to all cancers of glandular degeneration.

The peripheral neoplasma contain small parasites, the deeper, large sporocysts. Mitosis or karyokinesis is absent or scarcely perceptible where the parasites are absent or few. Dr. Shattuck (editor of the *Boston*

NEURODERMATOLOGIC ADVANCE.

Mr. Malcolm Morris, in his presidential address before the Harveian Society of London, reviewing the progress recently made in dermatology, after noting the fact that we now recognize the precise microbic agents which produce lupus, scrofuloderma, impetigo, leprosy and glanders, and speaking of the "new light" which experimental pathology has thrown on the nature of disease processes and the factors concerned in their production in the skin as in other organs, says: "Almost the only distinct evidence of progress apart from local treatment to which I can point, is the fuller recognition which has been arrived at of the influence of the nervous system in the production of skin affections. . . . The knowledge of the intimate pathologic connection between the nervous system and the skin gives the key to the successful treatment of many cases which defy all local measures." —(*British Medical Journal*, Jan 27, 1894.)

The same light has recently dawned on gynecology and every department of medical practice. We are approaching an era when the whole patient is to be treated, no more only a part or organ solely, and neurology will have a paramount place in general clinical medicine, notwithstanding the recognized and merited advances of bacteriology in pathogenesis.

CERTAIN HEART AFFECTIONS PROCEED FROM THE BRAIN.

What is true of the influence of the nervous system over the stomach in dyspepsia, and the lungs in the pneumonia of influenza, is also true of its influence in the production of certain diseases of the heart. They come from states of the brain, and here again has medicine in its work for the world's welfare, through physiologic research, faced the prejudices of a frowning world against the so-called cruelties of vivisection.

Though the heart of a frog removed from the body will pulsate for hours, if fed with blood or blood serum, and will continue to beat even when divided into sections except at its apex, and even this will beat if tied to the end of a tube and fed under pressure, its conditions of nutrition in vertebrates are determined directly by the nervous supply of the organs and indirectly by the blood (Mills), and the influence of the cardiac nerves becomes more pronounced as we ascend the animal scale, and in the heart of a frog there are ganglion cells, in the sinus venosus, in the auricles and ventricles (ganglia of Ludwig, Remak and Bidder). They are also in the warm-blooded animals, dogs, sheep, etc.[11]

When the heart is severed from the central nervous system by section of the vagi nerves, or destruction of the vagus center takes place by traumatism or disease, profound changes in the heart's structure ensue; this points to central trophic influence through the vagi and to the often central nervous origin of heart disease. The regularity of the heart's rhythm from and strengthening of its beat through vagus stimulation and central stimulation, as by certain volatile and internal stimulants, is suggestive.

We are now able to understand how many disorders of the heart are coincident in their inception with occasions of fright and worry and anguish, sudden accesses of extreme ire, disappointment, prolonged enforced vigilance and other brain strains. These, as Mills tersely says, point to influences of a central origin as greatly affecting the life processes of this organ.

Czermack, pressing a bony tumor in his neck against the vagus nerve, and Hermann and Col. Townsend repeatedly suspending the heart's beats at will (the latter once too often, for he died from his final experiment), also prove the central and vagus nerve influence over the heart. Nervous influences certainly play no small part in the causation and modification of the heart, and with Mills we would "extend such a view to all parts of the body," especially in man. The source of the heart's diseases is often in the brain and other parts of the nervous system, and so is the source of many other diseases for which only the organ displaying the functional disorder and the blood which nourishes it are treated, whereas we should more often treat the whole man, nervous system and all, but the nervous system especially, if we would be most successful.

Now, therefore, in a newer, broader, truer sense than ever before, do we recognize the monism of man. Not in the sense of the philosophical schools, but in a psycho-neuro-physical sense in our survey of his physiopathology. In estimating the causes, concomitants and sequences of his diseases, we consider the whole man in his psycho-neuro-physical relations. As the "medulla oblongata is functionally the ruler of vegetative life," so it governs and influences many diseases, as the psychical and psychic centers of the cortex influence it and the centers below it, as the recto genito-urinary centers of the cord, etc.

As we recognize psychic influence over our physiologic life, over physical and mental habits, so must we come to acknowledge it more generally in our dealings with disease. The physiologic law that habit in the psychical life develops a tendency to recurrence, is also exemplified in the disposition of certain diseases to recur and the inter-relation between muscular and mental tonus suggest the importance of maintaining the psychical tonus in the treatment of all diseases, and the successful therapeutis of hypnotism proves it in many.

As it is difficult to believe in force existing not in

Medical and Surgical Journal, the first journal to report these facts from the Eleventh International Congress) in commenting on this latter fact, says: "This shows that they (the parasites) live, but in tissues whose vitality is low."

In this memorable discussion the following facts were opposed by Prof. Cornil and others to the statements of Pio-Foa and his adherents: Cancer exists in many modified cell-formations and has many nuclei resembling parasites. He asserts that Pio-Foa's parasites are metamorphosed nuclei resulting from morbid karyokinesis; that "there are found also in cancer, degenerated cells whose protoplasm stains red, and which contain in place of nuclei granules, filaments or masses of nuclein, representing the different forms of indirect division, without the occurrence of achromatic filaments or of clear space around the divided nuclein. These are cell degenerations arrested in one of the phases of indirect division of the nuclei. Cornil remarked that even migrating leucocytes interposed between cancer cells had been mistaken for parasites, especially when they had retrograded and had broken up into fragments of nuclein."—(*Boston Medical and Surgical Journal.*)

And a yet stronger criticism of the parasitic origin of cancer is the failure of inoculation experiments to generally produce cancerous reaction, as Dr. Shattuck observes.

But even successful inoculations only bring us back to that other well-attested fact, the necessity of an adaptable soil and the absence of organic resistance, which we have placed in the neural regulation and normal inhibition of vital cerebro-spinal centers.

[11] So that while conceding spontaneous muscle cell pressure and protoplasmic contractility, we know that in certain cases cardiac contractility is modified by medulla and vagus stimulation, to the degree of arrest, slowing, enfeeblement or intermittency.

When the vagus influence is altogether inhibited, the heart's action is increased in force and frequency, while section of both vagi leads to histologic alteration and fatty degeneration. The sea turtle's heart has been suspended through vagus stimulation for six hours, causing its death.

The heart dilates with or without blood during vagus arrests from vagus section, drug impression or electric excitation.

The heart may be reflexly inhibited by gastric and abdominal reflex irritation, flatulent dyspepsia, the Klopfersucht of Goltz, etc.

If one or both vagi are intact, stimulation of the medulla arrests the heart.

The conclusion of a cardio-inhibitory and accelerator center in the medulla, which influences the heart through the vagus, is the obvious teaching of physiology.

contact with matter and without matter existing on which force can display itself, so it is difficult to conceive of the existence of disease in the human body without an influencing or influenced, *i. e.*, disturbed, nervous force.

Henry Maudsley has likened the physiologic life of the cerebro-spinal centers to the mutual inter-related and subordinated movements of the companies, battalions and brigades of an army under command of the higher ganglion cells of the headquarters in the brain, and mental disease to mutiny and rebellion. Huxley has likened the body to "a machine of the nature of an army, not that of a watch or of a hydraulic apparatus. Of this army each cell is a soldier, an organ, a brigade, the central nervous system headquarters and field telegraph, the alimentary and circulatory system the commissariat. Losses are made good by recruits born in the camp, and the life of the individual is a campaign conducted successfully for a number of years, but with certain defeat in the end." Each tissue under the trophic influence of neural communication with its appropriate nervous headquarters conducts its own repairs, *i. e.*, replenishes its own forces. When proper physiologic conditions, including neural connections, are maintained, each tissue in the animal economy correlates its own proper life force. Destroy a trophic center and the part it innervates atrophies; sever a motor nerve and the muscle it supplies is paralyzed; cut a sentient nerve and no power of our art will restore sensibility over that channel that does not reunite or reproduce the nerve. Our aim in the practice of medicine, then, should be to save the nervous system, to conserve neural integrity and force in relation to all parts of the organism suffering under the depressing influences and destroying tendencies of disease.

This should be our aim always, whether we are enabled to make a satisfactory local diagnosis or not, for if we succeed in saving the nervous system absolutely, we save the man, for it is only after disease makes its final resistless inroads here that our patient dies.

HEMOPHILIA AND THE VASOMOTOR SYSTEM.

The neuropathic source of hemophilia in the vasomotor system is more probable than any asserted dyscrasia of the blood, and cholera is so largely a condition of nervous prostration in its symptomatic expression, that if we treat it on this theory, keeping the patient absolutely recumbent and give him copious hot water drinks and enemata, we are more apt to save our patients by this than by any other one plan. Of course, the comma bacilli should be searched out at the same time, with our hot drinks and colon clysters, and destroyed so far as may be practicable, but it is the damage done to the nerve centers that we wish to guard against in this disease till the collapse stage passes, the bacilli are destroyed and reaction comes on. Cold colon douches are likewise of some benefit. I think the water does the work and not the soap in Elmer Lee's plan of treatment, which I uphold on the physiologic principle that the abdominal ganglionic centers and by eccentric impression the spinal nervous system is favorably impressed by his method, while such bacilli as the water can reach are washed out of the intestinal tract, but these are not the most of them.

To divest ourselves of undue skepticism in regard to the influence of the nervous system in the development of what we are accustomed to call disease, but which is often the sensible pathologic product of a morbid process, we should recur often to the physiologic possibilities of the mechanisms of neural control over the arteriole system and of sensation and motion.[12]

BODY TEMPERATURE AND FEVER DEPENDENT ON THE CONDITIONS OF THE NERVOUS SYSTEM.

That remarkable phenomenon, the uniformity of the temperature of the human body at all latitudes and in all seasons, is due to the regulating adjustment of the circulation, perspiration, etc., to environment through the nervous system, and when temperature is disturbed it is due to irritation, mechanical, chemical or toxic, of the nervous system as in traumatic violence, microbic, septic or drug disturbances.

It must by this time be apparent from what we have already said that the intimate physiologic relations between the nervous and the vascular and glandular systems justify these pathologic inferences and confirm the clinical facts.

"The nervous system has so close an alliance with the functional activity of the secretory and excretory glands of the body that emotional disturbances, according to their character, act as depressants or excitants of the functional life of these organs. Some of the more common of these effects are every-day familiar facts, as when the flow of tears is excited by grief, or the secretion of saliva and gastric juice by the smell of food." And it is believed that, "in the same manner as the superficial glands are easily influenced, so, in all probability, are the blood-making or ductless glands[13] regulated and controlled by the organic nervous system.

THE NERVOUS SYSTEM AND THE LIVER.

The influence of the nervous system over the liver was believed in by the ancients who, mistaking coincidence for sequence, attributed melancholia to atrabilis. Murchison asserts a well-observed fact that the secretion of bile is interfered with by prolonged mental anxiety, worry and incessant mental exertion, and that sanguification and blood changes in which the liver takes part often result from mental causes.

I think we need no longer doubt this or indeed any possibility to neural influence when we see pernicious anemia follow degenerations of the spinal cord, and

[12] See Brown-Séquard, for instance, producing hemorrhage into the auricles of guinea pigs by section and irritation of the restiform bodies in the medulla and flushing the neck and face by section of the cervical sympathetic! In this we have the explanation of hematoma auris and cerebral hyperemic states.

It is through the nervous system that we may understand how the hair turns in melancholia and may thicken in chronic mania or dementia of the less distressed and more stupid and inactive forms, how its color may turn from dark to white and back again to dark, with the access and recoveries of recurrent insanity how it may gloss and dry, erect or flatten, be lost and regained under mental states, and how the teeth may decay, the bones and nails grow brittle and the skin harsh from the same cause and how from neuritis, the nails transform and the limbs waste as well as fail in sensibility and mobility, besides the eczematous, pigmentary and horny changes of the skin from nerve injuries.

[13] Dr. A. D. Rockwell, in a paper in the New York Medical Journal, Dec. 10, 1892, maintaining the nervous origin of jaundice, said: "He had had occasion to see and treat a considerable number of cases of jaundice dependent upon a great variety of causes, and he had been impressed with the frequent occurrence of cases due to deranged innervation, interfering with the normal metamorphosis of bile. Acute atrophy, in which the secreting cells were rapidly disintegrated and the functions of the organ arrested, appeared to him in many instances to have a purely nervous origin; and very often the first symptoms of the disease occurred immediately after a severe fright or an outburst of passion in a person previously healthy. An impression made upon the brain appeared to be reflected to the liver and to derange its nutrition. Even cancer of the liver appeared sometimes to result from the functional derangement induced in the first instance by mental trouble. So this condition appears to us."

progressive muscular atrophy and anemia follow cerebro-spinal concussions.

If the mind has such potency how careful should physicians be of their demeanor or speech before patients. How guarded as to prognosis. And the surgeon, how careful should he be as to the undue and inopportune display of his operative armamentaria. With these facts in view the propriety of large medical and surgical wards where the sufferings and death of one patient may be readily known to the others in the ward is questionable. Other obvious considerations needless to mention here are suggested in this connection.

These neural connections, direct and indirect, between centers of the brain and the circulation, the viscera and the secretions reveal the physiologic basis of all forms of psychotherapy, of faith cures, mind cures and modern miracles, of the principles of which those who perform them are usually ignorant; also, of hypnotism and its therapeutic results.[14]

LEUKEMIA AS A NEURATROPHIC BLOOD DISEASE.

Leukemia is another and most remarkable condition which may result from profound nervous exhaustion or shock or from malarial neuratrophia, and shows how the blood may change through nerve influence as cretinism and pachydermic cachexias show the relationship of thyroid and nervous degeneration and as thyroid extirpation also proves.

THE RATTLESNAKE POISON FIRST A DEADLY NERVOUS SHOCK.

If the remarkable blood cell changes of this disease may originate in morbid neural impression, it would seem unnecessary to go further for proofs. But the poison of the rattlesnake and other toxic substances may kill through immediately fatal shock without detectable lesion, though grave structual changes follow, especially in the destruction of the blood's fibrin and later putrefaction, in the case of crotalus poisoning, if the patient survive any considerable length of time.[15]

The nervous system is the supreme ruler in the organism. When disease enters it is weakened; when death takes place, it is dethroned. The germs of malaria, tubercle, cholera, typhoid, tetanus, etc., or the living virus of any fever, make no fatal inroads until they break down and destroy centers of neural control and resistance.

Whatever view we may take of bacilli, bacteria or cocci which our glass may reveal to us in the damaged organism, whether we regard them as carrion about a carcass, rats forsaking a sinking ship, thieving, destroying, or scavenger parasites, one thing is certain, viz., disease becomes manifest only after the mechanisms of neural sensation, emotion, ideation or control reveal it, for as I have elsewhere said, the nervous system is the central executive and universal sentinel system of the organism. It governs and legislates for the physiologic body, exercising, moving, restraining, regulating or inhibitory power over organic processes in health and in disease. It has its subordinate tributary and sustaining forces in the glandular, vascular, osseous and other systems. It commands, governs and regulates them and they influence it, as the citizens and subordinate officials of the State may influence, and even govern the chief executive or the king.

Raynaud's disease, with its local asphyxia and symmetrical gangrene of the extremities, though its cause may be uric acid, as Haig ("Uric Acid in Causation of Disease," 2nd edition, page 201) maintains, is manifest to us, as Raynaud believed, through spasmodic contraction of the capillaries, as the gangrene of ergotism is.

Haig contends that the uricacidemia of gout and rheumatism "contracts the arterioles and produces high arterial tension," and that glycosuria is alternative of, and contemporaneous with gout, Ord maintaining that the congestion of the liver is due to high arterial tension, while Pavy, according to Haig, credits diabetes "to a vasomotor paralysis of the chylopoetic circulation, which allows arterial blood to be supplied to the liver in place of venous." (*British Medical Journal*, 1883, pages 863 to 866.)

Haig concedes that the hepatic congestion dependent on the state of the vasomotors develops the saccharine diabetes, thinks the uric acid causes that, but attempts no explanation except a dietary one, of the uric acid in the blood.

If I had the time to write a book on this occasion, I think I could show the nervous system to be primarily at fault in the uric acid diathesis and that migraine, epilepsy, morbus brightii, diabetes and melancholia, which attend upon the chronically gouty and rheumatic and alternate with these states, are varying neuropathic states with uricacidemia, albuminuria and sacchemia as their sequences. But this would be profitless. The practical clinical and therapeutic lesson is to correct both the abnormal blood and the faulty nervous states.

The contracted arterioles which raise the tension in the arterial system and diminish the circulation through the organs and tissues of the body need remedying, as well as the uricacidemia, the "heteroalbuminemia, albuminuria, etc.," and the deficient circulation and the deficient metabolism of organs and the disordered assimilation, as well as diet; for some persons may eat any kind of food and have neither gout nor rheumatism, nor diabetes, nor Bright's disease, so long as the governing nervous system maintains the physiologic equilibrium and sustains and secures it against pathogenic forces from without and within.

A change in the weather or a certain exposure sends one man to bed with rheumatism, another with pneumonia and a third comes down with remittent or intermittent fever or phthisis. We say uric acid in the first case, pneumococci in the second, malaria in the third and tubercle bacilli in the fourth.

But why do these morbific forces now more than any other time come so opportunely and seize upon their prey?

We say it is because the vitality is lowered and the organic resistance is lessened. What is that vitality, that organic resistance which permits one man to

[14] The wise physician combines chemistry and a scientific *materia medica* with honest and hopeful meutal impression, establishing in the patient where he can and is justifiable by the clinical facts without deception, a buoyaut psychotherapensis in the patient himself. The lengthened visage, the hopeless foreboding, the dismal and solemn aspect and funereal demeanor on the part of the physician are not only out of place and unjust to the patient, but are bad therapentics.

[15] How speedily the symptoms of this poison follow, if death be not instantaneous; the cry of terror, the giddiness, the syncope, the vomiting, the prostration, the rapid, irregular, imperceptible pulse, the sunken eye, the swollen face and body, the jaundiced, cold, clammy, vesicled skin, the delirium, sleeplessness, torpor, coma, involuntary intestinal and vesical discharges, tremors, convulsion and death? First the nervous shock and then the blood disorganization and organic dissolution.

Drysdale examined the cases immediately fatal with the best of lenses and found no lesion. The nervous system was directly stricken, and life, of which the cerebro-spinal and ganglionic systems in man are the representatives, ceased. The physiologic barrier wall in the nervous system is broken and disease invades.

brave an atmospheric or climatic environment with impunity from disease, in which another falls a certain victim? What is it that permits one man to eat everything without being made dyspeptic, while another can swallow scarcely anything without suffering the gastric distress of indigestion? We say one has a weak stomach, but if we take into account the whole man, we find it is the brain of the dyspeptic rather than his organs of digestion, that has been always punished by its owner's imprudent and reckless habits, though the stomach too may have been abused. We get a similar answer in regard to the remote causation of determining factors of disease of many other organs. We have invented, for evasive answer, certain elucidating terms, as idiosyncrasy, diathesis, morbid proclivity, inherent organic tendencies, etc., and we make many special explanations, like the little fibs the school-boy tells to extenuate a folly, each leading to some other and bigger fib, until he finally realizes that honesty is the best policy and then owns up.

My answer has already been intimated. I can not on this occasion weary you with further detail in elucidation.

I say only in conclusion, to forestall certain criticism, that, though the primal potency of the nervous system resides in the sarcode, much of its potentiality in the highest and most complex animal life, seems to have passed in process of evolution from protoplasm to nerve centers and the most there is of man is his nervous system. In this system resides, in highly evoluted form, spontaneous and reflex motion, sensation and the governing influences of assimilation and reproduction. What should we not expect of such an organism impressing and impressed by disease.

This brief survey of a broad subject brings us across the century, twenty years before the one now soon to close had begun, to the immortal dictum of Cullen, the truth of which the progress of medico-scientific research in clinical medicine now confirms: "*Quantam ego quidem video motus morbosi fere omnes a motibus in systemate nervorum ita pendent, ut morbi fere omnes quodammodo Nervosi dici queant.*"

And now in the sunlight of advancing science and of the approaching twentieth century, I proclaim that neuriatry and the practice of general medicine are practically one.

The practice of medicine is rapidly becoming one of neurologic methods, of neuriatry and psychiatry, and the best neurologist, all other attainments being equal, must of necessity make the best general practitioner. What Lord Chesterfield said of a Christian gentleman, I would paraphrase and say of the neurologist, He is the highest style of physician; and of medicine as a whole, with Hippocrates, It is of all arts the most noble.

Thus much, and yet not a moiety in regard to the relation of the nervous system to disease and practice! Thus much of neurologic progress relative to general medicine. Obviously we can not now enter into the marvelous advances and wondrous resources of modern medicine. In the pages of a thousand volumes and the works of a thousand modern hospitals her glorious record is partly made for the welfare of man, as the nineteenth century recedes into history. But there she stands in her grace and grandeur, the peer of all professions! Ever faithfully by the side of man from the cradle to the grave, in the hour of his saddest need, mindless of home or creed, she bends with pitying substantial aid over his suffering and prostrate form and lends strength to his weakness.

Handmaiden of sweet charity and exemplar of the golden rule, she unshackled the lunatic and brought him from his dark and dreary dungeon into light and liberty, while theology was yet calling him demon or devil-possessed, and she now extends her helping hand to the inebriate, while the world yet condemns him and largely withholds its sympathy. She has likewise extended her protecting charity to the epileptic, the hysteric, the victim of chorea or St. Vitus' dance and the so-called creatures of obsession.

She has influenced courts to modify the former harshness of their ruling towards certain classes, and caused them to recognize disease and degeneracy of brain in extenuation of crime, thus tempering justice with mercy towards the organically weak and maimed in brain and mind. Judicial theories of what should constitute insanity and allied conditions exempting from responsibility to law, have given way to clinical fact ascertained through psychologic expert testimony, and the "knowledge of right and wrong" test of mental aberration has, in consequence, ceased to be the sole criterion of responsibility in questions of insanity before the law.

THE TREATMENT OF INEBRIETY.

America was the first country, the great Rush was the first physician to recommend the "establishment of a hospital in every city and town in the United States for the exclusive reception of hard drinkers," and to regard the drink habit as a disease and advise the blending of medication with religious and moral suasion. And how many regular hospitals, assisted by our State laws, are saving the inebriate from that destruction from which neither his own will, nor moral suasion nor any other influence could rescue him. Yet no monument at the nation's capital bears testimony of the people's gratitude to this great physician and signer of the Declaration, and surgeon of the Revolutionary Army. I can not help this digression when I reflect upon this nation's long neglected debt of gratitude. I repeat the plea I made last year: Benjamin Rush's name is immortal, whether his memory is preserved in monumental bronze or not, but the Government owes his memory, his country and the world, this debt; and every consideration of delicacy, and of decency and of justice to its meritorious dead, and of patriotism, demands its honorable discharge. I have elsewhere discussed this subject *in extenso*. *Vide*, "Treatment of Inebriety," etc., in Bibliography.

This is the fruit of our friendship for the unfortunate lunatic, and in American courts the product of ripened seed planted in the field of forensic psychiatry by that eminent and immortal American medico-jurist, Dr. Isaac Ray, of Philadelphia, whose great work, the "Jurisprudence of Insanity," was the beginning of a memorable era in medico-legal progress, and gave American psychiatry a distinguished standing before the courts of the country and of the world. In this classical American work, the disease of brain and change of character criterion received their clearest elucidation after Andrew Combe, and since the decease of this great American alienist, that other and congenital form of mental disease, paranoia, has received clear elucidation and distinc-

tive differentiation through the contributions of Kiernan, Spitzka, McLain Hamilton, Mann, and other American writers following the treatises of Erb and others abroad.

The hospitals for the insane which made the names of Pinol, the Tukes, the Chiarugis and later alienists immortal, among them our own Kirkbride and Tyler, have been followed by homes and schools and hospitals for the feeble-minded, in connection with which Edouard Seguin, of America, has an undying place in the philanthropic heart of the world, along with that of Froebel and Howe, in Germany, from whom Seguin got the inspirational inceptive idea and patience of training and improving the mental evolution of these unfortunate defectives, and American surgery, thanks to Dr. Wm. Fuller, of Grand Rapids, Mich., who first suggested (in the face of the old world's sneers) a possible operative remedy for the relief of certain of these defectives, the feasibility and value of which has lately been acknowledged abroad and demonstrated at home. Linear craniotomy has proven its right to a trial. It will not relieve microcephalic or porencephalic idiocy, but in other forms of arrested brain development through premature contraction of the cranial vault, this procedure has made it possible for the brain to develop, the speechless to speak and the convulsive to cease their spasm, just as other forms of craniotomy have done for pressure, aphasia and epilepsia.[16] This devoutly-to-be-wished consummation will be hastened through general use for cerebro-pathic investigation and description of the marvelous piece of neurologic mechanism which I now show you as the ingenious handiwork of an American anatomist, not yet so widely known to fame as he deserves to be, Dr. J. P. Fuller, of Grand Rapids, Mich. In this unique contrivance the brain has been represented in thirty-seven transverse sections, hinged together in natural form and shape, with the superimposed superficial psychomotor centers. The downward paths of conduction to the cord, and the entire brain in its median and spherical and interior aspects are separately and relatively shown.[17]

The saving triumphs of brain surgery in other directions of prudent neurology are now simply marvelous, but more marvelous far than this wondrous work of salvage will be the saving of the brain and nervous system from the necessity of surgery, the mark at which general medicine and neurologic medicine are now aiming, and a goal much nearer reached now, than in the past.

Should men contest the claim of medicine to being the greatest of the world's benefactions, we reply: The germ theory of disease causation alone, with its applied antagonisms, hygiene, antisepsis, perfect cleanliness and resistive and tolerant inoculations, has done, is doing and is yet destined to do, more for the physical welfare and salvation of mankind, than all other causes of man's comfort, conceived in the mind and heart of man.

But for our applied teachings of hygiene, the world having its population in the last one hundred years nearly trebled, and civilized life having become so complex and degenerating in populous centers, the race would now be on the road to extinction.

The world is beginning to clean up, and mankind to recognize the necessity of cleanliness. We are promoting this antisepsis on our part in giving to man the purified air of heaven and the waters of the earth freed from pollution; the air and water and the spirit in man to conceive and apply measures for their purification, together with the uncontaminated and uncontaminable sunlight, are the direct gifts of God. We have taught mankind the value of cleanliness, the life-saving and prolonging value of physical and moral purity, and putting our precepts in practice, when permitted, we put back pestilence and turn death and decadence from individuals and peoples. We are not gods of the air, but we walk the earth as watchful pitying gods in the service of man, saving him from pestilences that walk in darkness, and of which he knows nothing save in their destructiveness, until medicine enlightens him and overthrows the destroyer of his health and strength and attendant happiness. But for the interposing monitions of medicine, man would not to-day be awakened to the danger of making a beverage of the attenuated liquid pollutions of the soil and falling ill all unconsciously with typhoid and other maladies, as in the days of the not far distant past; reverently submitting to the mysterious ways of the all-wise Providence, as did his remoter ancestors, attributing all affliction to the wrath of offended deities. So little a thing as the timely boiling and filtration of all drinking water will confer a boon on mankind, in warding off disease, which can not be computed. The application of the discovery of Jenner is as nothing in comparison—not even the great disease-averting and life-saving discoveries of Pasteur could be so potent.

As "the sun smiles on the earth, and the exuberant earth returns that smile in flowers," so do the silent ministrations of our noble profession fall upon a recipient world, which blossoms in healthful response. Our ministrations of medical charity, like those of mercy, drop

> "Like the gentle rain
> Upon the place beneath
> Blessing him that gives
> And him that takes."

Noble followers of a glorious vocation, grand and beautiful profession! Sublimest and best of the callings of men, save that alone of the Great Physician of Galilee, whose example encourages us and whose voice approves.

Besides the ten thousand hygienic resources for warding off disease and promoting the world's comfort, which it unconsciously and without thanks to our beneficent profession daily employs, medicine

[16] Dr. J. F. Binney, of my own State, has this year reported in the Annals of Surgery, for April, one such successful operation, and Paschill reported in the International Medical Magazine another last year; both being followed by marked mental improvements. Each of these gentlemen likewise report other cases without satisfactory results. Frank, of Chicago, has paved the way, I think, to the ultimate success of cerebral ventricular puncture.

[17] Dr. Fuller says in his preface to the great demonstrative work of his: When a medical student, the author of this work experienced great difficulty in understanding the anatomy of the brain from plates and descriptions in books, and recognizing the fact that, compared with the number of students, the opportunity of studying the anatomy from the natural brain is sure, he has carefully prepared a series of casts from actual dissections and casts, which he hopes will materially aid the teacher, and render the task of the student much easier.

The dissections presented in this specimen are made from photographs taken of sections of a carefully prepared brain, cut one-sixteenth of an inch apart and perpendicular to a line drawn from the external process to the occiput.

Familiarity with these plates and their situation in the brain will enable the necroscopist to recognize, at a glance, any section that he has made of the natural brain, and to select the proper plate from a book of similar plates which accompanies the preparation, upon which to describe any lesion found, and which he can attach to his report of a post-mortem examination, so that others also familiar with the position of the plates comprising this series will be able to locate the lesion described.

In this way a more ready understanding will be effected between neurologists, and it is hoped that, by this means, together with the careful observations of symptoms, the functions of many parts of the nervous system now obscure, may be more clearly understood.

This preparation is also invaluable to those interested in the surgery of the brain, showing as it does, the relation of the external marking, with deeper structure beneath.

now mitigates and annuls pain through analgesics and anesthetics (local and general) and contributes to human comfort under the most painful circumstances to a degree far beyond that of any other physical benefaction to mankind, Medicine has minimized and trained the lightning so that it ministers to the relief of human misery and the cure of disease. She has made of it a search-light for the human body, an assuager of pain, a producer of sleep and a destroyer of destruction.

The boon of hypnosis and narcosis under the many methods for its induction known to our art, saving the insomniac from the precipice of mental overthrow or neural failure in the lower centers of the cerebro-spinal axis or peripheral nervous system; the power of antisepsis, and through it the wonderful procedures and possibilities of modern surgery, and this *fin de siecle* hygiene; the many and marvelous therapeutic and hygienic advances in promoting the phagocytosis of the toxic bacteria; the destruction of the ptomaines, and in other directions of relief and cure; the discoveries of pathology, histology, medical chemistry, biology, neurology, psychology, psychiatry; and the contributions of surgery, gynecology, ophthalmology, otology, laryngology, proctology and the other specialties of study and work, have made the latter decades of the present century the most memorable in resourceful discovery in the history of medicine or in the history of mankind.

Intravenous injections of immune animal blood serum, promise much for the cure of phthisis and other chronic contagious diseases, and there appears good therapeutic promise for the coming years in mycodermic medication.

These grand achievements give us hope and promise of even grander contributions to the weal of mankind before the close of this final decennium of nineteen hundred.

Medicine has made the Pontine Marshes of ancient Rome, the jungles of darkest Africa, comparatively safe to the traveler, and the valleys of the Nile and Mississippi are no longer menaces to health. Quinin, eucalyptus, picrate of ammonia and tasteless Fowler's solution, have augmented human happiness and spread the commerce of civilized nations beyond computation. The world applauds its Livingstons and Stanleys, yet omits its meed of praise to those who have made their discoveries and the fruition of them a possibility.

Thus we see medicine ever advances towards its final goal, the health and consequent happiness of mankind. Thus we see, though with contracted view only, from this cursory survey, how much the past few years have done in the direction of medical advance. Thus we see that this great profession, the uplifter, the friend and benefactor of mankind, though the jest betimes of the world's great wits, continues its too-little appreciated benefactions. Its votaries, forsaking or ignoring common routes to glory for paths of duty, have gone on ameliorating human misery and conserving and saving limb and health and life, and through health, the welfare of the State; deserving, but not receiving, the conqueror's word of praise, marking the march of medicine with blessings on mankind, and entitled to the world's gratitude far beyond what the world has ever recognized. In the fierce contentions of mind with mind and strain of modern business and professional life, and in man's contests with nature and battle with the elements, medicine preserves and fortifies man's organism for the fierce fray, that he may fight on and conquer success, prosperity and happiness for himself, for his family and for the commonwealth.

When will a gratefully appreciative nation erect suitable monuments to our workers, our warriors, our martyrs in the glorious cause of human happiness and human progress? for without health man is nothing. In the struggle for the survival of the fittest he falls in the fight for existence, and becomes the victim rather than the vanquisher of his environment, and nations do likewise.

The world owes medicine much. When will it ever repay even half the debt? It will be when "isms" and "pathies" in practice are dead; when the now vanishing days of sectarian theories shall have passed away forever; when a unified profession practicing in the faith and teachings of true science shall have its legitimate combined influence over all the people. It will be when students are taught a sufficient length of time (five years or more) in our medical colleges, to enable them to master the principles of medical science and the precepts of medical practice, and to practically appreciate the ethics of their profession. It will pay back the debt in tributes of honor and glory and adulation, and in monuments of marble and bronze, when human progress shall have reached that high stage of evolution when there will be more renown for him who saves life in the name of charity than for him who takes it in the name of national glory; more glory for him who builds up, than for him who tears down the fabric of human happiness. In that on-coming day of human enlightenment the true physician will be esteemed above the warrior. Nations will give him merited places of honor in ministry, in cabinet and council, and on tented and battalioned fields. Then it must needs come that the physician will assert and secure his peerage among the people. History will then give medicine an illumed and illustrious niche in her temples of enduring fame, and the glorious deeds of her worthy sons will be justly immortalized in poet's song. America will then render long-neglected memorial justice to her great medical benefactors. Bronze and marble forms of her great dead doctors, who have dared and done more than warrior or statesman for the public weal, will adorn her public parks and grace her public halls. The enlightened citizen standing beneath the dome of the nation's capitol, as he looks upon the immortal names there inscribed, will see those of America's great physicians written alongside of her other philanthropists, her jurists and her presidents. American philanthropists will read their names there inscribed "in letters of gold and in pictures of silver," and revere their memories as the patriot now reveres the memories of Washington, of Jefferson, of Franklin and of Patrick Henry. The names and remembrance of Benjamin Rush, of Ephraim McDowell, of Marion-Sims, of Beaumont, of Crawford and Jackson, of Bowditch, Agnew, Gross, Wells, Long, Paul Eve, Gaston, Marcy, Weir, Mitchell, Valentine Mott, and their good work for the weal of the world will be as immortal as those of our Clays, our Websters and our Bentons. Every patriot will revere them, because they have contributed to conserve the health of the public, realizing that in the good health of a people is their happiness, their physical, political, mental and moral power, and to be without

this power is to be as pigmies among the nations, puny in prowess and pitiable in all that makes man or nation great and good.

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ORIGINAL ARTICLES

VACCINATION.

Read before the New York State Medical Association, Fifth District Branch.

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It would almost seem to be a work of supererogation at the present day, with the accumulated experience of the past hundred years, to speak of the protection which vaccination has afforded the human race against smallpox.

There are a few people in the community, however, who object to availing themselves of its advantages; the ignorant and uneducated who are willing to suffer the dangers to themselves of sickness and death from smallpox and the certainty of spreading the disease to an indefinite number of others, in order to avoid the slight inconvenience, for a few days, occasioned by the possibility of a sore arm; and the limited number of persons, with some degree of education who, for the sake of a little cheap notoriety, or because of an inborn mental twist, a sort of internal strabismus, which keeps them from looking fairly and straight upon any subject which is presented before them, oppose vaccination upon the premises of falsified statistics, misquotations and untrue statements, backed up and rounded out by a choice flow of denunciation and general abuse.

We can form but a faint idea of the destructiveness of smallpox before the year 1800 when vaccination began to be employed, by referring to history.

Macaulay says: "Smallpox was always present, filling the church yards with corpses, leaving on those whose lives it spared the hideous traces of its power, for two-thirds of the pauper blind in England were made so by this cause."

Another historian states that it was the exception to see a face in England that was not pitted and scarred by smallpox.

In Iceland it is said to have destroyed 18,000 persons out of a population of about 50,000 during the eighteenth epidemic which occurred in 1797.

In Greenland, in 1734, when the first epidemic occurred, two-thirds of the inhabitants died.

In Germany, before the time of vaccination, 66 deaths in every 1,000 were the result of smallpox.

It was no respecter of position in life, or high station, and a long list of royal personages is to be found who died from it.

The same condition of affairs is to be found to-day in some semi-civilized countries where vaccination is not practiced. A missionary, writing from Turkey in Asia, states that one scarcely finds two persons out of a hundred who remain free from smallpox.

It has been claimed by its opponents that the diminution in the number of cases of smallpox since the introduction of vaccination has been due to the improvement in sanitary conditions.

Our experience shows that persons in the better walks of life are just as liable to be attacked when exposed to the disease, unless protected by vaccination, as the poor who live in filthy and crowded tenement houses. It is true that smallpox spreads more rapidly among tenement houses than among private dwellings, because of the neglect of precautions of vaccination, the close contact and communication of the inhabitants, the want of ventilation of the rooms allowing the poison to become concentrated, and the fact that medical attendance is often not sought for until days after the disease has made its appearance.

An objection to using human virus, and one which is well founded, is that syphilis may be conveyed through it. The contents of the vaccine vesicle do not contain the syphilitic poison and are harmless, but as the poison is in the blood of a syphilitic individual it is very difficult to avoid conveying some blood corpuscles when vaccinating from a crust and so producing syphilis. This danger does not exist with animal virus.

It has been claimed that vaccination may be the medium of infecting persons with tuberculosis, but although not definitely proven it is highly probable that tubercle bacilli do not exist in the vaccine lymph. In order to take all precautions to avoid the possibility of danger from this source, the managers of the vaccine farms have calves carefully inspected by competent veterinarians, to make certain that they are free from tuberculosis before inoculating them with vaccinia. The calves are subsequently killed and then examined, and if any evidences of tuberculosis are found the lymph is destroyed.

To avoid the danger of inoculation with septic germs, attention to cleanliness should be observed in the operation. The ivory point upon which the dried vaccine lymph is sent out, or a clean cambric needle which can be thrown away after each vaccination is better than a scalpel or scarifier which has to be cleaned. No dressing should be applied while the vesicle is present, as it tends to soften it and bring about a premature discharge of the contents.

The English vaccination law requires every child to be vaccinated before reaching the age of three months, and experience shows that infants under this age have less trouble from fever or sore arms than older ones.

Let us glance for a moment at some of the results of the protective power of vaccination.

In 1799 and 1801 about seventy-five hundred persons were vaccinated at the smallpox hospital in London and in order to test the value of Dr. Jenner's discovery about half of these were subsequently inoculated with smallpox matter, and in none of them did smallpox produce any effect. Such an experiment would not be justified to-day, but at that time inoculation with smallpox matter was in vogue as an everyday practice, as it was found that the cases of smallpox so induced were milder than those acquired in the ordinary way by contact.

In referring to tabulated statistics, we find that in Copenhagen the fatality from smallpox is but one-eleventh part of what it was before vaccination was introduced; in Sweden about one-thirteenth; in Berlin and parts of Austria one-twentieth; in Westphalia one twenty-fifth.

The German army, where vaccination and re-vaccination are compulsory, and which numbered a million men during the war with France in 1870, lost only 286 men with smallpox, while the French army lost several thousand by that disease.

In Dr. Welch's statistical report of 5,000 cases of smallpox treated in Philadelphia, the death rate among the unvaccinated was 58 per cent. and among the vaccinated only 16 per cent. In 1884 to 1892, out of 1,201 persons employed on the hospital ships for smallpox, of Great Britain, only six or ½ per cent. contracted smallpox and all of those attacked recovered.

But dry statistics do not appeal to one as strongly as personal experience. Time and again, during the recent epidemic, I have seen the unvaccinated members of a family taken sick and those recently vaccinated escape. I recall the case of an Italian family, living in Hudson Avenue, which I lately saw, consisting of father, mother and four children, who had a relative with a child 3 years old staying with them. This child was attacked with smallpox, was not attended by any physician and recovered after a three weeks' illness. The other members of the family had been vaccinated recently and all escaped, although exposed during the entire time. A colored woman living on the opposite side of the hall who had not been vaccinated since childhood contracted the disease.

In another instance a person living in Fiftieth Street was attacked with the smallpox in January, was removed to the hospital and the premises were fumigated. Vaccinations were made in that and the adjoining houses at the same time; a few days later a child was born in the next house, who after fourteen days was attacked with smallpox and died. The party wall between the houses was shown to be pervious by the sulphur fumes produced by fumigation coming through into the next house where the child was subsequently born. The poison had no doubt passed through in the same way, being kept active in the walls by the warmth derived from the stoves. All the other persons in the house had been vaccinated and no one else took the disease.

Again I have frequently seen instances of persons who had been exposed to the smallpox and were promptly vaccinated, with the effect of entirely preventing smallpox from developing, or modifying it so much that it was but a mild affection.

It is a question of the utmost importance as to how long the protective power of a vaccination lasts. Many of the laity consider that they are protected through a lifetime by one vaccination in infancy. This is a fatal mistake and most of the cases of smallpox which I have seen in adults had one or more vaccination scars on their arms.

Vaccination is an absolute protection against smallpox for a certain length of time, but as years go by the protective power disappears, and if the individual acquires smallpox it may be the unmodified form resulting in death, or if less time has elapsed since the last vaccination, the case may be one of varioloid.

The term of immunity will vary with the individual, some cases being protected until puberty by a vaccination done in infancy and others having a vaccination take every few years. It may be laid down as a safe rule that a person should be vaccinated whenever exposed to smallpox or at least once in five years, as a precaution, and that the vaccination must take in order to be a protection.

An illustrative case occurred in my experience a

few weeks ago. A man of 35 years of age, in comfortable circumstances had been vaccinated several times, the last four years ago but unsuccessfully. He was exposed to smallpox and developed the disease, having it in a very mild form, about a dozen pustules in all on the body. The protective effect of his former vaccinations had not entirely disappeared at the time he was vaccinated last, but was sufficient to prevent the vaccination from taking. Four years later, however, the effect had still further diminished thus allowing him to acquire smallpox, although in a very mild form.

Dr. Welch's statistics show that of the children who were admitted to the smallpox hospital in Philadelphia under one year of age, seventy-eight were unvaccinated and fifty-seven died; two had been vaccinated and had exceedingly mild cases.

From the ages of 1 to 7 years:
404 were unvaccinated and 208 died . . . 51 per cent.
35 were vaccinated in infancy and 2 died, 5 per cent.
From the ages of 7 to 14:
222 were unvaccinated, 71 died 31 per cent.
137 were vaccinated in infancy, 13 died . . 9 per cent.
From 14 years and upward:
1,038 were unvaccinated, 681 died 65 per cent.
2,967 were vaccinated in infancy, 495 died, 16 per cent.

The deductions to be drawn from these tables are that the liability to acquire smallpox and to die from it increases as years elapse after the vaccination.

In the recent epidemic of smallpox which occurred in Leicester, England, there were 281 cases. Of these, 126 were unvaccinated and 13 died; while 155 had been vaccinated in infancy but not re-vaccinated—of these none died. The chairman of the Sanitary Committee makes the striking statement that no case of a vaccinated child under 10 years of age had been treated for smallpox.

The committee appointed by the Epidemiological Society to examine the statistics in regard to nurses in attendance on cases of smallpox, reported that out of 1,500 such attendances, 43 contracted smallpox and not one of these 43 had been re-vaccinated.

Dr. Collie says during the epidemic of 1871, 110 persons were engaged in the Homerton Fever Hospital, in attendance on the smallpox sick—all these with two exceptions were re-vaccinated and all but these two escaped smallpox.

The experience of 1876–77 was of the same kind, all re-vaccinated attendants having escaped, while the only one who had not been re-vaccinated took the disease and died of it.

So in the epidemic of 1881, of 90 nurses and other attendants of the Atlas Hospital ship for smallpox, the only person attacked was a housemaid who had not been re-vaccinated.

Dr. Edwards states that of 734 nurses in the Metropolitan Board Hospitals, 79 had had smallpox previous to their entrance and they escaped. Six hundred and forty-five were re-vaccinated on entrance and not one took smallpox; ten escaped re-vaccination and the whole ten took smallpox.

Dr. Welch states that in a service of twenty-three years in the Philadelphia smallpox hospital, not one person employed in the hospital who was properly re-vaccinated before entering on duty has taken smallpox.

A careful study of the literature of vaccination, combined with a personal experience of its protective power, demonstrates conclusively the correctness of Dr. Jenner's statement, namely, that if every person were vaccinated and re-vaccinated as their acquired immunity disappeared, smallpox would be stamped from the face of the earth.

In case of an epidemic existing or threatened, any one is liable to contract the disease and infect an indefinite number of others with smallpox, so that due regard to the rights of the community as a body, would necessitate the vaccination or re-vaccination of every person who may become a menace to the public health and safety, irrespective of his wishes in the matter.

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PREVENTION OF PERTUSSIS.

Read before the Ohio State Medical Society at Zanesville, May, 1894.

BY GEO. M. CLOUSE, M.D.
PROFESSOR OF DISEASES OF CHILDREN IN OHIO MEDICAL UNIVERSITY OF COLUMBUS, OHIO.

As far back as I have been able to compare diseases, I have wondered why whooping cough was allowed to be considered by the laity as it is now, when the profession knows so much about it. There are many parents who, for want of the proper advice, have said that they want their children to have this or that disease, believing "it will not go so hard with them if they have it while young." They are not taught that adultness is a fair immunity from childish, infectious diseases, and that it is no more necessary for children to have chickenpox, mumps, measles, whooping cough, etc., than it is for them to have smallpox, diphtheria, pneumonia or any other disease.

Again, they are not impressed with the fact that whooping cough is one of the most contagious diseases, and one among the most fatal diseases to which children are heir. Too often do we meet pertussis on the streets, in the car, in the boat, in the pew, in the schools, and its victims in the hearse.

In the *Rules and Regulations of the Ohio State Board of Health* adopted June 30, 1893, we find Rule 1 says: "No person suffering with diphtheria, scarlet fever, smallpox, measles, whooping cough, or other dangerous communicable disease, shall be admitted into any public, parochial, or private school or college or Sunday-school, or shall enter any assemblage or railway car, street car, vessel or steamer or other public conveyance." Is this rule obeyed or enforced or even attempted to be, in cases of whooping cough or measles? No; at least in many cases it is not.

Rule 4, says: "It shall be the duty of every physician called to attend a person sick or suspected to be sick with cholera, yellow fever, smallpox, diphtheria, scarlet fever, measles, whooping cough, typhoid fever, typhus fever, within twelve hours thereafter, to report the name and residence of such person, to the Board of Health" Are these requirements met in cases of measles, whooping cough, typhoid and typhus fevers, which four diseases aggregated 1,725 deaths in Ohio in the year of 1892, 15 more than the first five (cholera, yellow fever, smallpox, diphtheria and scarlet fever)? No; not assuming that whooping cough, measles, etc., are as destruc-

tive as cholera, yellow fever and smallpox, but that while we are intently gazing through the field-glass of quarantine at yonder cannonade of yellow fever and smallpox, the musketry of whooping cough and measles pour in with epidemic volleys in close range, year after year, until the death rate is greater than we suspect.

Rule 5, says: "It shall be the duty of the Board of Health . . . when a case of smallpox, yellow fever, typhus fever, diphtheria, scarlet fever, or measles is reported within its jurisdiction, to at once place . . . in a conspicuous position on the house wherein any of the aforesaid diseases occur, a quarantine card or flag . . . and to prohibit entrance to, or exit from such house . . ." Here, whooping cough, the most highly contagious disease known, except scarlet fever, is not mentioned for placarding. Neither is measles or typhus fever placarded, which the rule requires.

Rule 10, says: "No public or church funeral shall be held in connection with the burial of a person who has died of cholera, smallpox, yellow fever, typhus fever, diphtheria, scarlet fever, measles, or whooping cough, and the body of such person shall not be taken into any church, chapel or other public place." Yet how inexcusably is this good rule disobeyed in the deaths from whooping cough and measles.

The State Board of Health with its local boards has saved untold hundreds of lives; and we advocate the belief that it can save at least a few more lives by acting upon the disease of pertussis more earnestly.

Whooping cough is a malady almost entirely limited to infancy and childhood, and but few escape it because of its great activity of contagium; of the carelessness on the part of the profession; and of the ignorance on the part of the laity. The following information has been gleaned from the *Vital and Nosological Statistics* of Ohio from the year 1889 to 1892 inclusive:

"During these four years, pertussis has caused a little less than 1 per cent. of all deaths; and has caused 26 per cent. of all deaths under 10 years old. And during these four years it has caused 1,197 deaths, while scarlet fever has caused *only* 397 more deaths at the same time. Owing to the unreliable sources of collecting vital statistics by the assessors, the Secretary of our State Board of Health says that at least 40 to 50 per cent. of the deaths of Ohio are not returned. This is perhaps more true in regard to whooping cough than scarlet fever, because of the universal belief in the insignificance of the former. Dolan says whooping cough ranks third in fatal diseases of infancy in England; and causes one-fourth of the annual deaths of children in London. In Ohio the death rate is still higher from the same cause.

Griffith says 120,000 died from this disease in England and Wales in nine years; and 85,000 in Russia in five years—an average of 17,000 deaths per year. Winters says it is thought that whooping cough with its complications and sequelæ is more fatal than either diphtheria or scarlet fever. Starr says that next to scarlatina, whooping cough has the highest mortality of all diseases among children.

Whooping cough *per se* is not dangerous but the high mortality is due, as Dr. Winters has said, to the complications and sequelæ which are said by Goodhart to occur probably in one-third or one-fourth of all cases. There are three general reasons why these complications or sequelæ come on: 1, the younger the infant or child, the more prone, except under three months; and greater are the deaths; 2, children insufficiently clothed and nourished; and children whose vitality is reduced by constitutional disease, or by anti-hygiene; 3, a susceptibility to be seized at the same time with measles, each rendering the other more hazardous.

These complications and sequelæ are: Broncho-pneumonia, bronchitis, lobar pneumonia, atelectasis, pleuritis, emphysemia, pneumothorax, tuberculosis, nephritis, heartstrain, pericarditis, dropsy, edemia of glottis, membranous croup, aphasia, paralysis, hemiplagia, epilepsy, eclampsia, meningitis, cerebral hemorrhage, hemioptysis, epistaxis, aneurism, sub-conjunctival hemorrhage, conjunctival ecchymosis, emesis, anorexia, enteritis, hernia, rectal prolapsus, blindness, deaf-mutism, lingual ulceration, goitre, eruptive fevers, sclerosis and marasmus; only about forty in all. Fortunately, many of these complications and sequelæ are uncommon or perhaps rare, and some too often accidental; but unfortunately, the most serious are the most common, *i.e.*, broncho-pneumonia. It would be no extravagance to presume that the mortality from pertussis would be still higher if the death reports were more completely and properly reported and classified. It is a peculiar fact that when a secondary affection attacks, the primary disease abates or is lost sight of entirely for a greater or less time. Therefore, a child in several years hence may die from phthisis, heartstrain, etc., whose origin was whooping cough, which was not so reported and recorded, and the real cause of death is, consequently, unknown. Allow me to say here that we, as physicians, do ask for more complete vital statistics in Ohio.

The prevention of pertussis is the avoidance of the cause; and the cause is an active contagium epidemically inclined. If this be true then it is a preventable disease; and if it is a preventable disease, connected with the knowlege of the high mortality and low record, we should censure ourselves for such a condition laid at the door of the medical profession. It seems to me horrifying to let a single life go out that might have been saved by our present knowledge of medical science and art. Any movement that would reduce the mortality to any percentum would be commendable in proportion to the reduction produced.

Whooping cough and measles seem to be considered of no great importance, even by the boards of health, from the fact that no precautions are enforced. Diphtheria, the most dreaded of all diseases of children, caused 383 deaths *less* than did measles and whooping cough; and these two diseases caused 69 per cent. of as many deaths as diphtheria and scarlet fever together. It is the consensus of a few authors and secretaries of State boards of health, with whom I have been communicating on this subject, that quarantining against whooping cough would be beneficial, but from the suffering it would produce they would not like to see a system of house quarantine. Considering the longevity of the attack and the sordid or poor classes which are most likely to suffer from its ravages, quarantining would now be not impossible but impracticable. But we must not compare health and life with trouble or expense, for there is no comparison. What are we to do? 1,

remove to an infectious disease hospital; 2, isolate; 3, teach.

1. A hospital for infectious diseases only, and maintained by the corporation would be the ideal method of prevention of pertussis, but alas! 'tis only a dream; 2, isolation would be more tangible, but would be unsatisfactorily enforced for several reasons. Serious objections were proposed against quarantining smallpox at first, but no one questions that wisdom now. To card the house for whooping cough (and measles) the same as we do for diphtheria and scarlet fever, would be doing little enough towards quarantining. It is uniquely strange that children who have whooping cough or measles, the two most highly contagious diseases, (with very few exceptions), which kill nearly three-fourths as many as the two most dreaded maladies common to children, are permitted to go at liberty on the streets and elsewhere. It is a shame for intelligent Ohio!

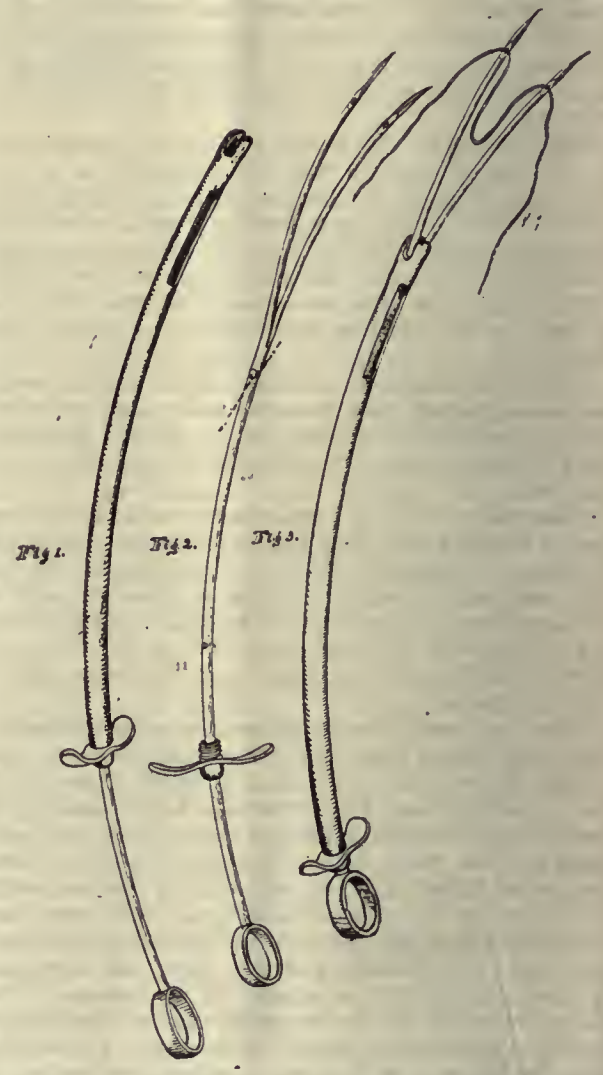
About the only objection to house-carding for whooping cough, are the difficulties of making an early differential diagnosis; also, the irregularity of the course of the disease; also, the contagiousness of pertussis patients which is as long as the patient coughs, but not the same degree as in the paroxysmal stage. Because we can not prevent all the children from this contagium is no reason why we should not attempt to prevent as many as we can. We will then be doing more than we are now doing, and in time will receive our merited reward.

3. Teaching the laity the destruction secondarily caused from whooping cough is our duty much neglected. We should be the people's protectors and be active against everything that would jeopardize their health or life. To have them call our attention to any point of danger or benefit of health, is a served notice of our slothfulness. And this notice has been served on me not a few times during the epidemic of whooping cough just now abated. The laity can be taught to obey restrictions on one disease as well as another; and whooping cough will be no more difficult to restrict than tuberculosis which we hope will soon be under some kind of restrictions. There are people who send their children to school in any condition, for almost the sole purpose of getting rid of them for that time, caring nothing for the danger of their carrying the infection to others. Such parents or guardians should be fined or in some other way punished by the health officer. Again, there are children who for fear of being kept away from school will use deceit in the early part of the disease, thereby exposing others. It would then be necessary for each school teacher to be qualified to act on the prodromic and early diagnostic symptoms of contagious diseases, and prohibit entrance to the school yard until the receipt of a physician's certificate or a personal visit by the teacher at the home.

GASTRO-HYSTERORRHAPHY WITHOUT OPENING THE ABDOMINAL CAVITY.

BY FRITZ BAUM, M.D.
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Our negative results in treatment of prolapsus uteri and retro-misplacements by pessaries and supporters have proven conclusively that we can never gain our point in supporting the prolapsed uterus from below, and that we must find some means to uplift same from above, and in this way substitute the office of the relaxed round and broad ligaments. For this purpose we have constructed the following instrument, consisting of a hollow tube like a big uterine sound; within this there is a piston-like rod with a handle at the outside and two needles threaded to one thread at the end inside. Now our idea is the following one: Place the patient in Trendelenburg's position, insert this instrument called uterine ventro-fixator into the uterus and after correcting misplacement of same, bring the fundus as high up as possible in direct contact with abdominal wall; then push the rod up until the needles protrude through the skin, unthread needles and draw the piston back, thus removing the needles and withdraw the instrument.



Pull the thread up as high and tight as feasible, then tie a strong knot after having made a little incision through the skin of the abdominal wall to embed the stitch, in this way fixing the uterus to the abdominal wall. The place is then dusted with iodoform and sealed with collodium.

As far as we can see, the first question, which would arise would be the following one: Is there danger of sepsis? We say not, if properly managed.

The vagina should be first well cleansed and packed with antiseptic gauze until rendered aseptic. Then on the day of the operation the uterus should be curetted and washed out with a strong antiseptic solution and then after perfect boiling of the instru-

ment, needles and thread, we think this danger would be eliminated.

The next question would be, shall we get adhesions by holding the uterus in contact with the abdominal wall in this way? We think we should, because by pulling the uterus up against the abdominal wall, these stitch holes must naturally give a little, perhaps they will even tear some; this will set up some local inflammatory action which will result in adhesions, which "report of cases" will prove, if the uterus is brought in *firm* contact with the abdominal wall. We may either leave this stitch in there permanently or may remove it after two to three weeks.

The only contra-indication for this operation, as far as we can see, would be adhesions of the intestines to the fundus uteri or portions of the abdominal wall, or firm adhesions of ovaries and tubes to the back, or presence of pus about the uterus and appendages. The interference with a large bladder can be easily avoided by keeping a sound in it during the operation.

Whoever has operated or seen the operation, will be convinced that the danger of wounding the intestines is almost eliminated because the uterus can be so plainly felt through the abdominal wall and manipulated in such a manner that all intervening tissues can positively be excluded.

Case 1.—Miss M. D., age 19. Retroversion with strong adhesions, after severe fall four years ago; since that time frequent painful urination, backache and difficult menstruation. I made the first operation at Bethany Hospital, Kansas City, Kan., April 21, under assistance of Drs. J. D. Griffith and S. I. Harrison, and R. A. Roberts, of Kansas City. Uninterrupted recovery; highest temperature recorded was 99.4. Patient had no pain nor inconvenience whatever and was discharged after three weeks' stay, (two weeks in bed) in the Hospital, with her uterus firmly adherent to abdominal wall hardly within the reach of the finger in vagina.

Case 2.—Mrs. F. O., age 37. Three children, youngest 5 years old; after last confinement, prolapsus uteri with pertaining complaints; operated April 22; highest temperature 99.7; very little pain; remained in bed thirteen days; discharged after three weeks; uterus in proper place. Uterine supporter was fitted to be worn about one or two months.

Case 3.—Mrs. R. T., age 26. After tedious labor case and forceps delivery, patient complained of backache, headache, and frequent painful urination. Examination showed retroflexio uteri. Operation April 24; temperature remained normal; slight pains over region of stitch. Contrary to my custom I did not embed the stitch in abdominal tissue but severed it the seventh day, in order to test adhesions which proved strong enough to make the uterus adhere to the abdominal wall. Uterine supporter was fitted and patient was discharged seventeen days after operation completely cured.

Case 4.—Mrs. A. K., age 43. Prolapsus uteri of nine years' standing. Operated April 25; clipped stitch May 2; found uterus strongly adherent and fitted uterine supporter. Discharged May 19 completely relieved.

Case 5—Miss F. L., age 18 years. Kicked by horse in the abdomen about one year ago; since that time dysmenorrhea, headache, backache, fatigue feeling, etc. Diagnosis, retroflexio uteri. Operated April 26. No elevation of temperature; had a circumscribed peritonitis around the stitch as large two silver dollars. Made uninterrupted recovery and was discharged two weeks after the operation.

Case 6.—Mrs. A. B., age 25. Gave birth to twins, forceps delivery, two years ago. Diagnosis, retroflexio uteri. Was unable to do her own housework because of backache, headache, and constant desire to urinate. Operated April 29; highest temperature 99; very little pain. Did not embed stitch but cut it twelve days after operation; uterus remained in place. Uterine supporter fitted and patient was discharged twenty days after operation completely relieved.

Case 7.—Mrs. L. M., age 36. After fall from a wagon two years ago had adhesive retroversio uteri; difficult menstruation with constant backache and headache. Operated May 1; no rise of temperature; was discharged relieved, within two weeks after operation.

Case 8.—Mrs. J. K., age 26. Had three children. According to her own report had miscarriage two years ago; after that puerperal fever. Examination shows retroverted uterus almost immovable. Operation May 4; greatest difficulty in destroying adhesions. Rise of temperature second day to 102.2; third 101; the following day 100.3, but found in changing the vaginal tampon that uterus had dropped back as I expected.

There were three more cases operated upon which gave complete satisfaction though they are still under treatment, therefore reports later.

THE SURGICAL TREATMENT OF GRANULAR CONJUNCTIVITIS.

BY J. A. BACH, M.D.

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The important feature in all forms of treatment of granulations of the eye-lids, whether surgical or otherwise, is to remove pathologic elements and prevent further invasion of the same with their destructive consequences, with the least possible harm to the conjunctiva and lids. Without proper treatment we know that granulations will in many cases ruin eyes, and in others cause serious lesions, either by inducing ulcerative processes or, in the more favorable cases, by producing cicatricial contractions and deformities of the lids. In fact, a large percentage of cases as they come for treatment, have already suffered in some way or other in the mobility or form of the eye-lids. These complications by the additional irritation they induce, further aggravate the unpleasant symptoms and not infrequently produce spasmodic contractions of the muscles of the lids, forming a serious obstacle to the successful treatment of the case. Therefore, often one of the first considerations in the surgical treatment is to remove such complications by the proper operation. A canthotomy in cases where this is indicated, through the powerful contractions of the orbicularis muscles, will give us the most valuable aid as a preliminary step to further treatment.

Other abnormal conditions as to mobility or shape of the eye-lids can frequently be corrected with great advantage before proceeding far in the treatment proper of the case before us.

The surgical treatment to be of any advantage in the cure of granulated eye-lids must be of a conservative nature and must seek, as far as possible, to *protect* rather than *destroy* invaded elements of the conjunctiva and deeper tissues. We must therefore place as foremost of all surgical measures, the expression rather than excision of the pathologic elements in all cases where this can be done. By this means we may not succeed completely in removing all the granulations, but we will succeed in suitable cases if the operation is thoroughly done, as it ought to be, to remove most of them and at the same time so stimulate absorption and physiologic tissue changes as to lead to a rapid cure of the condition, whether supplemented by further local applications or not. It is not to be forgotten that the ordinary remedies are applied, not with the idea of directly destroying the granulations but for the purpose of inducing that state of local hyperemia which most favors absorption, so that if we can directly, by expression remove these deposits, we gain valuable

time besides producing the same results physiologically, that topical applications produce.

Expression of granulations can be used in all cases, but is more especially adapted to the first stages of the disease, before the deeper tissues are much involved. Where severe inflammatory symptoms usher in the disease, it is well to allay such inflammations before applying surgical measures of any kind.

A number of instruments have been devised for the purpose of expression, the most suitable of which are Knapp's roller forceps and Noyes' forceps. Another instrument that can be used with great advantage is the ordinary Desmearre's entropion lid forceps, and which in many cases I prefer to other means. However, it is not the particular instrument that one may use in this performance; it is the completeness with which the operation is done that goes to cure our case. Frequently, expression can be successfully done by the use of the finger nails. Friction, as applied by means of a brush or similar means sufficiently strong to tear the superficial capillaries and soft friable granular masses, but without destroying the normal tissue fibers has been extensively used in some quarters with great satisfaction. Grattage or scratching by means of a stiff brush or by a small metal rake, is a similar means but rather more severe, and ought to be used with care and discrimination. In the first stages of the disease it might do considerable harm by tearing and lacerating the conjunctiva and therefore it is applicable only where we have exuberant and fleshy granulations covering the whole lids; where the conjunctiva is so completely infiltrated and covered as not to be recognizable. Expression in such cases is frequently not sufficient, as we have here to deal largely with hyperplasia of tissue elements. The results obtained by friction or grattage as indicated, will by tearing the superficial capillaries, as well as the softer pathologic elements, cause local depletion and greatly improve circulation and absorption. It is surprising how quickly these thick fleshy lids can be reduced in a few days by this means, where it would take months by means of the ordinary topical stimulation. The good results of this procedure can be augmented by the additional use of antiseptics and astringents. In the more advanced stages of the disease, where deep deposits have taken place especially at and in the fold of transmission, the venous circulation often becomes very sluggish owing to mechanical obstruction. Absorption under such circumstances is deficient and practically at a standstill. Neither expression nor grattage is fully capable of removing this condition of affairs. Thorough massage has produced good results, although this is not always sufficient. Through the thickening and stretching produced, the conjunctiva becomes redundant and the careful excision of the fold of transmission has been practiced in such cases with decidedly satisfactory results.

A two-fold indication is met in this way:

In the first place we remove a large amount of infiltrated, and objectionable tissue, and in the second place we destroy the over dilated and inactive blood vessels and improve the local circulation and nutrition.

It has been held that by means of excision of the fold, disagreeable contractions are liable to occur. This, however, is not the case if the excision is done in the proper cases and properly executed. It is desirable to excise as little as possible of the conjunctiva, and as this membrane is quite redundant in these cases no harm can come from this. The main object is to excise the subconjunctival tissue deep in the fold.

Galezowski is an ardent advocate of excision of the fold of transmission, and does this as a routine practice in all advanced cases. In his experience he has had no unpleasant results following the operation. Special instruments have been devised for the purpose of excision, among which may be mentioned Galezowski's forceps.

Cauterization by the actual cautery has been practiced to a limited extent and, in my opinion, can not be considered a rational measure. It certainly offers no advantages over excision or grattage, besides being much more liable to leave hard and irregular cicatrices. The principle of electrolysis which has been practiced by different men with good results, would seem more conservative and therefore more applicable. I have had no experience with this method, nor do I believe that it can be made to answer the purpose as well as other means at our command. The operation of scarification of flabby granulations is in my opinion objectionable, as by its use we will necessarily sever and greatly injure the conjunctival covering without offering any advantage which can not better be achieved by grattage. The use of massage, although not strictly a surgical measure is one of great advantage in conjunction with the various other procedures. In cases where the disease has run its course and has left behind large atrophic areas of the conjunctiva, or where this has occurred through severe caustic or surgical treatment, transplantation of conjunctiva of the rabbit to cover these defects, might suggest itself. By thoroughly removing the overlying tissues, it would seem simple enough to transplant healthy conjunctiva and give the globe a more acceptable protection.

INTRALIGAMENTOUS AND RETROPERITONEAL TUMORS OF THE UTERUS AND ITS ADNEXÆ.

Abstract of a paper read at the meeting of the American Gynecological Association, at Washington, D. C., May 29, 1894.

BY WILLIAM H. WATHEN, M.D.
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While paroöphoron cysts and retroperitoneal myomata of the uterus and its muscular processes have nothing in common in their etiology, I would include both kind of tumors, because the technique of the operation for their successful removal is practically identical. With few exceptions, cysts that unfold the layers of the broad ligament and burrow deep into the pelvis and retroperitoneal connective tissue, often developing nearly continuity in relation to other structures, probably arise from remnants of the mesonephros in the paroöphoron. Either the cystic or solid tumor may separate the peritoneum anteriorly and lie in front of it attached to the bladder, fascia and muscles of the abdominal wall, the separation sometimes being so extensive that it may be possible to reach the tumor and enucleate it through a median incision between the pubes and umbilicus without wounding the peritoneum. The separation, however, is usually from the posterior pelvic and abdominal walls; the tumor having passed beneath Douglas' sac unfolds the mesorectum, meso-

colon or mesentery of the small intestine; or, passing under the appendix, the cecum or the ascending colon, lies between them and the abdominal walls. The blood vessels that cause the most hemorrhage in enucleation are confined mainly to the capsule, and these vessels are sometimes huge sinuses, and especially is this true when the tumor has unfolded the mesentery of the rectum, the colon or the intestine.

No one should attempt the removal of intraligamentous or retroperitoneal tumors who is not familiar with the normal relations of every one of the pelvic and abdominal viscera and the relations that these tumors may sustain to surrounding tissues, otherwise he is at sea without a compass, and the immediate and subsequent results of his work will be bad. He should know that these tumors are mainly supplied with blood from the ovarian and uterine arteries, and that successful enucleation depends largely upon a correct ligation of these vessels.

The dangers of the operation which should be anticipated are:

1. Hemorrhage from separated adhesions, from the capsule of the tumor, from the denuded surface of a myoma, from injury to the spermatic and uterine arteries, the iliac arteries and veins, and inferior vena cava.

2. Wounding the ureters, the bladder and the intestines.

The causes of death are hemorrhage, shock and sepsis.

The results of the operation depend mainly upon controlling hemorrhage and successful enucleation. To prevent injury to a ureter that may be in front of the tumor it is best to incise the capsule and introduce ligatures *parallel* to the abdominal wound; in incising the capsule avoid large vessels. Hemorrhage will be greatly lessened by careful enucleation close to the cyst wall or the substance of the myoma, thus pushing the vessels in the capsule and in the connective tissue away from the tumor without wounding them. If the spermatic arteries have previously been ligated near the uterus and near the pelvic walls, the enucleation may sometimes be completed without wounding a vessel large enough to cause troublesome hemorrhage—in fact, it may be possible in some cases, by enucleating close to the tumor and the uterus, to perform total hysterectomy without ligating the uterine arteries, they being pushed aside and left in the pelvis uninjured. Great care must be observed in separating the tumor from the bladder and the intestines, otherwise these organs may be wounded or the coats so injured that sloughing may result, and when the enucleation has reached the pre-vertebral space careful dissections must be made, always hugging the tumor, avoiding the ureters or deep-seated vessels.

As gum tubing can not be used in many of these cases, hemorrhage may be controlled by forceps, separate ligation, ligation *en masse*, or a continuous suture; and hemorrhage from the substance of a soft cavernous myoma may be controlled by firm gauze pressure, or ligation *en masse*, the ligature being introduced deep under the bleeding vessels with a long curved needle. Forceps should be so shaped as to be readily applied to any part of the separated capsule, and the surface of the blades should be comparatively smooth and the edges so rounded as not to cause hemorrhage by cutting through the thin and fragile walls of the vessels. I here present two forceps of my own device that well illustrate this point. Adhesions should be separated, if possible, between forceps or ligatures. The cyst should be tapped before enucleation is begun, and when this is done the caliber of the vessels in the capsule contracts.

If hysterectomy is necessary, total extirpation is preferable, for we can not get sero-serous union over the uterine stump, and unless this can be done the cervix ought to be removed. If possible it is best to ligate the uterine arteries outside of the ureter before they give off branches that supply the upper part of the vagina and cervix, otherwise ligate them close to the cervix to prevent injury to the ureters. The patient should be in the Trendelenburg position, so that the different structures and their relations may be seen as we proceed. There is no fixed opinion or uniform practice in the treatment of the sac cavity. It is drained through the vagina; through the abominal walls, with or without suturing the capsule to the abdominal wall; or it is not drained at all. If hemostasis has been nearly perfect and the operation aseptic, drainage is not necessary, and then in total extirpation the vaginal vault should be closed by interrupted sutures.

MEDICAL EXPERTS.

BY WILLIAM S. FORREST, ESQ.
OF THE CHICAGO BAR, CHICAGO.

[Response to a toast at the annual banquet of the Alumni of Rush Medical College, May, 1894.

Justice can not be administered in our civil or criminal courts without the aid of medical science. In the detection of crime, in the demonstration of innocence, in determining the probable cause, nature and extent of personal injuries, in shedding light upon the validity of wills, in ascertaining the existence and degree of mental impairment, the courts are compelled to lean upon the special research, observation and experience of the physician.

Originally, in England the medical expert aided the court by reporting to him his conclusions somewhat as is now done by a Master in Chancery. In those days he was selected by the judge and not examined by counsel. That system failed, and in its place arose the present system, which requires the expert to respond to a subpœna, if his reasonable charges are tendered him, and to submit, under oath, to examination and cross-examination. There is nothing, however, in the law or practice to-day that prevents a trial judge, of his own motion, from selecting and compelling any physician to give expert testimony as to the matters in issue in any case, when his testimony is relevant, if the court tenders him his reasonable fees. A fund to be provided by the county board in any county is all that is required to invest the courts of that county with full power to introduce in every case the testimony of that physician, whom the presiding judge may deem the most competent, within his jurisdiction, to elucidate the controverted medical question.

Of late there have been frequent complaints of medical expert testimony. Most of these complaints, in the judgment of lawyers, are based on prejudice and the want of full and accurate information. Sometimes they are prompted by the bias and the enthusiasm that flow from the zeal of partisanship.

American journalists have ceased to be impartial

reporters and reviewers of legal proceedings. They are advocates in a forum in which no effective reply can be made by persons who are not editors or proprietors of newspapers, and where usually the contentions of one party are maintained by argument, evidence, rumor and suspicion, while the contentions of his opponent are assailed by the truth, in so far as the truth is serviceable, but when it fails to hit the mark by appeal to prejudice, by insinuation, by caricature, and even by the coinage of the imagination. Their tone indicates that they know the whole truth. The greater number of their readers, especially those whose literature is exclusively the newspaper and the magazine, assume their expressed degree of certainty as to the actual truth and, when "gravelled for lack of matter" in ordinary conversation, earnestly state and warmly discuss their opinions concerning the last or the approaching trial of a great case. This agitation in the press and discussion in society lead nearly the whole body of the people to prejudge the controverted points in all celebrated causes, civil and criminal, and to cling with pertinacity to their prejudgments, regardless of the evidence, until the final order is entered and the actors in the legal drama pass from the stage. Hence arises a long train of mischiefs, not only to the medical witnesses, but also to all persons in any way connected with modern jurisprudence.

Some of these complaints, I have said are groundless; others, however, and those not commonly noticed, are fully warranted by the experience of men acquainted with litigation.

Although medical expertism is not what it ought to be, it is by no means what it is represented to be. Yet, it must be conceded that it has fallen from its former estate in popular opinion. The prevailing notion as to its character is due, in my judgment, to impertinent and improper cross-examination, to improper rulings by the trial judges as to the competency of certain questions and as to the scope of the cross-examination, and to the imperfect, if not incorrect, reports of medical testimony in the daily newspapers, as well as to the shortcomings of the experts themselves.

Within the past year, a physician who was called to answer a hypothetical question as to the nature and effect of certain wounds, was cross-examined for several hours on psychology, neurology, chemistry, anatomy, physiology and histology. Objection to the latitude of the cross-examination was promptly overruled. If such an examination is permissible, then any industrious lawyer who has been instructed by a learned coach, can make the average medical expert in any case appear ridiculous. If such a method of interrogation is admissible, then no medical expert can pass creditably through the ordeal of cross-examination in any trial unless he is prepared to answer questions, not only on the subject on which he offers himself as an expert and what is fairly involved in it, but also on the whole science of medicine with all its ramifications.

Willingly admitting that the bar, the judiciary and journalism are in this way partly responsible for the want of public confidence in medical expert testimony, still I claim that its chief cause will be found in such intellectual deficiencies of the average medical expert as are disclosed by the legitimate cross-examination daily conducted in our courts. These intellectual deficiencies are: 1, unfamiliarity with the minutiæ of the particular subject on which he is called to give testimony; 2, his lack of reasoning power; 3, his apparent incapacity to test the opinions, which he seeks to maintain, by the cardinal rule of all scientific investigation, namely, that no theory is proved, unless it is consistent with all the genuine facts and excludes, to the degree of certainty required, all other theories.

The daily practice of the physician, which requires him to do the best he can in view of the symptoms disclosed, results in habits of mind which, if not corrected by earnest endeavor, unfit him for scientific investigation and scientific statement, and, therefore render him incapable of presenting his opinions in a logical form and of maintaining them in a contest with a thoroughly equipped lawyer, who has a clear advantage, because he is the questioner, and is fresh from a special study of the subject.

In the sick chamber, not to appear to know and to act accordingly, is failure. In a court of law, not to give an opinion unless you are certain that it is sustained by the facts presented and the teachings of medical science, is success.

Assuming, then, that the cause of the prevailing opinion of medical expertism has been correctly stated, what is the remedy?

A board of medical experts to be appointed by the judges of our courts of record is often proposed.

In the nature of things this scheme can be a remedy for so much of the complaint only as is caused by the partiality towards the defense of the experts retained by it. If such partiality be the cause or the chief cause of the complaint, then the remedy suggested is appropriate; and whenever the defendant is poor and without influence will be decidedly effective.

On the other hand, if our analysis is correct, that remedy will be merely sweetened water given to cure a deep-seated difficulty.

If it were possible to organize and maintain a board or college of experts, whose knowledge and skill embrace and completely cover in all its parts the whole field of medicine and its accompanying sciences, and who are endued with that form of moral courage which inspires a man to tell the truth in absolute disregard of public opinion, when it is his duty to do so, I do not know of any measure within the range of possible legislation, that would be of more enduring benefit to the administration of criminal justice, considered from the point of view of the defense as well as the prosecution.

I insist, however, that there is not resident in Illinois any responsible public authority that is competent to select such a board, and that, if there were such an authority, politics would prevent the election of the most competent physicians.

Besides, the science of medicine to-day is too varied to be represented by any number of physicians possible to be gotten together in any board that can be created and supported at the public expense.

It may be replied that we ought not to expect perfection. True. Do not forget, however, that under the powers with which the judiciary is now invested, if your county board will appropriate the requisite funds, any trial judge may compel any physician to testify, upon whom a subpœna can be served within the jurisdiction of the court. For all practical purposes, therefore, more efficient service can be had in

the present state of the law than would be rendered by the proposed board of medical experts, provided the judges exercise their powers and the county board makes a sufficient appropriation. We have, in effect, now a board of medical experts which consists of the entire medical profession of Cook County. Why limit it by creating a legal board?

Furthermore, such a board, if created in Cook County, would furnish testimony that would be more imperfect in the respects in which medical expertism is now imperfect than the system which at present obtains.

Gentlemen who favor the creation of such a board admit that our governors and State boards of health are not competent to select it, but they claim that our judges are.

I can not agree with them, yet I yield to no man in my respect for the ability, impartiality and uprightness of our local judiciary.

No set of men are competent to select a board of medical experts with the proper qualifications, unless they are acquainted with the leading physicians, able justly to estimate their proficiencies, sufficiently prescient of the future to know the medical questions that will arise during the term of office of the members, and strong enough to resist and overcome the pressure of politicians and the insistence of personal friendship.

In urging that our judges are incompetent to perform the duties under consideration, I merely insist that they are human and have the usual limitations of good lawyers, who have assiduously devoted themselves to the practice of their profession, and are now dependent for their official existence upon votes cast in political conventions. They, like the rest of mankind, ought not to be led into great temptations.

Suppose our judges were empowered to organize such a board, in what proportion would they divide them among the different schools of medicine? Who would finally be appointed? Physicians named by politicians. How do we know? By experience. Our judges now name the South Park commissioners and justices of the peace. Do you know of a South Park commissioner or a justice of the peace who does not owe his position to politics? Did not our circuit judges lately divide into two sets respecting the appointment of one of those commissioners, and did not one set refuse to meet and confer with the other, until the seceding set had their way as to the politics of the new appointee?

If our judges were empowered to appoint a board of medical experts, is it not morally certain that no physician would be considered whose application was not supported by political influence? Would not the applicants be so numerous that combinations would be formed among them and their friends? Would not the different nationalities also put in their claims for recognition? And would they not obtain it?

All the past records of the human race teach that the appointing power tends to weaken and corrupt its possessors. Let us not, therefore, attempt to elevate modern expertism by increasing the patronage of our judges. Rather, let us elevate the judiciary by relieving it of the appointing power with which it is now burdened.

Remember, too, that each one of our trial judges constitutes a tribunal that is finally to pass upon the sufficiency as well as the credibility of the expert evidence. The tribunal that is to determine these two questions is not the one that should be permitted to select the witnesses. Every one has an inclination to credit the witness whom he selects.

In Germany there is an official board of experts, but its members are not named by the judges.

Another objection to a board of experts to be appointed by any public authority is, that it would be compelled to decide questions submitted to it in accordance with public clamor, and its members would be more or less controlled by the politicians who secured their appointment.

The common supposition is that persons who hold quasi-judicial positions, elective or appointive, perform their duties in a fearless and impartial manner. This ancient notion ought to be classed with the old superstitions with which the ignorant are silenced, if not convinced and controlled. Our prosecuting officers are intended by the law to be impartial; but what prosecuting officer in this county ever hesitated to avail himself of public opinion in order to obtain a conviction? In so doing have they been always right? Your supreme court has frequently found that they were radically wrong.

Five physicians of this city, distinguished for their learning and integrity, of large experience in treating the insane, and acknowledged to be in the first rank of their profession, within the past year were retained by the prosecution to examine a man indicted for murder whose defense was insanity. They made the examination and, they say, were compelled by the evidence to conclude that he was insane. They so reported to the prosecuting officer, were not called as experts on behalf of the prosecution, and afterwards went upon the witness stand in obedience to a subpœna by the defense and testified that the accused was insane. Had they concluded that he was sane and so testified, they would have been well paid out of the county treasury. As witnesses for the defense they waived compensation, on account of the poverty of the accused, and gave their testimony as experts without fee and without the expectation of any reward, except that which ought to follow the discharge of public duty.

This beautiful act of humanity, this splendid manifestation of manhood has been stigmatized by the press as "treason to the State." And these five physicians are regarded in certain quarters, because of this charge, not as men who served the public well but as physicians who betrayed their trust and basely served a cowardly assassin.

Scientia et humanitas is the motto of your graduating class. Young gentlemen, the story of your generation, when told, will contain no better exemplification of your motto than the conduct of these five physicians.

Suppose these five physicians at the time they gave their testimony constituted the board of medical experts for Cook County and that their term of office expired a few days afterward. Could they have been re-appointed? What pitiless attacks would have been made upon them, and what revenge would be threatened against the judges who should vote for their re-appointment?

Some of the members, not fitted by the kindly offices of their profession to endure a storm of detraction, would seek refuge in withdrawal, or if their term had not expired, in resignation.

Other members would not wish to be re-appointed, because of their distaste for the fierce conflicts inci-

dent to all forms of public life. In their places would appear five medical politicians who would enter upon the duties of their high office with the unexpressed feeling that, in order to avoid the abuse heaped upon their predecessors, it would be necessary for them to formulate their opinions in the next criminal case in accordance with the edicts registered in the columns of the newspapers and echoed by the cries of the populace. Thereafter the tendency would be from silence to evasion, thence to trimming, then acquiescence, and finally abject willingness to let the crowd have its way.

It has ever been so. Now and then the course of events makes necessary the sacrifice of some human being in the courts of law. Jurors and judges haye seldom been able to render true verdicts and just judgments on the first trial of those cases that stir deeply the passions of the people. Humane legislators have provided courts of appeal, partly in order that there may be a tribunal with revisory power, distant from the passions and influences to which the trial courts are always subject.

Athens, at the height of her greatness, condemned Socrates as a criminal and put to his lips the cup of hemlock. Even Socrates, the good and wise and pure, was judicially murdered by a jury of his fellow citizens, every one of whom knew him personally. How the jurors were applauded for their verdict as they filed into ecclesia at the first meeting of the citizens convened thereafter. Public opinion had demanded the removal of Socrates and the Athenians honored the men who removed him.

Jesus of Nazareth was put to death in obedience to the shouts of the populace: "Away with him!"

In staid and justice-loving England, Titus Oates and his fellow witnesses supplied the perjured evidence which dragged innocent men to the scaffold, in compliance with the excitement and rage of London Town.

Down in old Salem among the pious and sober-minded Puritans, good mothers confessed in open court that they were witches, and the juries and judges believed their confessions and hanged them. Public opinion had so decreed.

Heads dropped from the guillotine in France, sent thither by tribunals that quailed before the wild mob and the master politicians of the age.

These instances of the sacrifice of human life to public prejudice and popular clamor are taken from the histories of the great nations of the earth, the nations that have given modern civilization its philosophy, its religion, its humanity, its sweetness and light.

Varied were the issues and unlike the accused in these trials. Very different also were the laws, the manners and characters of the people in whose courts the judgments were rendered. But in one essential and supreme aspect they were all exactly alike—in all of them the verdict was determined and dictated by popular fury.

History repeats itself, also, in criminal jurisprudence. What happened then, happens now. The difference is that you and I are too near to the trials that have taken place in our generation to view and discuss them in the manner in which they will be viewed and discussed by posterity.

When there is proposed a measure which may affect the fortunes, the liberties and the lives of great numbers of the citizens, it behooves us to deal with the evil we seek to correct in the light of the experience of mankind. Any change in order to be effective must be made with reference to the directing and dominating forces of the times.

Our age is ruled by newspapers as the feudal age was ruled by the great barons. As our courts and juries are influenced and in great trials intimidated by public clamor, so will any board of experts created by any popular authority, be controlled in the end by the same clamor. Relief may be obtained in the courts of appeal from the errors committed by judges and juries; but there is not any tribunal on earth that can right the wrong done by a board of medical experts, who should yield to the madness of the hour and testify, against their judgments, to that which will tend to convict a man on trial for life or liberty.

Within the past ten years a physician, then connected with the county physician's office, testified in a murder trial, on his direct examination to the theory of the prosecution, and on the cross-examination fully and unequivocally to the theory of the defense. I inquired of him after the trial the cause of this great discrepancy. He replied that his real opinion was stated in his answers on the cross-examination; that before the beginning of the trial he had informed the State's attorney of his opinion, and that that attorney had threatened to ruin him if he gave it in evidence. He then reminded me of the savage attacks on him in the columns of the newspapers that followed his departure from the witness stand, as proof that the State's attorney had attempted to execute his threat.

An effective remedy for the evils of medical expertism in Illinois will not be found in any change or modification of the system by which experts are selected. I care not what the system is, if there be in the community any objectionable experts, of push and energy, these experts will become a part of that system. Force and persistence win in the scramble for office, in spite of all safeguards. What is needed is not a change in the system of selecting experts, but greater ability, skill and knowledge on the part of the average medical expert, and the average medical expert is the average physician.

The only adequate remedy for the evils of medical expertism, in so far as a remedy is required, must come from the coöperation of the legislature, the judiciary, the bar, the medical profession and the editors of our great daily newspapers.

First, then, I suggest that the Legislature enact that a medical expert witness is one who has actual knowledge of the subject on which he is called to testify, derived from clinical experience. No physician, for example, should be accounted a medical expert in cases where insanity is the issue, unless he has actually treated the insane. Under the law at present any physician can qualify as an expert in any civil or criminal case, if he is in practice and acquainted in a general way with the literature of the subject involved in the issue.

The judges should restrict the hypothetical questions to the facts in evidence, except in so far as such questions are permitted in order to test the competency of the expert. The cross-examination should be confined to what is germane to the phase of medical science involved in the case on trial. When such a law is enacted and the judges enforce it and the rules of evidence, as they now exist, the lawyers will

be constrained to do their duty on the trial, and thus they will contribute their part to the restoration of public confidence in medical testimony.

The medical colleges may raise the standard of medical expertism by devoting more time to medical jurisprudence, and by increasing the requirements for admission and graduation.

Rush Medical College has done its duty. Recently it increased the requirements for admission, lengthened the course of study to four years, and extended each year's work one-third.

As to the lack of the power of logical statement and of the capacity to reason in accordance with the method of science which, I have urged, characterizes the medical expert, nothing will supply this except that which advances any man in any profession, whether he be self-made or college-made; application and severe self-discipline.

Finally, our genial and learned editors may render great assistance by not permitting the publication of reports of medical testimony that are so incomplete as to amount (unintentionally, of course) to the suppression of the truth and the suggestion of what is false.

It is not sufficient to administer the laws in a just and even-handed manner. It is indispensable that the people should *believe* that they are so administered.

Such concurrence of effort will enable us to leave the jurisprudence of Illinois in a better condition than we found it, and restore medical expertism to the confidence of the people. Nay, more, it will place the medical expert in a position in our courts closely akin to the sacred relation which the family physician now bears to the American home.

SOCIETY PROCEEDINGS.

Ohio State Medical Society.

The Forty-ninth Annual Meeting of the Ohio State Medical Society, held in Zanesville, Ohio, May 16, 17 and 18, 1894.

(*Continued from page 888*).

RACHIOTOMY FOR INJURIES OF THE SPINE.

by Dr. J. C. Oliver, Cincinnati. The basis of the paper was a case upon which the author had operated fourteen months after the injury. The patient was a young farmer, age 34 years, who was injured by falling from a tree. Complete paraplegia resulted *immediately*. Within two days a bedsore developed over the sacrum, which persisted for eight months. The bladder and rectum were involved. At the time of examination, fourteen months after the injury, there was absolute paraplegia, motor and sensory, and a constant dribbling of urine and rectal apathy. There was a projection over the eighth and ninth dorsal vertebræ. The reflexes were all exaggerated. The legs were not atrophied or contracted. His general condition was excellent. It was decided to thoroughly explore the spinal canal and ascertain the condition of the cord, but no hope of benefit was held out to the patient. The operation was performed Sept. 28, 1893. It was found that the eighth and ninth dorsal vertebræ had been fractured, and the seventh had been twisted to the right, so that a portion of the cord about one-half inch wide had been caught by the bones and was completely disorganized. Aside from a transient improvement in the patient's ability to retain his urine, no benefit occurred.

The question as to operable and inoperable cases was then discussed, and the most favorable time for operating considered. The importance of these fractures and injuries depend entirely upon the amount of injury done to the nervous structures contained within the spinal canal. This class of cases may be compared with fractures of the skull, and such a comparison is legitimate. Hence, operations to accomplish any good results must be undertaken early, before injury to the cord becomes permanent. In injuries from direct violence immediate operation should be advocated. In injuries from indirect violence, operation will very rarely accomplish anything.

SECTION ON PRACTICE OF MEDICINE.

Second Day—Morning Session.

The meeting was called to order at 9:00 A.M. by the Vice-President, Dr. S. L. McCurdy, of Dennison.

The first paper was read by Dr. D. N. Kinsman, Columbus.

STUDIES IN IMMUNITY AND TREATMENT OF A SPECIFIC FEVER, *i. e.*, HOG CHOLERA.

It was a report of special work done on hog cholera, to determine whether or not it could be treated by serum or antitoxines successfully. Cultures in bouillon or blood serum, were sterilized by heat, so as to kill the microbes and leave the toxines free in the fluid. Experiments were made both with the attenuated cultures of the microbe and by the use of the toxines. Before the third or fourth day of the disease the use of the latter secured immunity, the hog being able to withstand an injection of the pure cultures which would kill the unprotected animal.

Discussed by Drs. W. J. Scott, Fackler, Hutchinson, Conn, Beardsley, Lindsley, Spiers, Graham and the author. Dr. Beardsley had used pulverized charcoal and the arsenite of copper with the effect that the disease stopped at once, and the hogs ceased dying. They were given all they wanted of it.

IS THERE A BETTER REMEDY IN CHOLERA?

Dr. E. B. Fullerton, of Columbus. The author recommended the use of sulphate of quinin, and endeavored to show the following:

1. That, as the epidemic of 1892, in Western Europe, has shown the old rate of mortality of about 52 per cent., it may be considered as settled that *all modern remedies for the disease have failed.*

2. That, reasoning by the deductive method, the remedy recommended by the author should be chosen before all others, because it alone may be given in sufficient amounts to effect promptly inhibition, followed by almost coincident disinfection of the intestinal tract.

3. That, although Prof. Koch was the first to establish the degree of the inhibitory powers of quinin sulphate, he did not recommend its use in cholera because he knew it had failed to cure the disease.

4. That the reason it failed to cure the disease is found in the fact that the germ of the disease has its habitat in the human body only in the intestinal tract, and furthermore that quinin sulphate, when given hypodermatically or intravenously, escapes by the kidneys without reaching the germ.

5. That, reasoning by the inductive method, wherever given by the mouth in sufficient doses, in every epidemic from and including that of 1831, to, and including that of 1873, it has accomplished all that may reasonably be expected of any remedy, reducing the mortality in advanced stages of the disease to 14.25 per cent. in Asiatic cholera, exclusive alike of choleraic diarrhea and of collapsed cases, to a bagatelle of 2.5 per cent.

6. That, if the ability to show that a remedy *should* be most effectual in the cure of a disease, and furthermore, that wherever rightly given it always *has been* so effectual, does not constitute an important addition to therapeutic knowledge, there would seem to be no reasoning in therapeutics, or "help in us."

DISCUSSION.

Dr. Bleile thought the author's logic unexceptional and the treatment rational.

Dr. Gordon, Georgetown, in 1855 read a paper on cholera, treatment with quinin sulphate and mercury in solution, by the mouth, and has continued this treatment ever since.

Dr. Fullerton—Quinin is the only remedy that stands the practical test.

Dr. Robert Peter, Canal Dover, read a paper on

THE RATIONALE OF SYSTEMATIC ELIMINATION IN THE TREATMENT OF TYPHOID FEVER.

The most promising eliminative treatment is ideal prophylaxis. To stamp out their causes is the best preventive of diseases. The technique of systematic eliminative treatment of typhoid fever may vary. The most direct methods are: Expulsion of the poison, by purgation alone; conjointly by purgation and irrigation of the bowel; by irrigation of the bowel alone; or, by conjoint purgation, irrigation and baths. Any purgative may be prescribed. A good selec-

tion is podophyllin, which has the advantage of directly increasing the secretion of bile. One-eighth to one-fourth of a grain every six hours may be given, and this will usually insure from four to six stools every twenty-four hours of its use. A more vigorous effect may be secured by the use of the compound podophyllin pill. If the stools are already too frequent, calomel may be given in broken doses, one-eighth to one-fourth of a grain every half hour. This will allay irritation and remove the gases and other toxic intestinal contents, which are causing these frequent irritative but not eliminative stools. Purgation by irrigation of the bowel has only an indirect effect upon the ileum. If a tonic is suggested, quinin may be given in 2 grain doses every three hours, nux vomica in one-quarter grain doses every three hours, and if there is loss of strength there may be administered every four hours the comp. syrup of hypophosphites and strychnin, one twenty-fourth of a grain of the latter to one dram of the former. Abortion of the disease is possible when the treatment is undertaken not later than the fifth day. Purgation does not increase, but actually diminishes the danger of perforation. In the late stages of the disease, irrigations alone are the best form of eliminative treatment. The treatment must be pushed until the disease is eliminated, and it will abort typhoid fever by the ninth or twelfth day, if early begun and effectually carried out. The patient should be allowed to eat anything he may desire. Eliminate the poison and nutrients will be borne well.

DR. JOHN E. WOODBRINGE, Youngstown, then read a paper on

TYPHOID FEVER.

This was a supplementary report of two cases, and a presentation of charts. The patients were the son and wife of Mr. W. W., and are of special interest because there were cases of typhoid fever with well-marked symptoms on either side of his residence, and because he had previously lost a son and daughter from typhoid fever. Both cases presented absolutely pathognomonic symptoms of typhoid fever. In one case there was nose bleed and delirium, and in both intense headache, tympanites, gurgling in the right iliac fossa, rose spots and bronchial catarrh. Both cases recovered in less than two weeks as a result of the treatment, which consisted of a No. v capsule of the following:

℞.	Hydrarg. chlor. mitis	ʒj.
	Guaiacol carb	ʒvi.
	Thymol	ʒv.
	Menthol	ʒj.
	Sugar	ʒii.
	Eucalyptus, as much as possible	

The dose was repeated every half hour the first day, every fifteen minutes the second day, every hour the third day, followed by eucalyptol m. x., guaiacol m. i., every three hours, in the first case one day and in the second case two days; followed by a No. v capsule of the first mixture, every fifteen minutes in one case and every hour in the other case, for one day, when the eucalyptol and guaiacol mixture was used until the temperature was normal. Mrs. W.'s bowels not having moved since her illness, she was given a little magnesia, and since she had not slept for four or five nights, her husband gave her a gtt. xx dose of the tincture of opium. Both were given a little ipecac.

Thus the author claimed to be able to cure every case of typhoid fever. The disease is aborted in every instance. Were this country threatened with the invasion of a foreign enemy capable of destroying the lives of 50,000 of her people and prostrating a half million more, as does typhoid fever every year; and were a military man to present evidence of his ability to defeat that foe, such as has been given of the author's ability to save the country the tremendous suffering and loss of life and time caused by typhoid fever, the entire resources of the nation would be placed at his disposal. He said: "I ask you, does not the country owe me one typhoid hospital in which to alleviate a little more suffering and save a few more lives than is possible in private practice? If the profession and the people can be made to recognize this disease by its earliest symptoms, and send its victims to me as soon as it makes its appearance, I make you a solemn promise to return every one of them without a death in much less than one-half the time, and with little or no impairment of the constitution."

DR. COLLAMORE—These papers are very interesting, in that they offer a decided treatment of typhoid fever. A good working theory is the one commonly accepted, that typhoid fever is due to the presence of the typhoid bacillus in the intestinal canal, and the typhoid condition is induced by the action of the toxines produced by this bacillus. Two theories have been offered. The first essayist would drive it out of the system by repeatedly sweeping out the intestinal canal. Theoretically that is good treatment. The other theory is the destruction of the germ or toxine, and the initiative treatment by full doses of calomel recognizes both theories. They work together harmoniously, and they are combined in the treatment given by Dr. Woodbridge. His theory is good because it offers a positive treatment for typhoid fever, and one which is followed by excellent results, as his statistics show. There is only one criticism, and that is the recipe given resembles the so-called "shot-gun" prescriptions. It would be interesting to know whether the entire combination is necessary.

DR. MURPHY, Cincinnati—When any physician claims that he never lost any case of disease by a certain method of treatment, his statement is open to challenge. The fever curve is not always characteristic, and many times the symptoms are misleading. It is a question whether the author of the last paper has not been mistaken in diagnosis. The efforts to eliminate the poison, suggested by the author of the first paper, would not be effectual, because the bacillus can not be gotten out in that way. The best treatment is almost nothing.

DR. J. E. CONE, Youngstown—I am also from Youngstown. We have had several fights over this, and we are still watching his cases.

DR. HERRICK, Cleveland—In all diseases there is a disturbance of normal nutrition. The conditions of nutrition are disturbed from without or from within. In typhoid fever the Peyer's glands of the intestines, in the ileo-cecal valve region are diseased. The infection is conveyed either through the veins to the portal vessel and the liver and lung, or by the lymphatics it is poured into the left subclavian vein. There is no other avenue of approach to the system. In the treatment, rest is of most value. The patient should avoid all solid food, even milk. Warm applications over the abdomen have a grateful effect.

DR BEARDSLEY, Ottawa—Cases of typhoid fever can be positively diagnosed only upon post-mortem. Flushing the bowel with calomel or podophyllin is of great value in the treatment. Some of the salts are probably to be preferred. The Doctor's "shot-gun" treatment is not to be recommended. Small doses of something of an antiseptic character may be administered, and perhaps some stimulants. Milk should not be given, and the patients should be kept quiet. The sulpho-carbolate of zinc is of value to flush out the intestinal canal, and should be pushed until its effect is apparent.

DR. SINNETT, Granville, reported two cases, nurses, successfully treated with not more than twenty doses of medicine in six weeks, and also eighteen cases occurring in the infirmary which recovered under similar treatment. Alcohol and nitric acid combined is a valuable remedy. We should always endeavor to give rest. Dover's powders may be administered. A prohibition of milk is not necessary.

DR. ROBERT PETER—By removing the contents of the bowel we give rest. If we have an armful of wood, the arm is distended and the muscles become tired; we secure rest by relieving the arm of the burden. So in typhoid fever, the bowels are distended and the tissues on the stretch, and they can only be rested by getting rid of the contents.

DR. WOODBRIDGE—The remarks of Dr. Murphy, eloquent and learned as they are, are not at all unique, but are such as we have heard many times before. They simply repeat the old, old story, that typhoid fever can not be treated. If we have in a vessel the bacilli which cause a disease, and know how to introduce something into the vessel that will destroy them, we can with certainty destroy them in every vessel. Having proven that it can be destroyed in one case, it follows that it can be cured in every case. If you institute early treatment for typhoid fever in every case, you will treat every disease that can possibly be mistaken for it in the best possible manner, and will save every case of typhoid fever.

SECTION ON SURGERY.

SECOND DAY—MORNING SESSION.

The Section was called to order at 8:45 A.M., Dr. Dandridge in the chair. The invitation of the Cleveland Medical Society, inviting the Society to hear a lecture to be delivered by Dr. Wm. Pepper before the Cleveland Medical Society, June 22, was received.

"Unjust Malpractice Suits; Causes and Prevention," by DR. WILLIAM ESTEP, Loydsville, was read by title.

Dr. W. D. Hamilton, of Columbus, then read a paper, "A Case of Cirsoid Aneurism;" and Dr. J. C. Crossland, Zanesville, presented a case of aneurism by anastomosis. Dr. W. J. Conklin, Dayton, read a paper on "Splenectomy," with the report of a successful case.

Dr. Donald Maclean, Detroit, read a paper on

THE TREATMENT OF FRACTURES IN THE LIGHT OF ADVANCED HISTOLOGY AND PATHOLOGY.

No material benefit can be secured in cases of fracture of the thigh by the so-called methods of extension and counter-extension. So far as that part of the treatment is concerned, our efforts are futile. No method has ever been invented which would extend or counter-extend to any extent. If a patient is put under extension and counter-extension by any method, in a case of fracture of the thigh, you will in a great number of cases, within a day or two, find the weight on the floor and the patient propped up with pillows. For one reason or another, extension and counter-extension is not carried out in the treatment of fracture of the thigh. In fractures of the humerus, bones of the leg and ribs, extension and counter-extension are not employed, and why should it be more necessary in cases of fracture of the femur than of other bones? But if the surgeons are deprived of extension and counter-extension in the treatment of these fractures they should be given something better instead. Keeping the mode of formation of new bone in view the physician should watch it closely and keep the parts in position by means of sandbags, and often manipulate it to see how things are progressing, moving the sandbags one way and another without subjecting the patient to any pain. Union will thus be secured in good position. We should not leave fractures of the thigh to take care of themselves.

Dr. Allen opened the discussion, speaking of fractures of the neck of the femur. Here the injury is often slight, most common in persons beyond middle life. The shortening may not be beyond a quarter of an inch, and if there is previously a difference in the length of the legs, and the injured leg was the longer, they may then be the same when injured. Under normal conditions a line from the anterior spinous process of the ilium down to the sacrum will go over the tip of the femur, and this point is of greatest value in diagnosis.

Dr. Leonard Freeman, Cincinnati—In fractures of the femur, with shortening which can not be overcome, in which the fragments can not be put in place, it would be perfectly proper to cut down on the femur and adjust them with the fingers. In Colles' fracture, the periosteum passes from the fragment above to the fragment below, binding the two fragments together so that the lower one will not slide on the upper and the fragment can not be easily replaced. This may be overcome by over-extending the end in the direction the injury took place, thus making everything loose. With the thumb the fragment may be easily replaced. It is best not to apply any dressing at all to such a fracture. If a bandage is used it should not be tight.

Dr. Stamm, Fremont—If the patient is able to elevate the leg you may exclude fracture. There is often absolutely no evidence of fracture to be found, and yet there is afterward found to be fracture. As to the treatment we should pay more attention to massage.

Dr. Herrick—In proportion to the condition of development of the animal and the age of the individual is the reparative power facilitated or impaired. The proper time for adjustment is during the collapse from the injury causing the fracture. That having past, the patient should go over the period of excitement and inflammation.

Dr. Thad. A. Reamy, Cincinnati—A Zanesville patient about 10 or 12 years of age came under my care when I was practicing general surgery. He had fallen out of bed, causing a fracture, and he has recovered, without shortening of the limb, by the application of a plaster-of-paris cast. In another case, fragments from both bones of the leg were removed at two separate operations, and they afterwards grew in.

Dr. Larimore, Mt. Vernon, stated that he was going to stick to the orthodox treatment of fractures of the femur for fear of the results of a malpractice suit which might follow, and which he felt he could not afford. A good many physicians have their world's goods in their wife's name, which is a good plan.

Dr. Forbes, Toledo—To let go these safeguards will certainly expose the physician to criticism and malpractice suits and it can do no harm to follow in the footsteps of those who have gone before. In this connection, it is best to apply extension from which no evil can result and which may save shortening.

Dr. Maclean in closing, said: In order for any science to advance, it is necessary to seek to improve upon the ways of our forefathers, and we should not, therefore, be satisfied to follow in their footsteps. The author will be satisfied if the paper presented to-day will set going a new train of thought in regard to the subject of fractures.

Dr. Hunter Robb, Baltimore, Md., read a very interesting paper on "Practical Application of the Principles of Sterilization." Discussed by Drs. Oliver, C. A. L. Reed and Kelly.

On motion of Dr. Reed, the thanks of the Society were tendered Dr. Robb and Dr. Maclean.

Dr. M. Stamm, Fremont, read a paper on "Gastrostomy; A New Method," and presented a specimen in illustration.

THE RADICAL CURE OF HERNIA.

This paper was read by Dr. F. C. Larimore, of Mt. Vernon. Report of five cases, supplementary to cases reported to the Society in 1891 and 1892, making a total of ten cases. The five previous cases are recorded in the Transactions of the Society for 1891, p. 94, and 1892, p. 297.

The suture employed in each case was kangaroo tendon, and the dressing, iodoform collodion and a compress of cotton.

The author also gave an interesting table of operations for non-strangulated hernia, performed in Europe and America. The following conclusions were reached:

1. The operation for the radical cure of hernia is a safe operation. Mortality, .86 per cent.
2. The operation results in a permanent cure, relapses occurring in but 7.5 per cent. of the cases.
3. The operation should be made with the strictest aseptic technique.
4. Make a free incision over and with the long axis of the tumor, from without inward.
5. Open the sac and examine the contents deliberately and carefully, generally resecting the omentum.
6. Dissect up the sac, ligate its neck high up with a chain suture, and resect it below the suture.
7. Restore the obliquity of the inguinal canal by two rows of deep, continuous double sutures.
8. Close the integument with a buried suture.
9. For all sutures use kangaroo tendon, and do not draw so tight as to constrict the tissues.
10. Final dressing: Iodoform collodion.
11. Keep patient in bed from three to seven days.
12. Do not put on a truss.

Dr. Lawrence, Columbus, considered "radical" in itself a reflection on surgery.

Dr. C. N. Smith—A solitary case, except in childhood, rarely occurs except in the corpulent, those weighing from 270 to 280 pounds. He also mentioned a case of strangulation in which there was found nine ounces of sloughing omentum.

Dr. Means complimented the paper, and thought no doubt almost all ordinary cases may be radically cured.

The Committees on Publication, Legislation and Ethics were then announced.

GENERAL SESSION—EXECUTIVE.

Second Day—Afternoon Session.

The first item of business was the reports of committees. The Committee on Admissions reported through Dr. Chapman, and on motion the report was adopted. The reports of the Committees on Finance and Publication were also heard and adopted.

The following were then appointed delegates to the American Medical Association: Dr. Loving, Columbus; Dr. Taylor, Cincinnati; Dr. X. C. Scott, Cleveland; Dr. Larimore, Mt. Vernon; Dr. Bricker, Shelby; Dr. Fowler, Delaware; Dr. M. Stamm, Fremont; Drs. R. C. S. Reed, Holston, Woodbridge and Alcorn.

Dr. Culbertson moved that a Committee on State Legislation be appointed, consisting of a chairman, and one member from each county society. An amendment was added, by Dr. Scott, Cleveland, that a member be appointed from a district society in those counties not having a county society. Accepted and unanimously adopted.

Dr. Hunter Robb and Dr. Maclean were elected honorary members of the Society.

The President's Address was then delivered. He said that if the Society is to play its rôle as an active compact organization, it must be composed of a well-defined permanent membership, which continues from year to year. One of the definite purposes of the Society is the promotion of all

measures adapted to the relief of the suffering, the improvement of the health, and the protection of the lives of the community, and in furtherance of this object, this purpose can most certainly be accomplished by drawing in close sympathy with those bodies created by the State for the preservation of the health and lives of its citizens. No more important communication could be made to the Society at this time than a brief bulletin, stating the present condition of diseases throughout the State, their tendency to spread or evidence of their decline. The time is past when the few years spent in the medical school could possibly furnish all that is necessary in a medical education. We must look to the schools and universities, with their laboratories and instructions in chemistry and physics and biology for a large part of the essential training necessary for the more special study of medicine.

DR. C. A. L. REED, Cincinnati, read a paper on

THE TREATMENT OF UTERINE FIBROIDS AS INDICATED BY THEIR NATURAL HISTORY.

The diagnosis of uterine tumors must be made in recognition of their natural history, and the following conclusions were reached:

1. The natural history of uterine myomata indicates that *a*, multinodular myomata which are yet small and apparently indolent and which do not cause embarrassing hemorrhage, may be safely left to observation before relegating them for operation; and *b*, that single soft myomata and diffuse hyperplasias of the uterus are essentially progressive growths and should be operated upon as soon as diagnosed.

2. That in operating upon multiple myomata of small size we should have recourse to *a*, extirpation of the appendages; and *b*, that ligation of the uterine arteries should be practiced only when the patient will consent to it and will not consent to abdominal incision.

3. In all cases of large multiple myomata showing a tendency to growth, complete extirpation should be practiced.

4. In all cases of simple myoma or of diffuse progressive hyperplasia (the "soft fibroid" of many authors), complete removal should be practiced as soon as the diagnosis is established.

DR. REAMY, Cincinnati, referred to the last point in Dr. Reed's paper. It indicates that not only should the clinician estimate the size of the growth, the age of the subject and the physical condition of the patient, but he should inquire whether the growth is a multiple or a single tumor; whether it is smooth or nodular. A single tumor will not be arrested by removal of the appendages with anything like the certainty a multiple tumor will be. If several combined, or two or three or more with a size each equal to the single tumor, the multiple one will be arrested in growth by removal of the appendages more certainly then the single tumor. However, the single tumors sometimes cease to grow, either spontaneously or under treatment, and these cases do not invariably demand surgical interference, and the question arises whether the reasonable certainty of growth in this class of tumors justifies us in taking advantage of the difference in ease with which the operation may be done, and the difference in danger of the operation. It is well enough to keep the case under observation, determine whether it continues to grow, and subject it to the same treatment as in multiple neoplasm. If a tumor of this character does not produce bad symptoms we are not always justified in subjecting the patient to operative interference. The mortality in the hands of experts is such that the question of prime importance is no longer whether the patient will survive the operation but the principal question is, What will be the influence of the removal of the appendages upon the woman's psychologic as well as social condition. The glory of surgery will be when we are able to not only make the diagnosis and classify the cases, but when we will be able to arrest the growth of the tumor in these cases without removing the uterus. Experience in the dead room shows that one out of five of women 35 years of age have a fibroid tumor of the uterus, and this shows that in an enormous number of these cases arrest of the growth does take place without the aid of either the physician or surgeon. The administration of ergot will increase the tendency to arrest the growth of these tumors, and it is our duty to try to arrest them while they are young. For this purpose electricity also is valuable. Some methods are best in some cases, and other methods are better adapted to other cases.

SOME REMARKS ON THE TOTAL EXTIRPATION OF THE FIBROID UTERUS, WITH ILLUSTRATIVE SPECIMENS,

was read by DR. RUFUS B. HALL, Cincinnati. Only a small percentage of those suffering from fibroids require operative interference for relief. This fact, however, only increases our responsibility in determining early the cases really requiring operation. The chief symptoms and secondary diseases of cases requiring operative interference are hemorrhage, pain, cystitis, peritonitis, and pressure causing temporary intestinal obstruction. With the present low mortality following total extirpation of the fibroid uterus, we should not hesitate to advise all patients who are subjects of fibroid tumor, if their life is endangered or health destroyed, either from the tumor or complications arising from it, to submit to the operation at once.

DR. C. N. SMITH, Toledo, read a paper entitled, "Total Extirpation of a Pregnant Myomatous Uterus, with Specimen."

GENERAL SESSION.

THIRD DAY—MORNING SESSION.

The meeting was called to order at 8:45 A.M., Dr. Dandridge presiding. The following papers were read by title and referred to the Committee on Publication: "Nephrectomy for Tuberculosis," DR. R. HARVEY REED. "Multiple Neuritis," by DR. JOS. RANSOHOFF.

DR. A. E. BELL, Zanesville, then read an interesting paper on "Pneumonia."

THE PHENOMENA OF FERTILIZATION AND THEIR BEARING ON HEREDITY.

This was presented by DR. J. PLAYFAIR MCMURRICH, Professor of Biology, in the University of Cincinnati. The author showed that our knowledge of the laws of heredity depends upon our understanding of the phenomena of fertilization of the ovum, since through the primary cell all heredity is transmitted. The paper showed great research along biologic lines.

On motion, the thanks of the Society were extended to Drs. McMurrich and Kellicott.

THE IMPORTANCE OF DETERMINING REFLEX IRRITATION IN THE TREATMENT OF CERTAIN CATARRHAL DISEASES,

was given by DR. JOHN P. SAWYER, Cleveland. The sympathetic relations existing between the various mucous membranes of the body are so intimate that disordered conditions in the one induces disturbance in its fellows, and that relief of the first is usually followed by relief in the second. This relation exists because of the connection between mucous membranes and the control of their functions exercised by the nervous system. The liver and pancreas, as well as the kidney, are to be considered as extensions of mucous structure. The well-known digestive and urinary disorders of menstruation, and of endometritis or ovaritis, call to mind the effectiveness of reflex irritants from the genital organs. The relief of headaches, vertigo and digestive disturbance by proper treatment of faulty accommodation of the eye may also be mentioned. In a large number of cases within the past two years, careful examination revealed peripheral sources of irritation, after the relief of which marked improvement was observed in the course of nephritis, diabetes, hepatitis and pulmonary catarrh. The author reported three cases in illustration. Discussed by Drs. Sabin and Gray.

"Diseases of the Cornea in Childhood," by DR. C. W. TANGEMAN, Cincinnati, and "Syphilitic Spinal Paralysis," DR. C. J. ALDRICH, Cleveland, were read by title and referred to the Committee on Publication.

DR. WILLIS W. HALL, Springfield, Ohio, then read a paper on

SUBCUTANEOUS OSTEOTOMY, WITH REPORT OF CASES—A NEW OSTEOTOME.

The author referred to the correction of genu valgum and genu varum by subcutaneous osteotomy. In the cases reported four sections were made above the knee and two below. In all the cases there was immediate union of the soft parts and rapid and firm union of the bone. No pus appeared in any of them, and in none was the temperature above 99 degrees. The instrument used is an osteotome, a little shorter than those generally used, and therefore under better control of the operator. The mallet for driving the osteotome is of lignum vitæ, with hard wood handle, and weighs twelve ounces.

DR. J. E. CONE, Youngstown, presented a paper on "Multiple Gangrene."

PRACTICAL POINTS IN ETHER ANESTHESIA,

by DR. W. D. PORTER, Cincinnati. The first subject discussed was the Trendelenberg position, with reference to its effects on anesthesia. It was stated that the table is often

made so that the shoulders of the patient are crowded into the angle formed by the inclined and horizontal portions, thus flexing the head on the chest and interfering with respiration. The thighs, body and head ought to lie on a single inclined plane. The body should be secured from slipping down the incline by fastening the legs or feet. The plan of allowing the shoulders to rest against hooks is to be condemned, as they interfere with the free action of the chest muscles. In producing anesthesia the ether should be given very gradually until consciousness is about lost. Up to this point the open method should be used. Then the ether should be pushed to full anesthesia, the whole process requiring on the average five or six minutes. The Clover inhaler is advocated. The author employs the bag only during the last two or three minutes required to produce anesthesia, and then he discards the bag altogether and maintains anesthesia by the open method. The main indication in maintaining anesthesia is to select the proper depth for the narcosis, and to shorten as much as possible the necessary vacillations above and below this plane. For this purpose the Clover inhaler is valuable, as it gives the anesthetizer accurate control over the amount of ether inhaled, and enables him to make prompt changes in the quantity. Attention was called to dangerous relaxation and respiratory failure, sometimes following excessive muscular rigidity occurring in the first stage of narcosis. The author has observed it in three cases, and thinks it is due to reaction from the excessive strain on the muscle fibers. In conclusion, he advocates, at length, the importance of having a hot room in which to administer the anesthetic. It lessens the danger from shock, the danger to the lungs and the danger to the kidneys. The temperature should be 80 to 90 degrees F., depending on condition of patient and the nature of the operation.

Dr. Leonard Freeman, Cincinnati, read a paper on "Trephining, with Report of Cases," and a paper on "Tonsillitis" was presented by Dr. H. J. Noyes, McConnellsville.

The following officers were elected for the ensuing year: President, D. N. Kinsman, Columbus; First Vice-President, C. O. Probst, Columbus; Second Vice-President, M. Stamm, Fremont; Third Vice-President, J. C. Buckner, Cincinnati; Fourth Vice-President, Robert Peter, Canal Dover; Secretary, Thomas Hubbard, Toledo; Assistant Secretary, Chas. Graefe, Sandusky; Treasurer, Jas. A. Duncan, Toledo.

Committee on Finance, term 1892, F. C. Gray, Dayton (unexpired term of Dr. Pomerine, deceased); term 1894, N. P. Dandridge, Cincinnati.

Committee on Ethics, F. C. Larimore, Mt. Vernon. Committee on Publication, Jno. P. Sawyer, Cleveland. Committee on Legislation, Wm. D. Hamilton, Columbus. Committee on Admissions, W. C. Chapman, Toledo.

The Society then adjourned to meet at Columbus the third Wednesday in May, 1895.

SELECTIONS.

Ethnology of the Natives of North Greenland.—Dr. Frederick A. Cook, ethnologist of the first Peary expedition, has given to the New York *Herald* some interesting facts noted by him while in the Arctic country. His observations relate to the Esquimaux living and prospering—in a small way—in latitude 77° 35′ north. The winter camp of the expedition was pitched, in that latitude, on the southerly shore of MacCormack's Bay. Dr. Cook was constantly on the alert to study the natives who presented themselves at the camp. He states the following leading particulars:

"All the natives whose curiosity led them there to see a white man for the first time were disrobed, examined and photographed both in full costume and nude. Eighty of this tribe of 243 were thus minutely examined and photographed, showing front, side and rear views, bringing out accurately in the nude pictures many of the anatomical peculiarities. These photographs have been turned over to the Academy of Natural Sciences of Philadelphia and the Smithsonian Institute at Washington, where men of science can study them.

"The camera is certainly one of the most important adjuncts to an explorer's outfit. Not only does it render faithfully what the traveler sees and learns, but it prevents that perversion and distortion of facts to which, unfortunately, many observers are prone. Each individual observer sees differently, all seemingly in the direction of exaggeration; therefore, ethnographical observation should be reduced to a single standard of comparison—that of photographs and figures. Hence I have reduced my physical observations as far as possible to figures and pictures.

"The Esquimaux are short in stature. Men average 5 feet, 1½ inches, and weigh 135 pounds, and women are 4 feet 8 inches and average 118 pounds. They are of an olive color, but to get the true shade of Esquimau skin a prolonged bath is necessary, and this, from birth to death, is foreign to the Esquimau. Upon the question of washing or bathing, their customs are fixed both by tradition and habit, hence it requires a great deal of persuasion to have an Esquimau maiden indulge in what she considers a useless task. The color of an Esquimau's skin depends much upon her age.

"In the isolation of that long and seemingly endless night—the Arctic winter—human adaptability is such that one early learns to admire these greasy faced, dark-eyed maidens, dressed in skins, about as well as our blue-eyed daisies in silks and satins while at home. Our practice of baths was to them ridiculous, and they never failed to call our attention to the fact that the day after a bath washing was again as necessary as the day previous. In this way they criticised many of our actions, much to their amusement. Our manner of dress, our table etiquette, our food and drink were sources of endless amusement to them. They are a people with broad skulls, nearly circular, retreating foreheads, and slightly protruding chins; black, coarse hair, very prominent molar bones, a small nose, composed largely of fat; eyes invariably brown, with small pupils, and well adapted to seeing objects at great distances, but the eye is horizontally set, or nearly so, and not obliquely as those of the Chinese. Their faces are often nearly square and flat, so that if a pencil be laid from cheek to cheek over the bridge of the nose it would not touch it. This great development of the muscles of the cheeks is due to their method of tanning skins by a process of chewing, and by eating raw and frozen meat, which is not always tender. Men do not develop beards or mustaches until they arrive at the mature age of 40 or 45 years, and they inferred from this that since I had a heavy beard I must be a very old man, because their oldest men had but a few straggling hairs on their chins and lips.

"The women are absolutely hairless, except their heads, and many of the old women are bald. The skin of the Esquimau varies in color from that of a slightly jaundiced hue to a bronze or olive color. It is much less porous and less active than that of other races. The Esquimau is favored with a superabundance of blood. So full blooded is he that a small cut would bleed for hours, while among us in the low temperatures our blood retreated from the skin and when cut we would hardly bleed at all. The slightest excitement of unusual character would cause profuse bleeding from mucous membranes of the natives. The Esquimaux, like most Arctic animals, have beneath their skin a blanket of fat or blubber, which encases the body and protects it against extremes of temperature. The abundance of blood and blanket of fat are very important elements in the construction of the Esquimau body. It will seen from this that nature has fortified these people against the rigors of the rough Arctic climate. Owing to their wandering existence and extensive exercise their muscular system is thoroughly developed, and the picture of Ikwa carrying a stone nearly as large as himself will show the muscular power of these people.

"I could hardly say that their nerves were well developed or their sensation very acute. Their clothing is so made that when an Esquimau stands perfectly straight a part of his bare abdomen is exposed to the blasting winds and drifting snow, and when he stoops a band of bare skin between the trousers and coat, directly over the kidneys is exposed, and this often in a temperature of 80 degrees below the freezing point. No evil that I could discover resulted from these exposures. We adopted the Esquimau style of dress, but so modified the coats and trousers that our stomachs and dorsal regions were well protected.

"The appendages of the Esquimaux are all small. Hands, feet, nose and ears are exceptionally small. It would seem that nature had provided them with these to lessen their chances of freezing.

"One can not fail to notice the prominent abdomens of both men and women. This is due to their gluttonous eating, and since they live on an absolute animal diet, much more surface is necessary for intestinal absorption, and although I was not afforded the opportunity of measuring

their intestinal length and capacity, I believe they have several feet more intestines than we have. Certainly they have the ability to put away about as much meat at one meal as an ordinary Caucasian would eat in a month."

The Methods of the Mannal Training School in Medical Education.[1] —There can be mentioned scarcely a system of education so imperfect and so unphilosophical as that which prevails in the medical colleges of this country. The American physicians who have become skilful practitioners and distinguished teachers or writers, have become so in spite of the system under which they were taught in college.

Although there is improvement in our schools, there still exists too great disproportion in the efforts of teachers to tell and show students, as compared with those which require them to do for themselves.

The absurdity of this system becomes the more apparent, if possible, by a comparison with the methods by which mechanics learn their trades. Young men in our machine shops do not spend nearly all their time listening to lectures on machinery and looking at workmen using tools in its construction. What apprentice could ever learn in this way to make a shoe, an engine, or sewing machine?

The apprentice commences from the first with his tools to perform the work to which he expects to devote his life. The art of medicine can only be well learned by acquiring skilful use of the necessary instruments and remedies.

The admirable address of Professor Vaughan at the last meeting of this Association leaves little to be said regarding certain departments of medical instruction. I wish at this time to discuss some of the principles to which Professor Vaughan made brief mention at the close of his address.

Assuming that the student in laboratory work acquires practical knowledge of the microscope sufficient for his progress in its use without a teacher, I wish first to direct attention to the importance of due instruction in the use of the ordinary instruments employed in studying diagnosis. These are chiefly the stethoscope, the hammer and plexi-meter, the laryngoscope, rhinoscope, the ophthalmoscope, otoscope, the probe, the exploring needle, the catheter, and speculum.

It is a lamentable fact, whatever may be stated in the annual announcements of our colleges, that instruction in the manipulation of these instruments, even those used in auscultation and percussion, is wholly inadequate for the needs of the student.

Let me explain my meaning by referring to a method of teaching the use of three important instruments, two of which present considerable difficulty to nearly all students.

Models of the head in papier-maché may contain most admirable representations of the normal and of the abnormal tissues of the throat, nostrils and ears. In the orbits may be placed ordinary transparent models of the eye (schematic eye) such as are constructed for teaching the use of the ophthalmoscope. These eyes are remarkably like the human eye and illustrate accurately many of the intra-ocular diseases and also the errors of refraction. By the aid of these models the use of the laryngoscope, ophthalmoscope and otoscope may be perfectly acquired. After due practice the beginner can easily and intelligently examine eyes, ears and throats of patients. The principles of this method may be applied in teaching the use of the other instruments of diagnosis I have mentioned, the human body—either dead or living—being employed in certain cases instead of models.

The instruments which are employed in treatment are chiefly the knife, scissors, forceps, needle and thread, curette, drill, saw, chisel, sound, catheter, bandages, splints and braces, and obstetrical instruments.

Is it not true that the average student, even in our best schools, does not receive adequate training in the manipulation of these ordinary instruments? I emphasize the word adequate. To furnish such training is simply to introduce in their extent and perfection the methods of our best manual training schools.

In obstetrics we find a sad deficiency in practical instruction. The "alcohol baby" and the "rubber mother," the recent fetus and the eviscerated female cadaver afford excellent means for training the beginner in certain procedures. They should, however, simply prepare the way for bedside instruction.

It is far from my intention to attempt to persuade this assembly of teachers that undergraduates can become experts in the manipulations which are practiced in medicine, surgery and obstetrics. I do, however, insist, upon the proposition that every young physician should be as well prepared for his future work as a young "journeyman" for his trade.

We may now consider certain difficulties which arise in attempting to introduce honestly and faithfully these methods into our schools. First, the expense. The laboratory instruction as arranged by Professor Vaughan, and the practical work which I have suggested, in a school of 600 students, implies an aggregate of buildings which can be provided only at an enormous expense. The cost of material, including apparatus, human cadavers and the bodies of animals would also be very large. No small sum would be required for salaries of increased numbers of efficient professors, instructors, demonstrators and assistants of various grades.

A lying-in hospital which could provide the adequate bedside experience, which every student should receive, would still further increase the expense beyond the means of nearly every school in the country. This difficulty, in the present state of medical education is absolutely insurmountable, for no school can provide instruction on the broad plan I have sketched, with the means derived solely from the fees of students. State aid, private munificence and increase of fees will render feasible the plans I propose.

The next difficulty to which I will allude is that of so dividing the student's time that he may perform all this variety of practical work and yet neglect neither lectures, recitations, clinics, nor the study of his books. There are several ways in which this difficulty may be diminished. A more careful, yet reasonable, preliminary examination in English literature, physics, mathematics and the rudiments of Latin will indirectly accomplish much to economize the student's time. The mental discipline in gaining this knowledge, and the knowledge itself, furnish the student with valuable mental time and labor-saving instruments. An obvious and simple means of diminishing this difficulty is to demand attendance during at least four terms of nine months each. Valuable time may be saved for the student by reducing the number of typical didactic lectures to such a minimum as may be consistent with the best interests of the student.

Since no student, however industrious he may be, can acquire more than a knowledge of the fundamental facts and principles of his science, the greatest care should be observed by his teachers that he spends little time on those matters which he can well pursue independently after he has been graduated. Turn for example to the subject of materia medica and therapeutics. A good text-book in which forty or fifty remedies only are carefully discussed may contain all the average student really needs. He can investigate at his leisure and understandingly all other articles of the Pharmacopiœa, after he has entered upon practice.

There is one more difficulty, which will not be overcome without great effort on the part of our schools and of the State. The mass of students in this country are seeking primarily, not a good medical education, but diplomas, that they may at the least expense of time and money commence practice and earn a living. Our medical schools have been compelled from want of means to supply simply what students demand—diplomas with very inadequate teaching.

This is analogous to the condition which prevails in our trades. Few boys are willing to learn well a trade. They are content to acquire facility in performing a very small part of what is expected of a thorough workman—so impatient are they to earn wages.

In our medical schools the state of affairs will at once improve if the license to practice shall depend upon an examination before a State board, which shall perform its duties strictly yet judiciously.

In conclusion I may say that it is the task of our schools to devise a curriculum, which in due proportion—whatever that may be—will employ laboratory methods in teaching the *art* as well as the *science* of medicine. By the science of medicine I mean that which may be taught by laboratory work in anatomy, physiology, chemistry, bacteriology and pathology. By the art of medicine I mean that which may be taught by adequate laboratory methods regarding every procedure and the manipulation of every instrument which is employed in medicine, surgery and obstetrics.

In connection with this work will be clinics, recitations, didactic lectures and exercises in handling and measuring medicines and in writing prescriptions.

[1] Read at the Fourth Annual Meeting of the Association of the American Medical Colleges, Milwaukee, Wis., June 7, 1893, by E. L. Holmes, M.D., LL.D.

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SATURDAY, JUNE 16, 1894.

HOSPITAL SPREAD OF SMALLPOX.

Popular dread of the "pest-house" and the bitter opposition of the average neighborhood to its proximity are among some of the difficulties with which the sanitary executive has to deal during the prevalence of smallpox. During the recent epidemic outbreak of the disease in this country, numerous instances occurred where violence was resorted to in order to prevent the removal of patients to hospital; successful resistance was opposed to the establishment of such hospitals on given sites; and the axe and the torch in the hands of mobs were used for the destruction of those already in existence.

That hospital treatment of smallpox is wholly defensible—not only because of the measure of protection it secures to the public by the better isolation of cases, but because of the greater chance of recovery of the patient himself—has been abundantly proven. The late DR. RAUCH, who thoroughly improved his exceptional opportunities for the practical study of smallpox epidemics, has shown in his history of the pandemic of 1881–83, that the mortality ratio of hospital patients was notably less than that of those treated at home. In one large city cited, among 6,976 cases reported there were 2,518 deaths—a mortality rate of 36.09 per cent.; of this total number, 4,533 cases were treated at home, with 1,874 deaths—a mortality rate of 41.12 per cent.; 2,055 cases were treated in hospital, with 598 deaths—a mortality rate of 29.09 per cent. These figures, and they are sufficiently large to warrant a generalization, show that the smallpox patient has an appreciably better chance of recovery in hospital than at home.

There is thus seen to be no good reason for opposition to removal to hospital, but the contrary.

Recent experience, however, tends to show that the popular antipathy to the propinquity of a "pest-house" may be justifiable. There seems to be a general belief that the contagion of smallpox is not carried aerially beyond 200 feet, but is destroyed by dilution and oxydation within that distance. This belief is purely empiric; there are no scientific data for its foundation; and what is known of the diffusibility and persistence of the smallpox contagium makes it not unlikely that it may be conveyed aerially to much greater distances, as are other emanations of the human body which are recognized at such distances by the keen-scented lower animals.

A recent report on the smallpox epidemic of 1892–3 in the notorious anti-vaccination town of Leicester, Eng., strongly bears out this latter view. The smallpox hospital of the town is situated in a district locally known as Newfoundpool, having a population of about 3,000 persons living in 600 houses. A distance of 620 feet separates the hospital from the nearest house and the farthest group of houses in the district is 1,750 feet from the hospital. DR. PRIESTLEY, the Medical Officer of Health for the town, has traced the origin of cases with exceptional thoroughness and success, and he finds that almost one-fourth (24.4 per cent.) of the total number of cases during the epidemic were "possibly due to hospital influence," and that nearly one-fifth (18.7 per cent.) were "almost unquestionably due to the direct agency of the hospital."

In order that there may be no question as to the meaning of the phrases, "hospital influence" and "direct agency of the hospital,'" and to show that DR. PRIESTLEY is distinctly dealing with the aerial spread of smallpox from a "pest-house," it should be noted that he shows that, in February, when there was an average of fifty-four cases in the hospital and the wind was blowing away from Newfoundpool, there was no special spread of smallpox in the district as compared with the rest of the town; while in June, with a less number in hospital (an average of only thirty-four), but with the prevailing winds blowing directly over the district, "there was a great proportionate spread in the locality."

Especial care seems to have been taken to ascertain if conditions other than that of hospital aerial agency could be made responsible for the disproportionate incidence of smallpox in the special hospital district; but without success. No dissemination from personal contact could be traced; the sanitary conditions of the Newfoundpool houses in which smallpox occurred were personally investigated by DR. PRIESTLEY and found, "with very few exceptions," to be good; even the possible agency of flies and rodents was considered. All the evidence, both of a positive and of a negative character, makes for the conclusion that smallpox contagion was carried from the smallpox hospital through the air a distance of 625 feet to the nearest group of houses; and, in a circle of 2,000 feet around the hospital, caused

smallpox in the enormous proportion of 15 cases in this locality to every single case that occurred in the rest of the town.

Obviously, there is a very important lesson for health authorities in these facts and figures. It becomes a serious question whether, in the light of this Leicester experience, the courts would sustain the establishment of the usual hospital for contagious diseases within 2,000 feet, at least, of human habitations. Fortunately, it is not necessary—and it has not, for many years, been justifiable—to adhere to the usual construction of the contagious-disease hospital. This essential adjunct to the "plant" of the urban health department may be so built as to deprive it of any menace or offense to its immediate neighborhood. The method of ventilation by aspiration through a furnace or sheet of flame effectually destroys all possibility of the escape of disease germs or contagion into the surrounding atmosphere. The construction of a hospital for contagious diseases on any other plan should not be countenanced.

WATER SUPPLIES OF LARGE CITIES.

"Cholera is a sensational disease," observes MR. ALBERT SHAW in his paper on "Hamburg's New Sanitary Impulse," in the current number of the *Atlantic Monthly*. Like that other typical filth-produced disease, typhoid or enteric fever, a single epidemic outbreak of it may result in greater sanitary gains than the constant ravages of more distinctive but more insidious and commonplace maladies, familiarity with which breeds municipal tolerance, if not contempt.

The filtration of the entire water supply of Hamburg from the River Elbe had been under discussion and had been recommended for nearly twenty years; but, in the absence of any pressing emergency, it was not until 1890 that it was actually determined upon, and plans adopted and estimates made by which it seemed feasible to have the filtration plant ready for use during the present year. Cholera made its appearance in 1892, and its epidemic spread was so clearly due to the contaminated water supply that prodigious effort was put forth and the plant was in operation nearly a year earlier than the most sanguine had ventured to anticipate. By these filters the water of the Elbe, which was found to contain the cholera vibrio constantly during the summer and autumn of 1893—after the plant was put in operation—and which regularly contains from 30,000 to 100,000 bacteria to the cubic centimeter at flood tide and from 400 to 1,200 in the river beyond the tidal influence, is now so purified as to contain only from four to ten to the cubic centimeter, and frequently no bacteria whatever are found in the water as it leaves the filters.

As all the world knows, Hamburg had no recurrence of Asiatic cholera in the summer and autumn of 1893; but as all the world does not know, the River Elbe, the source of Hamburg's water supply, was as badly polluted with cholera poison in 1893 as it was in 1892.

Naples had a similar experience with similar results from the cholera epidemic of 1885; Chicago from her typhoid epidemic of 1890-92; and London, Paris, New York and other large cities have been driven, from time to time, by some unusual incidence of a "sensational disease," to seek the improvement of their water supplies even at enormous outlay. In England the great cities of Liverpool and Manchester are now engaged in this work. The former, by one of the greatest engineering undertakings of modern times is impounding a river 68 miles from the city in an artificial lake with a storage capacity of 1,500,000,000 gallons; while Manchester is increasing its present daily supply of 10,000,000 gallons from Thirlmere to 50,000,000 gallons, by an engineering invasion of that loveliest spot in all the Lakeland—the beloved of Wordsworth and Coleridge. So, too, in France, where the municipality of Paris is debating a plan for supplying the city with water from Lake Neufchatel through an aqueduct 300 miles long at an expense of $60,000,000, and involving a tunnel through the Jura Mountains.

These latter plans all look to supplies from unpolluted and unpollutable sources. The Hamburg experiment is that of taking a sewage-contaminated river supply and making it potable; and hence is of more direct interest to this country, where, in the valleys of the Ohio, the Mississippi and the Missouri, so many of the cities must depend upon the rivers for their supply. Already the pollution from inhabitation is a serious evil and it is one which will increase with increasing density of population. The success of the Hamburg filtration system points out the remedy.

Not that the system is new; its value had already been satisfactorily demonstrated at the sister city of Altona, in London, Paris, Berlin and elsewhere. But the Hamburg demonstration is the largest and most successful that has yet been made and the daily tests, prosecuted with rigid scientific accuracy, prove that a badly polluted river may be made to furnish a wholly satisfactory water supply for a large city.

CONSTITUTIONAL POWER OF CITIES TO PUNISH ADULTERATION OF MILK.

A city council may protect health, under its police power and statutes delegating authority to it, the Supreme Court of Louisiana holds, in State v. Stone, by prohibiting the adulteration of milk, and may adopt ordinances to that end. Such ordinances are not open to the objection that they transcend the limits of municipal authority; the purpose being the protection of public health. To secure such a

purpose, persons and property are subjected to many restraints and burdens. Those who directly feel the restraints and burdens are presumed to be rewarded by the common benefit secured. Ordinances prohibiting the adulteration of milk are designed to insure the purity of an article of food upon which many families are dependent. It is of universal consumption. So police regulations upon the subject are designed to prevent fraud and protect health. The standard adopted to test the purity of the milk can not operate to the exclusion of all other evidence upon the subject. Upon proof of the unreasonableness of the standard, that part of an ordinance relating to standard of purity of milk will be illegal, and amenable to the charge of unreasonableness.

REMOVAL OF LODGE PHYSICIANS.

Brendon v. Worley, decided by the General Term of the New York Court of Common Pleas May 7, 1894, was an action brought by a physician to recover for services rendered, as such, to a lodge. He was elected its physician, pursuant to a provision of the by-laws of the lodge that a legally qualified physician should be elected and remain in office during the pleasure of the lodge. The compensation was payable quarterly. No provision was made for the removal of the physician of the lodge at a special meeting, or one called for that purpose, nor was there anything inconsistent with the right of the lodge to discontinue its employment of the physician at a regular or stated meeting. Nor was any ambiguity apparent from the by-law for the election. Under these circumstances, the Court holds that, with the adoption of a resolution, at a regular meeting, for the physician's dismissal, and notice thereof to him, his employment must be deemed to have come to an end, and that he could not collect compensation beyond that time.

RIGHTS PENDING APPEAL FROM JUDGMENT REVOKING LICENSE.

The Supreme Court of Montana holds, in the case of Board of Medical Examiners v. Kellogg, decided March 19, 1894, that the staying, pending an appeal of the operation of a judgment revoking a physician's license is a matter of discretion in the trial court. Consequently, where such Court refuses to grant the stay, and there is nothing showing that its discretion has been abused, its action in the matter will be treated as final. Whether such an order staying proceedings on the judgment, as was sought in this case, for the purpose of permitting the former licensee to continue the practice of medicine, notwithstanding the revocation of his license, until review and final determination of the appeal to the Supreme Court would, if granted, stay the operation of the statute against one practicing medicine without license, and shield him from the prosecution and penalty therefor, especially if the judgment revoking his license be affirmed, the Supreme Court says, is a question of grave importance, which would arise in the event of such a prosecution, but which it does not feel at liberty to determine in this collateral presentation.

PRIVILEGE DOES NOT EXTEND TO CRIMINAL CASES.

The rule as to privileged communications between patient and physician, the Supreme Court of California holds, in the case of People v. Lane, decided March 3, 1894, does not apply in criminal cases. The chapter on "Witnesses" in the California Code of Civil Procedure, limits the rule to civil actions, and the Penal Code, which expressly preserves the rule as to husband and wife in the chapter determining "who may be witnesses in criminal actions," makes no mention of physician and patient. At common law the rule as to physicians was not observed in either civil or criminal cases. The statutory privilege was not conferred to shield a person charged with the murder of another, and it certainly was not intended to be used as a weapon against one charged with crime.

CORRESPONDENCE.

Editorial Correspondence.

SAN FRANCISCO, CAL., June 4, 1894.

We left Denver at 2:30 A.M., May 31, and arrived at Colorado Springs at 5 A.M. It still rained, and the Pike's Peak railway having been washed out by the mountain floods, there was nothing to do but to see what we could of Colorado Springs. Mr. Buckman, of the Chamber of Commerce, informed us that the El Paso Club was open to the pilgrims and many availed themselves of the privilege.

Dr. Anderson invited a party to luncheon in the afternoon, and Dr. Solly invited a party to dinner. It rained too hard to go out and there was music and dancing at the "Antlers." There was no prospect of getting away by the Colorado Midland and the railway company finally concluded to send us to California by way of the Atchison, Topeka & Santa Fé, Mojave route, and we remained that night in Colorado Springs. Various members of the party were entertained at luncheon, by Dr. Moore, and Dr. Hunter took as many as possible out driving, the clouds having stopped dripping for the nonce. The mist lifted from the brow of the noble peak and the pilgrims had a good view of the monarch of the Rocky Mountains. We left Colorado Springs at 4:35 P.M. for California by the Southern route.

A word about Colorado Springs may not be out of place. There are no springs there; the springs are at Colorado City and Manitou—the former three and the latter six miles distant. The place seems largely dependent for support on the crop of valetudinarians who come to be harvested there. Our party were quite unable to judge of the merits of Colorado Springs as a resort for consumptives, on account of the almost incessant rain during the time of our visit. The physicians are clever, and the people hospitable and sociable.

Shortly after leaving the Springs we arrived at Pueblo, Col., which place was largely under water, owing to an inundation by the Arkansas River. The railway tracks and the lower part of the city were badly damaged. After much

difficulty our train was sent over the Denver & Rio Grande Railway to Trinidad, where we arrived about 5:30—owing to the wretched condition of the road on account of rains we only averaged about seven miles an hour on this part of the journey. We were at Trinidad furnished an extra engine and our train made about fifty miles an hour up to Raton, N. M., where we had an excellent breakfast. Here we had a fine view of the "Spanish Peaks," lifting their snow-capped tops grandly in the air. We dined at Larny, the Santa Fé junction, and took supper at Albuquerque, N. M. At the latter place the travelers visited the old town, peered curiously into the adobe houses built upon the narrow, crooked streets, saw the old Mission, now nearly three hundred years old. We then took a new train crew and pounded along on our way across the plains and up the mountains to Flagstaff.

I omitted to mention that Dr. X. C. Scott and Dr. J. E. Woodbridge and party rejoined us at Pueblo. They had anticipated a trip through the mountains on the Denver and Rio Grande Railway to join us at Buena Vista, Col., while we visited Denver, but their trip was cut off by the floods. They were finally taken in farm wagons about twenty-five miles, in the midst of a pouring rain, to Pueblo, where as already stated they found their way back to the ASSOCIATION train. Dr. Maclean's party that had intended to go with us via the Midland Railway, left Colorado Springs for Denver the same night. I inclose a list of them:

LIST OF DR. MACLEAN'S PARTY.

Donald Maclean, A. N. Collins, R. W. Gilman, A. W. Imrie, D. LaFerte, F. W. Mann, J. J. Mulheron, F. W. Robbins, F. B. Tibbals, W. G. Hasty, Detroit, Mich.; W. E. Burtless, St. Clair, Mich.; H. S. Chapman, F. B. Galbraith, Pontiac; W. T. Dodge, Big Rapids; H. Kremers, Holland; D. McLeay, Prairieville; C. G. Suylandt, Gladwin; H. D. Thomason, Albion; D. E. Fuller, Hastings; G. W. Stoner, Mich.; M. Stamm, Fremont, Ohio; A. L. Smith, Montreal, Canada.

Sunrise on the morning of June 3 found the ASSOCIATION train making only moderate time climbing the mountains near Flagstaff. The snow-capped San Francisco peaks were in sight, the air cool and the day bright, altitude 7,960 feet. We crept down the mountain about a thousand feet or thereabouts and breakfasted at Williams. From there we made a rapid descent to the Colorado River where it forms the California boundary, and the basin only 450 feet altitude. Certain high rocks here called the "Needles," give the station its name. Here we entered the great Mojave Desert, and after dinner at the "Needles" two powerful engines pulled us up to Barstow, Cal.

The ASSOCIATION train left the "Needles" at 7 o'clock P.M. June 3 and proceeded to Mohave, where it was turned over to the Southern Pacific Railroad. We breakfasted at Bakersfield June 4. A committee, consisting of Drs. Chas. Dennison, X. C. Scott and the editor, having collected money sufficient for the purpose from the passengers, who very cheerfully responded to their request, a souvenir to consist of a gold watch chain with a suitably inscribed medallion, was presented to Mr. J. M. Connell, the efficient and courteous agent of the Santa Fe line, who had accompanied us during the long journey.

The presentation speech of the editor, as near as I can remember it, was as follows:

"Mr. Connell: I have been deputed by my colleagues of the committee, to present to you, on behalf of the passengers of the ASSOCIATION train, this souvenir as a token of our appreciation of your untiring energy, your uniform courtesy and the care with which you have attended to our wants and endeavored to facilitate our progress.

"We have crossed mountains, traversed floods, and tackled the steaks of Bakersfield, and through it all you have done your best to reassure the timid, to encourage the wearied, and generally to assist us in every way."

Mr. Connell, in replying, seemed visibly affected by the unanimity of sentiment expressed by the passengers, but he distinctly disclaimed any responsibility for the Bakersfield steaks.

The Southern Pacific people pushed the train on its way with great rapidity, and we arrived in San Francisco about 4 o'clock, where some of the members of the Committee of Arrangements met us at the Oakland ferryboat. We found that Dr. Maclean's party had arrived a few hours before. Others by other roads arrived about the same time or a little later, so that it may be fairly said that the delegates from east of the Rocky Mountains were in San Francisco on the day before the meeting.

JOHN B. HAMILTON.

Letter from Europe.

PRAG, BOHEMIA, May 15, 1894.

To the Editor:—I have delayed writing until I had become fairly settled and sufficiently acquainted with the methods of work here to be able to give you in a few letters to the JOURNAL, as you requested, some idea of the methods of study in a German University and particularly some idea of what is being done in internal medicine. As I came abroad to do some practical work in pathology and clinical diagnosis, I shall not travel about from place to place to see different men, but shall remain at Prag until the end of the summer semester, the latter part of July. My letters may therefore be lacking in the interest that would come from change of scene and personages.

Prag is a wonderful mixture of the old and the new; it is a city of delightful surprises and of strange contrasts. Beautifully located in the valley of the Moldau, it has on the west a hill crowned by the venerable, imposing and historic Hradschin, the former capitol or citadel of the city, more than six hundred years old; on the east a hill, the Weinberg, covered with modern buildings, and with the gilded dome of the new Bohemian Museum shining in striking contrast to the somber gray spires of the old cathedral across the river. Crooked, narrow, mediæval streets bring one with a sudden turn into modern busy thoroughfares.

The mixture of the two races, the Germans or Teutons and the Bohemians (Czechs) or Slavs, does not, perhaps, seem as unnatural to one coming from a cosmopolitan city like Chicago or New York where one hears all languages, as to one coming from a city or town where practically but one language is spoken. But it does seem strange that after many years of commingling, the tendency of the two races to-day is to grow more and more separate. Of the three hundred thousand inhabitants of Prag about forty thousand are Germans. Their intelligence, industry and sobriety have given them more and more power until the Czechs view with alarm, or at least with envious jealousy, the riches, position and prosperity of their Teutonic neighbors. There is much bitter feeling between the two races, and one may find stores where only Czechish is spoken and this sometimes when the proprietors are able to speak the German language but where, unless one speaks Czechish one can not buy.

The University, the oldest in Europe, founded in 1348 by Charles IV., has two departments, a German and a Czechish. In medicine there are two faculties and two bands of students as distinct as two bodies of homeopathic and regular students. The hospital patients are divided, each faculty getting its proportion. This arrangement, now in vogue for eight years, seems to work well. Although the students mingle on the street and in the corridors of the hospitals common to both, there is apparently no clashing. I have naturally seen and heard only the German side and judge perhaps not impartially, that the medical work of the Germans is vastly superior to that of the Czechs.

The hospital buildings of the medical faculty show the

same striking contrast seen in other parts of the old town. Some of the work is done in buildings that must be hundreds of years old. The General Hospital was built in 1790 and enlarged about sixty years ago. It is far inferior in many respects to the more modern hospitals. It is being gradually remodeled, however. Thus I find that while the second medical clinic, that of Jaksch, has at its command several small, dingy old rooms, the first, under Pribram, has a pleasant, well-lighted amphitheater with nicely equipped rooms for the Professor and his assistants, a microscopic room, a bacteriologic room, etc., and wards that will compare well with those in more recently constructed hospitals. The Institutes of Anatomy, Pathologic Anatomy and Chemistry are all modern and leave little to desire in the way of construction and equipment. The Lying-in Hospital is also a large modern building. I shall try to speak later more in detail of these buildings and of the work done in them.

The fact that fine buildings are not necessary in order that good work may be done is well illustrated here. For instance, Jaksch in his not very inviting quarters has taught and studied so that now he is known over Europe, and America as well, as one of the leading authorities in clinical diagnosis. He feels, however, the need of better accommodations. He remarked to me the other day that probably nothing short of an epidemic of cholera where he was sure in his miserable quarters the death rate would be high, would induce the authorities to remodel or rebuild this portion of the hospital.

I was asked several times why I chose Prag in preference to some of the larger schools, such as those of Vienna, Berlin or Munich. The two names that drew me to Prag were those of Chiari and von Jaksch. I have not been disappointed in the men. And with the smaller number of students one comes very close to the professor and does not have to rely entirely upon assistants. These are not by any means the only strong men in the faculty. A faculty including, among others, such men as Huppert in chemistry, Hueppe in bacteriology. Hering in physiology, Rabl in anatomy, Gussenbauer in surgery, Rosthorn in obstetrics, is certainly one to be proud of.

In my next letter I shall try to speak more in detail of the work of some of these men. Very truly yours.

JAMES B. HERRICK.

A Correction.

PHILADELPHIA, June 4, 1894.

To the Editor:—In the discussion before the College of Physicians of the city of Philadelphia, on the registration of tuberculosis, on Jan. 12, 1894, I made the following statement: "Dr. Williams, of the Brompton Hospital, has been quoted as an opponent of the theory of contagion, but he has written a paper in which he shows that a large number of nurses of the Brompton Hospital have contracted tuberculosis. I think that he has traced some fifteen or twenty cases." Dr. Williams has since then called my attention to the fact that I misquoted his article, and a re-reading shows that this is true. In my speech I spoke from memory and entirely extemporaneously. The fifteen or twenty cases which I credited to nurses occurred among persons who had been employed in one capacity or another about the hospital and really only one case occurred in a nurse during her time of service. The time covered by Dr. Williams' investigation is thirty-six years. While I still believe that the conclusion which I meant to draw from Dr. Williams' paper, namely, that the experience of the Brompton Hospital can not be used as an argument against the contagion theory of tuberculosis, is correct, I deeply regret having misquoted his article in letter and most cheerfully make the correction. Dr. Williams contends that his paper "furnished only one case of consumption contracted during residence among the Brompton nurses, and that a doubtful one, in a period of thirty-six years." Respectfully,

LAWRENCE F. FLICK.

ASSOCIATION NEWS.

American Medical Association.—At the opening of the general session of June 8, Dr. Holton presented the majority report of the committee on the revision of the Code of Ethics.

The minority report was read by Dr. Didama. On motion of Dr. Scott, of Pennsylvania, the minority report was substituted for that of the majority, and on motion of Dr. E. Fletcher Ingals this was laid upon the table.

The Committee on Nominations of the AMERICAN MEDICAL ASSOCIATION presented the following list of officers for the ensuing year, which was adopted without opposition: President, Donald Maclean of Michigan; First Vice-President, Sterling Loying of Ohio; Second Vice-President, William Watson of Iowa; Third Vice-President, W. B. Rogers of Tennessee; Treasurer, H. P. Newman of Illinois; Secretary, W. B. Atkinson of Pennsylvania; Assistant Secretary, G. H. Rohé of Maryland.

Board of Trustees—J. T. Priestly, J. E. Woodbridge, W. Graham, I. C. Patterson, Joseph Eastman.

Judicial Council—D. W. Crowse, R. C. Moore, T. D. Crothers, G. B. Gillespie, W. T. Bishop, H. C. Hughes, J. I. Heilberger.

Annual Address on Medicine—W. E. Quine of Illinois.

Annual Address on Surgery—C. A. Wheaton of Minnesota.

Annual Address on State Medicine—H. D. Holton of Vermont.

Secretary Atkinson announced the election of the various Section Officers, as follows:

Physiology and Dietetics—E. H. Woolsey, of Oakland, Cal., Chairman; C. G. Cloddock, St. Louis, Secretary.

Surgery and Anatomy—J. Ransohoff, Chairman; R. St. Sayre, Secretary.

Practice of Medicine—E. W. Kellogg, Chairman; W. E. Quine, Secretary.

Neurology and Medical Jurisprudence—D. R. Brown, Chairman; W. J. Gavigan, Secretary.

Obstetrics and Diseases of Women—C. N. Martin, Chairman; O. Worder, Secretary.

Ophthalmology—Edward Jackson, Chairman; H. V. Würdemann, Secretary.

State Medicine—Liston Montgomery, Chairman; C. H. Sheppard, Secretary.

Laryngology and Otology—J. F. Fulton, Chairman; T. J. Gallagher, Secretary.

Diseases of Children—E. H. Small, Chairman; G. N. Michel, Secretary.

Materia Medica and Pharmacy—W. Helpsey, Chairman; G. F. Hanson, Secretary.

Dermatology and Syphilography—A. E. Regensburger, Chairman; D. H. Rand, Secretary.

Dental and Oral Surgery—M. H. Fletcher, Chairman; E. S. Talbot, Secretary.

Baltimore was chosen as the next place of meeting, and Dr. Chisholm was elected Chairman of the Committee of Arrangements.

The question of the JOURNAL advertisements was referred to the Judicial Council.

The revision of the Constitution and Code of Ethics was indefinitely postponed.

The reports of Drs. Wingate and Comegys, favoring the establishment of a National Department of Public Health, were indorsed by the ASSOCIATION.

Resolutions were adopted favoring the transfer of the ASSOCIATION Library to the Newberry Library, at Chicago.

The salary of the Treasurer was fixed at $300.

Resolutions on the death of Dr. John H. Rauch were adopted.

A resolution of thanks was tendered the retiring officers and the people of the Pacific Coast who had made the meeting a success.

PUBLIC HEALTH.

Decrease of Typhoid Fever.—Typhoid fever has decreased in Paris from 2,120 deaths in 1880 to 1,035 in 1886 and 533 in 1893, when the population was 2,350,000. Last year there were 676 deaths from disease in Chicago when the population was estimated at 1,600,000. The disease has, however, diminished remarkably in this latter city since 1891, when there were 1,997 deaths in a population of 1,322,000.

Alexandria's Water Supply.—The water supply of Alexandria is pronounced deplorable and a constant menace to the most important seaport town of Egypt. The defects, as pointed out by Koch in 1883, by Hobrecht subsequently, and now by Dr. Bilter, the Sanitary Inspector of the municipality, lie in the inadequacy of the filter beds; filtration exists only in name; bacteriologically the water is as impure after as before filtration, owing to the rapidity with which it is passed through the beds; each cubic centimeter of the so-called filtered water contains from 2,000 to 5,000 bacteria. The cause of the delay in applying the remedy is the usual one in Egypt—general bankruptcy and maladministration.

Leprosy in North America.—Based upon the statistics of the American Dermatological Association and of others, Dr. James Nevins Hyde reports that there have been 560 cases of leprosy in the United States, distributed as follows: Arkansas, 3; California, 158; Dakota, 2; Florida, 6; Georgia, 1; Idaho, 2; Illinois, 13; Indiana, 2; Iowa, 20; Louisiana, 85; Maryland, 4; Massachusetts, 5; Minnesota, 120; Missouri, 2; Mississippi, 2; New York, 100; New Jersey, 1; Oregon, 3; Pennsylvania, 6; Utah, 3; Wisconsin, 20. Dr. Hyde, while admitting that tuberculosis "exposes the health of our population to a greater danger than leprosy," nevertheless believes that the presence of leprosy in this country offers a constant menace to its inhabitants and "presents a problem in State and sanitary science which the general government alone can solve."

Contagion in Public Conveyances.—The *Boston Medical and Surgical Journal* calls upon the physicians in that city to discourage the use of public hackney vehicles for the conveyance of cases of contagious and infectious diseases to hospital, and cites the police regulation which forbids such procedure. There is a hospital ambulance for these cases, but the *Journal* admits, while urging physicians to its use, that there is no assurance against secondary infection traceable to the same ambulance being used for both scarlet fever and for diphtheria cases, and no assurance that the same pillows, mattresses and blankets are never used without precautions for more than one patient or that the ambulance is disinfected after each trip. However, this is a minor matter as compared with the menace to public health by the conveyance of infected persons in public hack vehicles.

Retrogressive Sanitary Legislation.—For nearly eighty years every town in Massachusetts has had its board of health to which the people had a right to look for sanitary protection—a board either elected as such or, in the event of failure to elect, then the selectmen of the town *ex officio*. A correspondent in the *Boston Herald* calls attention to the fact that, by the provisions of Chapter 218 of the Acts of 1894, this provision has been repealed so far as all towns having more than 2,000 inhabitants in each are concerned, and the voters in such towns may or may not elect boards of health as they see fit. The long-standing provision by which every town, no matter what its size, had its legally authorized board of health is now restricted to places of less than 2,000 population. This correspondent says: "Now it is nothing less than a sanitary axiom that increasing density of population requires the enactment of better sanitary laws for the protection of the people; and, since . . . this increase has been mainly in those towns which have a population of more than 2,000 in each, and not in the small towns, the legislation in this direction ought to be in the line of improvement and not of retrogression. Measures ought, to be taken therefore, to remedy this defect before the close of the present session."

The Much-maligned Sewer Gas.—At one of the general sessions of the recent Congress of American Physicians and Surgeons no less than three papers on sewer gas were presented and in two of these the innocuousness of the air of sewers was advocated. It is asserted that exact methods of investigation show that, as ordinarily found, it does not differ conspicuously from the air we are accustomed to breathe; that there is a comparative poverty of bacterial life in sewer gas—that, in fact, more disease germs are found in the air of houses and school-rooms than in the air of sewers; that there is no conclusive demonstration that sewer gas stands in causal relation to the diseases for which it has been held accountable; that the worse the odor of a sewer the less the danger of contracting disease from it—particularly diphtheria, etc., etc. A writer in a recent number of the *Pall Mall Magazine* confesses to a melancholy amusement in reading similar statements in the scientific journals of our "kin beyond the sea." He finds it grimly diverting to now learn, "after the hundreds of sanitary tracts in which the deadliness of sewer gas has been an axiom of faith, after the thousand-and-one deaths from it in the contemporary novel, that it may be welcomed without fear to our hearths and homes;" and opines that "we may yet live to see it manufactured artificially for the improvement of the public health, and conveyed to our overcrowded drawing rooms with all the paraphernalia of pipes and the mendacious meter."

Cholera in Mecca.—Notwithstanding all that we have been told of the sanitary precautions enforced with the Mecca pilgrims, it is announced that Asiatic cholera has again broken out in "the holy city." What this foreshadows the student of cholera literature can best appreciate. Some more radical measures than have yet been resorted to are obviously necessary to secure the world against the propagation and spread of this disease by the Mohammedan devotees. The Moulvie Rafiuddin Ahmad has contributed to the *British Medical Journal* his views on the subject, which are of more than ordinary interest as coming from a Moslem of the Moslems. He holds the British Government responsible for the redress of the following grievances: Overcrowding of pilgrim vessels; neglect of sanitary measures on the part of the authorities on board ship; absence of wholesome food and insufficiency of fresh water supplied to the pilgrim passengers; absence of suitable medical aid (Mohammedan lady patients can only be treated by female doctors, therefore every pilgrim ship must have one male and one female doctor, both understanding at least two Mohammedan languages of the East); absence of suitable lodgings and competent doctors at quarantine stations. He concurs in the opinion of those who have studied the subject, that the Sultan should appoint a commission to inquire into the following: The principal sources of cholera in the Holy Land; the burial of flesh and blood of animals sacrificed during the Hadji; the condition of latrines and drainage in general; the purity and sufficiency of water supplied to the pilgrims; the poverty of the pilgrims; the hardship imposed upon pilgrims by enforced quarantine; causes of sickness

upon pilgrim vessels; the condition of houses occupied by the Hadjees; cases of extortion and official despotism; the best means of protecting the property of the Hadjees; prevention of danger to the life and limb of the Hadjees; how to secure a safe and comfortable journey to the pilgrims. He declares that the pilgrims "ask nothing but the barest necessaries of human existence and the most essential rights of citizenship, namely, pure air, pure water, and security of life and property." He is discreetly silent as to the prospect of the British Government attempting to redress the grievances specified; points out that the expenses of the commission to be appointed by the Sultan must be defrayed by those interested in the sanitary improvement of Mecca and in its historic and religious features, since the Porte is in chronic financial straits; and makes an urgent appeal to the Sultan for his consent to the commission on religious and patriotic grounds.

MISCELLANY.

Mexico's Great Sanitary Undertaking.—It is announced by telegraph that on June 4, the civic authorities of the City of Mexico had entered into a contract for the completion of the great drainage works of the Mexico Valley. The estimated cost is $3,500,000. The work is to be done on or before May 1, 1896.

The N. S. Davis Chair.—Mr. William Deering, a wealthy Chicago manufacturer, has given $50,000 to the trustees of the Northwestern University, to endow a chair in honor of Dr. N. S. Davis in the medical department of the University —the old Chicago Medical College, of which Dr. Davis was the founder.

American Medical Editors Association.—The Association of American Medical Editors met at San Francisco June 8, and elected officers for the ensuing year as follows: President, John B. Hamilton, of Chicago; Vice-President, G. H. Gould, of Philadelphia; Secretary, H. B. Ellis, of San Francisco. The next meeting will be held at Baltimore during the session of the American Medical Association at that city.

The New York Woman's Medical College Commencement.—The "Blackwell institution" held her twenty-sixth annual celebration, with a graduating class of seventeen somber-robed lasses, on June 1. Mr. Robert Olyphant gave away the diplomas, the Rev. Dr. Bradley gave the address of warning to the graduates, and Dr. J. W. Roosevelt congratulated the Faculty on the exit of the class of 1894.

Sir James Paget.—On May 23, the eminent London surgeon celebrated his golden wedding-day. The General Medical Council of Great Britain, on that day, took the lead in presenting, through its president, a resolution of hearty congratulations to Sir James and Lady Paget respecting their half-century of eventful and happy wedded life. Hundreds of American physicians will join in the sentiment of congratulation and good will.

Localized Casualties.—Noting the statement of the *Medical World* that "we feel compelled to refer again to the poor woman who was shot in the oil regions some time ago," the *Medical Age* asks: "And why not drop a tear for the man who was fatally stabbed in the rotunda, and for him who was kicked on the highway?" whereupon the *California Medical Journal* recalls the case of the woman who was accidentally shot in the waterworks, and that of the man injured upon the long bridge.

Perils of Football.—The London *Lancet* has compiled a partial list of football casualties that occurred in England from October, 1893, to March 20, 1894. Ten deaths are recorded. The different British football games are considered. It concludes that: 1, football is dangerous; 2, contemporary changes have in some respects increased, in some respects lessened, the dangers; 3, probably no modification in the law (so as to arrest the dangers) would leave the game as good a one as it now is from the athletic point of view. A drastic code is advised, favoring a sweeping and inclusive definition of that growing evil, "professionalism."

Indecency in Photography.—"Medicus," in the *New York Medical Journal*, doubts whether photographic illustrations of anatomical and surgical phenomena exhibited by the human body convey as clear and instructive ideas of the conditions worthy of attention as may be conveyed by outline illustrations and drawings. But he has no doubt whatever, and the profession generally will agree with him, that if photography is to be employed at all in depicting the human body and its organs, decency requires that, even in medical publications, the scope of the photograph should be confined to the parts in which the phenomenon noted occurs; that the rest of the body, being unnecessary to the demonstration, be left out of the field, or be suitably covered up.

Billroth's Successor.—To bend the bow of Ulysses, says the London *Lancet*, is proverbially a difficult undertaking, and to succeed a Billroth in the chair he adorned is an object of ambition to which few indeed legitimately aspire. Still, the duties of that chair have to be discharged, and the Vienna school has just taken the primary steps to fill it. At a meeting of its medical faculty three candidates were nominated for the post: *Primo loco*, Vincenz Czerny, Professor of Surgery in University of Heidelberg; *secundo loco*, Karl Gussenbauer, Professor of Surgical Pathology and Therapeutics in the University of Prague; and *tertio loco*, Johann Mikulicz, Professor of Surgery in the University of Breslau. There is little doubt that the first named surgeon will be appointed.

An "Extempore" Operation.—Just one week after the official announcement of the perfect health of Kaiser Wilhelm II, as detailed in a recent number of the JOURNAL, that sensational sovereign submitted to an operation for the removal of an encysted tumor from the imperial cheek. It was gravely explained, soon after, that the incident was entirely fortuitous; Prof. Bergmann having through a misapprehension, appeared at a *fête* to which he had not been invited, the emperor, in order to put him at his ease, suggested that he should operate for the entertainment of the guests, volunteering, at the same time, to furnish the tumor. Later advices would seem to show that, for an extempore performance, there had been ample preparation made; Prof. Bergmann was assisted by Profs. Leuthold and Schlange.

Medical Instruction in China.—The first session of the European Medical School at Tientsin, under the auspices of the Viceroy, Li-Hung-Chang, gives gratifying promise of success in this effort to spread modern ideas of medicine in the Flowery Kingdom. There are in attendance a class of twenty-three Chinese students, selected by examination at Shanghai and Ningpo, all of whom speak English. The lectures are given in accordance with modern methods, except that there are as yet no cadavers available for dissection and anatomy is, therefore, taught by wax models. On the recommendation of the late Sir Andrew Clark, the direction of the school has been put in the hands of Surgeon-Captain Heuston, of the British Army Medical Staff, who has taken out to the school a complete outfit for its laboratories, which will be made equal to the best modern laboratories in every respect. The first cost of the school was about $24,000, and the income necessary for its maintenance is assured by annual contributions furnished by the native customs authorities of Chefoo and Tientsin.

Tramps and the Smallpox.—The tramp as a factor in the dissemination of the contagious diseases continues to be a subject of solicitude by sanitary authorities, not alone in

this country but abroad. A recent report by Dr. Armstrong the Medical Officer of Health for Newcastle-on-Tyne shows that of sixty-three towns in England, invaded by smallpox in 1892-93, more than one-half, 59 per cent., had the infection primarily from vagrants or tramps. In only nineteen out of the sixty-three towns was it reported positively that the disease was due to some other source, while subsequent infection by tramps occurred nine times in three towns, twelve, fifteen and eighteen times in one town each and no less than twenty-five times in the town of Nottingham. As a result of Dr. Armstrong's inquiries it is considered desirable: 1, that vagrants should be restrained in their powers of carrying infection about the country, especially during epidemics; 2, that they should be made to report their movements; 3, that they should, when considered requisite, be subject to disinfection and detention for such times as the sanitary authority of the district in which they are found may think necessary for the protection of the public health; 4, that in epidemic times all persons frequenting casual wards or common lodging-houses should be medically examined on admission; 5. that sanitary authorities and the police should have power to detain for medical examination any vagrant found in any public place.

Medical Missions at the "May Meetings" in London.—The great Church of England Society for Missions, depends largely upon its medical corps. At the "May Meetings" for 1894, the influence of medicine as a means to the end that is held in view by that Society was enlarged upon as never before. At one of the great gatherings held in Exeter Hall on May 18, the following statements were brought forth by the medical representatives there present:

"Dr. Herbert Lankester presented a report, in which it was stated that the first medical missionary of the Society was William Welton, a Suffolk surgeon, who was ordained forty-five years ago, and went to Foochow. Until 1870, however, they had only two unordained medical missionaries. Now they have twenty-five, besides one who was ordained, and one lady. These all had British qualifications, some being of the highest order. There were also medical men with native qualifications working in Palestine and the Punjaub. Until 1891 the Society only granted $500 for each missionary, who had to collect what more was needed. They now raise $5,000 among themselves. Rev. F. E. Wigram, who occupied the chair, said that opportunities for evangelizing the people were obtained by medical missions which could be got in no other way. Rev. Dr. Elliott said that he had spent six and a half years at Gaza, a most fanatical Moslem town, where other Christian work was forbidden, and he had been freely allowed to preach Christianity to his patients, whose numbers sometimes reached 180 a day. When he went to Gaza there was not another medical man, with either British or Turkish qualifications, in a population of 28,000. There were only quacks, *who beat girls black and blue for hysteria*, and gave as a panacea for serious fevers the water with which *the name of Allah was washed off a dish on which it had been written*. Scientific treatment came as a revelation to the people of all classes, and had a wonderful effect in breaking down prejudices. It was a remarkable fact that the Jews in Jerusalem braved the excommunication of their rabbis and went to the Christian doctors of the London Jews' Society, rather than to the hospitals amply equipped and freely opened by European Hebrews such as the Rothschilds."

Professor Czerny Succeeds Billroth: A Great Work Proposed.—Dr. Vincenz Czerny, of Heidelberg, Billroth's "most distinguished pupil," has been invited to the post of Lecturer on Clinical Surgery in the University. It is stated in the London *Lancet* that Czerny at first refused to take the chair, but afterwards consented on the proviso that the authorities would undertake to remove certain drawbacks, local and architectural, against which Billroth, with all his force and prestige, had long struggled in vain. Changes will be made by the demolition of old buildings and by the erection of a series of new buildings for medical and surgical instruction on the site that was identified with Billroth's career. Czerny's acceptance of the position has hinged upon the execution of plans little different from those that were the cherished aim of Billroth's maturer years; one of whose objects was the founding of a suitable museum of pathologic specimens accumulated by himself and his pupils in intestinal surgery and other preferred branches. These changes will in effect, be a kind of monument to Billroth, rendered possible by the fealty of his former associate to his, Billroth's, conception of what Vienna owed to the cause of surgery, if not to the master in his lifetime. The praiseworthy insistance of Czerny, as the *Lancet* remarks editorially, indicates the *esprit du corps* that has been observed again and again in the highest walks of science and the healing art of Germany, having for its recent and most effective parallel the animus disclosed by Pettenkofer on behalf of sanitary science. When he was asked by the civic authorities, says the *Lancet*, what best reward they could furnish him as a return for his sanitary achievements for Munich, Pettenkofer's reply was: "Build a sanitary institute." These great lights of Germany are zealous to make it easier for their successors to reach results than they have found it, even in the greater universities. While Billroth's efforts towards a higher standard of clinical facilities were frustrated in his own lifetime, Czerny will see to it that his master's ideals are in part at least, materialized without delay. Czerny himself will doubtless reap some of the advantage, from the important changes proposed, as well as the University, and science and the faculty of the future.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from June 2, 1894, to June 8, 1894.

First Lieut. EDWARD L. MUNSON, Asst. Surgeon, upon being relieved from duty at Camp Merritt, Mont., by First Lieut. WILLIAM H. WILSON, Asst. Surgeon, will proceed without delay to Ft. Yellowstone, Wyo., and report to the commanding officer, for temporary duty with troops in the National Park during the season.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending June 9, 1894.

Medical Inspector GEORGE A. BAIGHT, detached from U. S. S. "Newark," ordered home and granted three months leave.

Surgeon R. A. MARMION, detached from Smithsonian Institute, and ordered to the U. S. S. "Newark."

Medical Inspector D. MCMURTRIE, ordered to the Smithsonian Institute.

LETTERS RECEIVED

(A) Akins, William Thomas, Decatur, Ill.; Albright, J., Grand Rapids, Mich.

(B) Barnett, J. R., Neenah, Wis.; Berger, S. C., Philadelphia, Pa.; Bach, J. A., Milwaukee, Wis.

(C) Chicago Policlinic, Chicago, Ill.; Case, Isaac L., Burlington, Mich.; Cobb, M. B., San Diego, Cal.; Clouse, G. M., Columbus, Ohio; Cleaves, M. A., New York, N. Y.; Cone, Andrew, New York, N. Y.

(D) Dunn, Ira J., Erie, Pa.; Douglas, Richard, Nashville, Tenn.; Dow, E. S., Allston, Mass.; Dunglison, R. J., Philadelphia, Pa.

(F) French, Pinckney, St. Louis, Mo.

(G) Greene, Chas. S., San Francisco, Cal.

(H) Hummel, A. L., (2) Philadelphia, Pa.; Hanson, A. H., Chicago, Ill.; Hoffman, Joseph A., San Francisco, Cal.; Hammond, W. A., Washington, D. C.; Hoffstot, W. H., Beatrice, Neb.; Holdenstein, I., New York, N. Y.

(J) Jones, H. W., Danville, Ill.; Judkins, E. H., Portland, Me.

(L) Lippincott, J. B. Co., Philadelphia, Pa.; Labordine Chemical Co., St. Louis, Mo.; Loeb, H. W., St. Louis, Mo.; Ladd, C. W., Cannelton, Ind.

(N) Northwestern University, Evanston, Ill.

(P) Plummer, R. N., New York, N. Y.; Pantagraph Printing and Stationary Co., Bloomington, Ill.

(Q) Queen & Co., Inc., Philadelphia, Pa.

(R) Rush Medical College, Chicago, Ill.; Raymond, J. H., Brooklyn, N. Y.

(S) Smart, Chas., Washington, D. C.

(T) Tupper, P. Y., St. Louis, Mo.; Treat, E. B., New York, N. Y.; The Doliber-Goodale Co., (2) Boston, Mass.

(V) Van Vranken, G., San Diego, Cal.

(Y) Ybarra, A. M., Fernandez, New York, N. Y.

PAMPHLETS RECEIVED

Extra-Uterine Pregnancy Simulated by a Small Tumor of the Ovary; Operation; Recovery. By W. H. Morrison, M.D.

Sulphuric Acid Paste in the Treatment of Epithelioma of the Face. By E. Oliver Belt, M.D.

Observations on Four Hundred Cases of Anchylostomiasis. By F. M. Sandwith, M.D.

Congress of American Physicians and Surgeons. Third Triennial Meeting, Washington, D. C., May, 1894.

Enormous Oval Hemorrhoid Encircling the Anus; Whitehead's Operation; Entire Cure. By W. W. Keen, M.D.

Operation Wounds of the Thoracic Duct in the Neck, with a Résumé of Two prior recorded Cases and Two Additional Cases. By W. W. Keen, M.D.

Removal of the Gasserian Ganglion as the last of Fourteen Operations in Thirteen Years for Tic Douloureux. By W. W. Keen, M.D.

Catalogue University of Texas, (Medical Dept.) 1893-94.

Annual Report Board of Health, Winona, Minn., 1894.

Listerine—A few Chapters on Substitution. St. Louis: Lambert Pharmacal Co.

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ADDRESSES.

VACCINATION.

The Address of Section on State Medicine, Illinois State Medical Society, 1894.

BY WM. E. QUINE, M.D.

CHICAGO.

President Illinois State Board of Health; Professor of Practice of Medicine and Clinical Medicine, College of Physicians and Surgeons, of Chicago, and President of the Faculty.

Vaccination was introduced to the attention of the medical profession by Edward Jenner in 1798, as the result of twenty years of investigation.

During the century preceding, according to the estimates of our most authoritative statisticians, smallpox, "the most terrible of all the ministers of death," destroyed in Europe alone 50,000,000 human lives.

Think of it. Five hundred thousand deaths every year from the most loathsome pestilence known to man; thirteen hundred deaths every day; nearly a death every minute for a hundred years!

If it be true, as is believed by enlightened people the world over, that universal vaccination and re-vaccination, efficiently done, can put an end to the desolation and horror of epidemics of smallpox and possibly eradicate the disease altogether, it would appear that the discoverer of vaccination is the greatest benefactor that mankind has known.

Alexander was great. Cæsar was great. Hannibal was great. Napoleon was great. They were all great as destroyers. But what have they done; what have all the warriors and conquerors of earth done in comparison with this one member of the medical profession, in the direction of *adding* to the sum total of human happiness and human life?

Is it too much to say that wide-spread epidemics of smallpox are now entirely unnecessary in civilized lands? Is it too much to say that such epidemics are always the result of negligence, that they are always preventable, and that their occurrence is a crime against civilization for which the medical profession is largely responsible? Take a glimpse of what vaccination has already accomplished and then try to imagine the results of its universal, systematic and thorough employment by physicians whose highest conceptions of duty and most serious efforts relate to the prevention of disease.

During the epidemic in Marseilles in 1804, 8,000 unvaccinated citizens furnished 4,000 cases of smallpox, and 30,000 vaccinated persons furnished only 2,000 cases.

During the same year six negro children were vaccinated and then shipped aboard a vessel bound for one of the Seychelle Islands to perform quarantine service for smallpox. For three months the children were exposed to the contagion in every conceivable way. They slept under the same blankets with the sick and in contact with their pustules. They were inoculated again and again with the virus taken from those pustules and yet they continued in undisturbed health every minute of the time.

During the Franco-German war of 1870-71, the number of deaths from smallpox in the vaccinated German army was 261, and in the unvaccinated French Army it was 23,469.

In Berlin in the year 1872 the mortality of the disease was 243 per 100,000 population and the year after it was 262. Thereupon vaccination during the first year of life and re-vaccination at the age of 12 years was made compulsory by law,—and with the effect that in the year 1875 the death rate was lowered to 36 per 100,000 inhabitants; the next year it was lowered to 31; the next to 3; and so on through later years with an average annual mortality of one and seven-tenths per 100,000 people. During the year 1890 only fifty-eight cases occurred in the whole German Empire, or one and eighteen-hundredths cases to each million of population.

A village in Leicestershire (England) of 1,300 inhabitants was visited by the pestilence in 1872. All but two of the inhabitants were efficiently vaccinated and escaped the disease; whereas the two unvaccinated persons died of it.

The late Dr. J. H. Rauch, for many years Secretary of our State Board of Health, has shown that in the Illinois epidemic of 1881-83, the mortality rate of the vaccinated was approximately 6 per cent. and of the unvaccinated it was 49 per cent.

Corbally has demonstrated that, in the Sheffield (Eng.) epidemic of 1887-88, vaccinated children were, as compared with the unvaccinated, twenty times less liable to attack from smallpox and twenty-four times less liable to die when attacked. That is to say, the vaccinated children had, as compared with the unvaccinated, four hundred and eighty fold security against death from smallpox.

In the Halifax (Eng.) epidemic of 1892-93, the death rate from smallpox among vaccinated persons was 1.8 per cent. and among the unvaccinated it was nearly 41 per cent. No case occurred in a vaccinated child under 5 years of age and in the Leicestershire epidemic of 1893 no case occurred in a vaccinated child under 10 years of age.

From the records of 5,000 cases treated in the Municipal Hospital of Philadelphia, (W. M. Welch, in the *New York Medical Journal*, March, 1894) it appears that the death rate in that institution in post vaccinal cases,—and all in which there had been an attempt at vaccination are included,—was 16.26 per cent.; and the death rate in the non-vaccinal cases was 58.38 per cent. Seventy-three per cent. of the cases in unvaccinated infants under one year of age ended in death and no fatal case occurred among vaccinated infants of the same age. Between the ages of 1 and 7 years the mortality of post vaccinal

cases was 5.7 per cent., and of non-vaccinal cases it was 51.5 per cent.

In Chicago only seventeen cases of smallpox have occurred in the last fifteen years among the well vaccinated public school children of that city whose average number exceeded two hundred thousand.

The foregoing are a few illustrations of the utility of vaccination. I could easily occupy your time for hours with statistical quotations from standard authors, for thousands of pages of authentic medical literature are teeming with illustrations of a like kind; but longer continuance on this line of exposition would be wearisome and it could serve no other purpose than that of emphasizing what has already been demonstrated. Physicians everywhere have encountered striking examples of similar bearing; and, as individual experiences may make a more intelligible impression on some minds than any aggregation of figures, I make free to include a few of them.

From numerous memoranda furnished by my friend, Dr. A. R. Reynolds, Health Commissioner of Chicago, I select the following at random:

1. A mild case of smallpox ended in recovery. In the family were five vaccinated persons and five unvaccinated. Every one of the vaccinated persons escaped and every one of the unvaccinated contracted the disease.

2. A non-vaccinated child 5 years of age developed the disease. The family included eight other children and the parents. Five were vaccinated and six were not. Of those vaccinated one contracted mild varioloid—the others escaping; and of the non-vaccinated every one developed confluent smallpox.

3. A case of smallpox in Pullman, regarded by the attending physician as one of chickenpox, ended in recovery. About twenty-five persons were exposed, all of whom except three were vaccinated. These three contracted the disorder and two of them died. Of those tardily vaccinated one died of smallpox and three recovered from varioloid. The one who died was the doctor who made the mistake in diagnosis.

If I were addressing an exclusively medical audience I should feel ashamed of appearing to think it necessary to cite proofs of the efficiency of vaccination as a life-saving device, since nothing in the whole domain of human experience is more clearly and strongly established than this. Intelligent physicians everywhere are well aware that liability to smallpox is enormously lessened by vaccination, as is liability to death when smallpox actually appears.

When shall Vaccination be Done?—In view of this fact it would seem that the protective influence of vaccination can not be invoked too early in life. Smallpox is a disease of infancy and childhood. Children are more liable to contract it than mature adults and when they do contract it they are more likely to die; hence there is imperative reason why they should be vaccinated soon after birth. In some countries this is made compulsory by law. Physicians the world over, urge that vaccination be done during the first year of life and when smallpox is prevalent they demand that it be done within the first three months of life. If there be certainty, or even strong probability, of the exposure of the newborn to the contagion, it should be thoroughly vaccinated immediately after its birth.

How Soon after Vaccination does Protection from Smallpox begin and When does it become Perfect?—This is a very important question for it frequently happens during an epidemic of smallpox that an exposed and susceptible person has the opportunity to watch, in his own life, a race between the protective power of vaccine lymph, tardily inoculated, and the infection of pestilence which had gained entrance to his body. Protection begins about the fourth day after efficient vaccination and is perfect on the eighth or ninth day. On the other hand, the incubative period of smallpox is ten or twelve days,—say ten days. By "incubative period" is meant the time intervening between exposure to contagion and the appearance in the individual of the evidences of the resulting disease. The period is not uniform as the poison or contagion may linger in the clothing for some time after the exposure occurred and its absorption be delayed. It is obviously the part of prudence to regard the minimum period of incubation,—ten days,—as the period likely to obtain in any given case. Accepting this as a fact and remembering that the protective influence of vaccination begins on the fourth day and is perfect on the eighth, it follows that a person may be protected from smallpox even a couple of days after he had been exposed to it by efficient vaccine inoculation. If vaccination be well done within forty-eight hours after exposure, the exposure proves harmless; if it be delayed till seventy-two hours the victim is likely to develop varioloid; and if it be delayed till ninety-six hours it makes little or no impression on the consequences of that exposure.—(Trousseau).

How long does the protective power of thorough vaccination last? The term is different in different individuals. Many can be successfully vaccinated but once in a lifetime, and others can be successfully vaccinated again and again. In the great majority of cases one attack of smallpox confers immunity for the remainder of life; but there are individuals who have the disease again and even die of a second or third attack. The degree of protection against smallpox conferred by vaccination gradually diminishes in most persons, until approximately the original liability to the disease is finally re-established. One could not reasonably expect greater protection from an attack of cow smallpox (*i. e.*, vaccinia or vaccination) than is conferred by a previous attack of human smallpox, and since a person may have a second or a third attack of human smallpox, it is not surprising that he may die of human smallpox after he has been thoroughly inoculated with the cow smallpox and exhibited the characteristic manifestations of that disease. The longer the interval since efficient vaccination the less is the protection conferred by it. We have already learned that it is extremely rare for a well-vaccinated child under 10 years of age to develop smallpox, and that when the disease does appear it is almost invariably of the modified and mild type known as varioloid. However, it is well known and important to keep in mind that any severe sickness, such as typhoid fever, is liable to greatly impair the protective influence of vaccination, even to the extent of destroying it altogether. It is maintained by some of the most authoritative writers of the day that there is not a single case of smallpox, of authentic record, as having occurred within a period of seven years after a typically successful vaccination. This conclusion does not preclude the propriety of universal re-vaccination every time the smallpox becomes obtrusively prevalent.

The problem that confronts us is, not how few vaccinations can be gotten along with, but how to employ the benign measure so as to escape liability to smallpox with infallible certainty. Vaccination and revaccination, efficiently and frequently done, is the only known means of securing absolute immunity; and if the practice of efficient vaccination and revaccination ever becomes universal, then human smallpox will become a thing of tradition and history. Every person should be carefully and thoroughly vaccinated at least three times—during the first year of life; about the time of puberty; and again between the ages of twenty and thirty years. If this be done, and well done, the individual will have good protection for life; but let me repeat that another vaccination is always proper, and on the side of prudence, whenever smallpox becomes extensively prevalent.

Abortive and Worthless Vaccination.—Vaccine lymph is a very perishable substance and rapidly deteriorates on exposure to a warm atmosphere. This is particularly true of the bovine lymph furnished on the bone "points" now in universal use. The lymph or "virus" may be of good quality when purchased, but after it has been carried in the vest pocket a few days it is liable to be worthless. Formerly, propagators and dealers took the pains to protect the "points" from the air by a covering of cotton batting and rubber tissue; but this is rarely, if ever, done now. The absence of reasonable evidences of care in the collection and preservation of the lymph is in pitiful contrast with the magnitude of the interests involved. The only propagators in this country who take any pains at all to protect the "points" from the atmosphere and from unnecessary handling—hence, from liability to contamination—are those of the "National Vaccine Establishment," of the District of Columbia.

However, it is asserted by high authority (Pepper) that, in times of active demand for virus, propagators have been guilty of applying irritants to the sores on the udder of the heifer with a view to increasing the product. The sero-purulent discharge resulting from such applications was used to coat the bone "points" and the latter were then foisted upon the profession as pure bovine virus. And this is not all. I feel certain that dealers sell, at times, points that have been prepared by dipping the pieces of bone in an aqueous mixture of bovine scabs. The granular and dirty appearance of such "points" is plain enough to evoke instant attention and condemnation. In view of these considerations, is it difficult to understand why bovine lymph is unreliable and why, now and then, unpleasant and unnecessary complications attend the use of it? If bovine lymph were collected and preserved with such admirable care as obtained with humanized lymph when every doctor propagated and preserved his own supply, there would be greater uniformity of effect and the reputation of vaccination would be less frequently marred by "accidents." Every "point" of bovine lymph is an experiment. A susceptible person may be inoculated repeatedly without any effect whatever—and particularly without the effect desired. Commissioner Reynolds informs me of a person who had been unsuccessfully vaccinated *thirteen times*. The fourteenth attempt yielded a perfectly typical result. Can you not understand, then, how a person who has been "vaccinated" may readily contract smallpox when exposed to it? It is easy to comprehend the "insusceptibility" to vaccine lymph which many persons claim. Apparent "insusceptibility," when not due to a previous attack of smallpox or to a previous genuine vaccination, is due, in probably every instance, to worthless virus or to the careless and incompetent use of good virus. Carelessness on the part of the doctor is responsible for much damage to the effectiveness and reputation of vaccination.

The operation is so simple and familiar and so generally successful and free from unpleasant intrusions of any kind, that it is habitually performed in a perfunctory or indifferent manner. In many instances the doctor does not learn whether it has been successful or not. In many instances he certifies that a school child is well protected against smallpox, without having examined the child at all or knowing anything about its vaccinal condition. In some instances a person is practicing as a physician who does not know a normal vaccine sore from a spurious one—a typical scar from an atypical one—success from failure.

In order that vaccination be effective it is essential that it be normal in every respect. When the arm gets to be enormously swollen, and very painful, and the patient very ill in consequence; or when a slough has formed and, separating, leaves a large suppurating ulcer which heals slowly and makes an ugly scar; it is commonly assumed by the uninitiated that the vaccine virus has taken with admirable vigor and that the fortunate individual is exceptionally well protected; whereas, in fact, the vaccination is spurious and may confer no protection whatever. The process of development of the vaccine sore and the scar following, constitute the basis of a rational opinion as to the efficacy of the vaccination. A typical scar may be accepted as a proof of good vaccination. Such a scar may preserve its characteristics throughout life or it may fade away. It is often impossible, after the lapse of years, to tell from the appearance of the scars whether the vaccination had been a success or a failure. Thousands of persons who rejoice in the possession of large and deep scars have no protection at all against smallpox; and if they contract the disease and survive it they are found on exhibition ever after as living proofs of the inutility of vaccination. But some of them do not survive. Nearly half of them die. Are we of the medical profession guiltless in such cases? No, sir! We are guilty of trifling with human life and of bringing into disrepute by reason of our carelessness and lack of appreciation of the magnitude of the issues, one of the most beneficent and harmless of the measures of protection vouchsafed to our race. Every doctor is perfectly satisfied with the completeness of his knowledge of the subject and yet how many would be able to sustain themselves creditably in debate with a well-informed anti-vaccinationist? We are so well satisfied with what we know that many of us never read a page on the subject in all our lives. And yet what is there in medicine or surgery that has the life-saving power of vaccination? Is this an unimportant measure, or is it one of the finest applications of biologic science? Our young graduates have been thoroughly instructed in appendicitis and in intestinal anastomosis but they do not know a typical vaccine sore from an example of pemphigus.

Fortunately, however, the epidemic of appendicitis

is on the decline and our teachers may be able to find time to say a few words about vaccination.

It is not sufficient that a person be vaccinated; he must be thoroughly vaccinated. It appears highly probable from the statistics of Marson, Simon, Trousseau and Welch that one point of vaccine inoculation does not confer as reliable protection upon the individual as do two or more points of inoculation. In view of the unreliability of the bone "points" of bovine virus in common use, the imperative necessity of using two or more of them on each person vaccinated is obvious. In Europe, vaccination is done with much greater thoroughness than is the rule in this country. There they vaccinize. We vaccinate. They take pains to saturate. We do not. When they get through we find three or four scars on each arm. We are through when the patient has two scars. In view of these various facts is it surprising that we have an outbreak of smallpox every few years? The subsidence of an epidemic lulls us into the negligence of fancied security; spurious vaccinations mislead; the immunity conferred by genuine vaccination, dwindles away; children are not vaccinated till they reach the school age and many are not vaccinated then; a case of smallpox is imported and lo! another epidemic appears. How many lessons of this kind are necessary to arouse the medical profession to a proper sense of duty and the community at large to a common sense appreciation of the demands of self-protection? The experience of the world has demonstrated again and again with terrible impressiveness that so long as unvaccinated children are allowed to accumulate, and so long as people continue to neglect renewal of immunity by revaccination, epidemics of smallpox are certain to make their appearance. Such epidemics are a hideous disgrace to civilization. The disease is preventable. It is eradicable. And yet I question if a particle of progress has been made in the direction of eradicating it from our country during the past quarter of a century. We do just as our predecessors did—vaccinate furiously when smallpox becomes, or threatens to become epidemic, and then neglect vaccination till the next epidemic arrives. Carelessness is growing and the results of it are multiplying. "In England and Wales where there is a law requiring vaccination in the first year of life the number of unvaccinated children over one year of age has been steadily increasing of late years."—*British Medical Journal.*

Dangers and Complications.—"It is estimated by competent authority that 22,000,000 people are vaccinated annually."—(Pepper.) The course of a normal vaccination extends over a period of three weeks and every derangement of health within that time is likely to be ascribed to impure lymph. It is obvious that among 22,000,000 people a great deal of sickness is certain to occur every day quite independently of vaccination. But it is not denied that vaccination is responsible for some of it. In view of what has already been said about errors—if that is the right word to use—in the collection and preservation of virus, some admissions at the present time would have, not only the merit of truth, but the charm of logical continuity. My friend, Dr. Gehrmann, of Commissioner Reynolds' staff, has examined a great many "points" microscopically and found pus and pus-producing microbes (staphylococci) on nearly every one of them, to say nothing of microbes of other kinds from atmospheric contagion.

Erysipelas.—This is the pest of vaccination and the cause of the only fatalities that have come within the range of my investigation. When it appears within twenty-four or forty-eight hours after the inoculation, and especially if the vaccinal abrasion was made with the bone point, it is almost certain that the erysipelas is due to streptococcus infection of the "point;" but if the appearance of the complication be delayed much longer than twenty-four hours it is probably caused by infection of the abrasion from other sources. The skin, clothing and atmosphere are always contaminated with pyogenic microbes, and various other kinds as well, under ordinary circumstances of city life; but there is no doubt in my mind that erysipelas results much more frequently from the use of carelessly collected and distributed bovine virus than it did in years gone by from the use of *carefully* collected and preserved humanized lymph. But the fatal objection to the use of humanized lymph—its liability to contamination with syphilitic virus—does not apply to the product of the heifer, since the human species enjoys—no, it does not *enjoy*, but it possesses—practical monopoly of the venereal diseases—a gonococcus and a coccogonus trust. With the single exception of syphilis, vaccinal complications are more common to-day, I believe, than ever. Inflammation of various kinds and degrees, from a simple erythema to an intense phlegmonous process, gangrene and septic pyemia, occur in rare instances—but they are by no means as rare as they would be if propagators, dealers in and users of bovine virus were alert and actively conscientious in the discharge of duty. A little tenderness and swelling of the axillary glands, rarely advancing to suppuration, now and then mars the course of normal vaccinia, but it is a transitory and unimportant affair. Here and there a physician is heard speaking loosely but positively of the liability to inoculate tubercle bacilli with bovine lymph. So far as I have been able to learn, tubercular infection has never been known to result from vaccination. Conceivably, nay, undoubtedly, a latent tuberculosis of neighboring lymphatics may be aroused into active progression by the process of normal vaccination—or cow smallpox—as it may be by any other process of local irritation or constitutional derangement. The popular prejudice against vaccination, based on the knowledge that constitutional diseases *have* been inoculated with contaminated lymph, has stimulated scientists to attempt to cultivate the lymph—or the essential ingredient of it—on artificial media; but without the slightest show of success. Six cases of tetanus are charged against it—to say nothing about skin eruptions of various kinds. The flippant readiness with which *post hoc, ergo propter hoc*, arguments are used against vaccination by ignorant and prejudiced persons, is well exemplified in the testimony offered during a recent trial in Terre Haute, Ind., where the principal of a public school had been enjoined from enforcing the order of the local Board of Health to exclude unvaccinated children. A venerable and well-preserved anti-vaccinationist, 70 years of age, testified that he had been vaccinated sixty-eight years ago and had been struggling against the evil effects of it ever since. Poor old man! True, he had never died of the smallpox, and never had had the disease at all; but there is no telling how old he would be now, if he had not been vaccinated. Another witness testified that he had been vaccinated on

the arm and six years later a running sore made its appearance on his leg. Yes, sir! On his leg! Spread the knowledge of the contaminating and bestializing effects of vaccination and let organized resistance be strengthened!

Every physician of large experience has seen vaccinal complications of various kinds; but it is extremely rare for death or permanent injury to result from them. A fair idea of the actual danger may be obtained from contemplating the following facts: Since Jan. 1, 1894, Health Commissioner Reynolds, of Chicago, has supervised 320,000 vaccinations, and two deaths have been *ascribed* to the inoculation of impure lymph—or to a complicating infection of *some* kind. Dr. O. C. De Wolf, former Health Commissioner of Chicago, reports 250,000 vaccinations without a seriously hurtful consequence of any kind. The late Dr. J. H. Rauch, for many years the efficient and honored Secretary of our State Board of Health, testified before the Royal Vaccination Commission of England that during the smallpox epidemic in Illinois during the years 1882–83, he had conducted and supervised 250,000 vaccinations, and had never seen or known of a more serious complication or sequel than temporary inflammation of the axillary glands and now and then a sluggish, slowly healing ulcer on the arm. I estimate that the family physicians of Chicago have vaccinated as many persons, probably, as have been vaccinated by the assistants of the Health Commissioner. The aggregate number exceeds a million—and there have been two *allegcd* deaths. This represents the dangers of vaccination when done in reckless haste and carelessness—or, at least without the slightest pretense of attention to precautionary details. Assuming that such fatalities are unavoidable—but they are not unavoidable; they are the result of criminal carelessness somewhere—and contrast the smallness of the danger with the magnitude of the protection. A recent report of the Local Government Board of England shows that unvaccinated children under 10 years of age are twenty times more liable to take smallpox and twenty times more liable to die when they do take it, than vaccinated children of the same age. It also shows that unvaccinated persons over 10 years of age are five times more liable to take smallpox and twenty times more liable to die when they do take it, than vaccinated persons of the same age; their life prospects during an epidemic of smallpox being rated as ONE to FIFTY-FIVE.

I have said that fatal complications are avoidable. The fact that only two cases of the kind have occurred in over a million vaccinations is proof enough of that. If further proof were needed it would be found in the official Governmental reports on vaccination in Germany which show that in the year 1890 there were 2,485,485 vaccinations in that Empire without a single fatality.

Accidents are not an argument against vaccination but they are an argument against the careless performance of vaccination. There is not a single instance in the whole history of the human family of a person, previously in good health, being killed or seriously injured by inoculation with pure vaccine lymph. Complications result from the use of contaminated lymph or from the use of scabby or purulent substitutes; and the propagators and dealers are largely responsible for the bad results. It must be admitted in this connection, however, that the bone "points" may be genuine and pure when they leave the hands of the propagator and that contamination may result from subsequent handling and exposure to the atmosphere. It must also be admitted that infection of the vaccinal wound may result from the unclean skin and clothing of the individual and from exposure to the atmosphere. We have already learned that pus producing germs are well-nigh everywhere—on apparently clean skin, on spotless clothing, and in apparently pure air; and they, not to speak of other germs, are liable to invade a vaccinal wound even when some attempt is made to exclude them, and any attempt to exclude them is not made once in a thousand times.

The means of protection against accident are well understood by every intelligent physician. We must have pure lymph to begin with and it must be protected from atmospheric and contact contamination by being kept hermetically sealed until brought into actual use. The skin of the patient and the hands of the doctor must be clean—in the surgical sense—that is, free from microbes. When the vaccinal abrasion is made and the moistened lymph on the bone point rubbed into it, the abrasion is to be properly covered with an aseptic dressing so as to exclude hurtful germs. These measures will be regarded by the multitude as somewhat fantastic and unnecessary; and by our local political economists—the barroom politicians—they might be "viewed with alarm." The employment of such measures would make public vaccination five to ten times more expensive than it now is. Assuming that it would take fifteen minutes longer to vaccinate this way, than it does the familiar way; and applying the assumption to the 320,000 vaccinations of the Commissioner of Health, what do we find? Quarter of an hour consumed by each person; 80,000 hours by the 320,000 persons. Ten hours a day's work; 8,000 days—over twenty-five years. Our city vaccinators get $900 a year; $22,500. Now, assuming that every bone point had been perfectly pure, and vaccination had been performed aseptically at a total expense of $22,500; the two lives alleged to have been destroyed by careless methods would have been saved. If propagators supply us with pure lymph, protected from the air and from unnecessary handling, vaccinal complications will become so rare as to be classed among the curiosities of experience.

Anti-Vaccinationists.—Organized resistance to vaccination is much less formidable in our land than it is in England and Wales; and it is interesting to note that much of the opposition discovered in this country comes from people of the lowest grades of intelligence and character who had been compelled to submit to vaccination laws in their native home. "They are agin the government." But their fantastic and disorganizing conceptions of "personal liberty" do not put them beyond the reach of reason; on the contrary, they are readily responsive to a fair presentation of the subject. A few resist vaccination because they prefer not to be inconvenienced by it. They are "not afraid of smallpox," you know. But the genuine anti-vaccinationist is the person of incomprehensible mind who goes by the name of "freak." He is, in some instances, a citizen of education, position, refinement and influence, whose reasoning powers are dominated by a prejudice against vaccination which amounts to positive abhorence and loathing. He is ready with *post hoc* arguments, false statements and factitious statistics and

is a pestiferous nuisance and an impediment to sanitary progress. He founds "anti-vaccination societies." He gets on school boards for no other purpose than to resist vaccination ordinances. He enjoins sanitary officers and makes us feel like vaccinating him with a pistol. He is at the aggressive end of lawsuits now in various parts of New York, Pennsylvania, Ohio, Indiana, Iowa, Illinois,—doubtless in other States. There are people who profess to regard smallpox epidemics as processes of wholesale purification, beneficent visitations of Providence. Vaccination they denounce as bestializing and as being on the one hand, incapable of any good to the human family, and on the other, as being responsible for multifarious and hideous ills. They do not know that "vaccinia," "cow pox," "cow smallpox," *is human smallpox* modified and mitigated by transit through one of the cleanest of God's creatures,—whose milk they drink and whose flesh they eat, every day.

Compulsory Vaccination.—It is easy to understand the need of laws, or of adequate provision of some kind, for the protection of communities against the consequences of habitnal inattention and of organized opposition to vaccination. Such laws do exist in nearly all the European countries and in Japan, Egypt and Manitoba; but in most countries the laws are not only inherently inadequate but inefficiently administered as well. In England, the birthplace of vaccination, where the law requires infants to be vaccinated during the first year of life and makes no provision whatever for re-vaccination, the number of unvaccinated children under one year of age is steadily increasing from year to year. In Germany the law compels vaccination during the first year of life and again at the age of 12 years; and soldiers, on entering the army, are again vaccinated without reference to their previous vaccinal history. These laws have been in operation since 1875; and when I say that there has not been a death from smallpox in the German army since the year 1874 and that the death rate from this disease for the whole German Empire is only *one and seventeen-hundredths* per each million inhabitants; and when I add that 2,485,485 vaccinations were performed without a single fatality; there is no need of any other argument.

In this country there are no compulsory laws. In many States there is provision for excluding unvaccinated children from the public schools; and in some of them punishment for non-compliance with the law is prescribed. But there is no law which compels vaccination. In our own State, unvaccinated children are denied the privileges of the public schools; but, if school directors happened to be anti-vaccinationists and refuse to enforce the law there, is no provision for compelling them to do it or for punishing them for not doing it. *But the State Board of Health can close the school.* These school laws are vigorously resisted in many quarters and two suits are now pending in Illinois. Such contentions invariably eventuate in the defeat of the enemies of vaccination. In every instance the State Board is willing to relieve local authorities from the responsibility of enforcing the law and of defending litigation growing out of such enforcement. This is not compulsion for it leaves to everybody the liberty of choosing; but it is more effective than the compulsory laws of several European governments.

A similar force, yet short of actual compulsion, can be brought to bear by State and local sanitary authorities upon employers of labor and in favor of the vaccination of their employes. Railroad corporations promptly supervise the vaccination of their employes when required to do so by competent authority; *for every train can be stopped at the State line for purposes of inspection* on the order of such authority. And when it is remembered that in times of wide-spread pestilence a system of universal inspection and disinfection can be brought to bear upon manufacturers and merchants everywhere, and can even be carried to the extent of destroying their goods in case of refusal to comply with reasonable precautionary demands, it will be readily seen that the absence of compulsory laws is not a matter of much consequence. This kind of coercion is less offensive and hardly less effective than statutory enactment would be; and under some circumstances the employment of force would doubtless be sustained by public opinion if not by the law.

It is a crime to destroy the property of another without reason; but to destroy a building in order to arrest the progress of a fire is consistent with good sense and good citizenship. Similarly when smallpox becomes prevalent, and its prevalence extends so rapidly as to threaten the safety of a city, a State or a continent, there are not many people in the world —certainly not many in the medical profession—who would stop to listen to a dissertation on personal rights before vaccinating a person known to have been exposed to the contagion of the disease. Vaccinate first and listen after.

The duty of the hour is plain. Educate. Educate the medical profession to a proper appreciation of the demands of duty, so that every physician shall feel compelled by the mandates of professional honor to vaccinate and re-vaccinate everybody who looks to him for guidance and protection. Educate medical students so that they shall be able to wield the weapons of protection with maximum skill and effect. Educate health boards so that they shall administer sanitary laws, not paroxysmally nor excitedly, but continuously, steadily and sensibly every day in the year. Educate school teachers by courses of instruction in hygiene at "teachers' institutes." Educate school children by including in their studies the subject of personal hygiene. Educate the community through the press and by public utterance. Educate the conscience of propagators and dealers in vaccine lymph so that they shall furnish a product that is free from extraneous infection. That is the duty which confronts us now—if the glory and the boast of our profession be founded on truth—that its highest aim is the prevention of disease.

AMERICAN MEDICAL EDITORS' ASSOCIATION.

ADDRESS OF THE PRESIDENT, C. H. HUGHES, M.D.

ST. LOUIS, MO.

Fellow Cranks:—As you accepted the term kindly last year in the East, when we were assembled around the board in the "Arlington" at Washington, so I re-apply it here in the West at the Golden Gate in this festal hall of the Palace of the Occident.

Fellow cranks: I congratulate you that the revolution of the wheels of time has brought us to this goodly place, and that the cranks still go with the wheel, for from what we already know of California

and the Californians we have promise of a lively time here in San Francisco. We are going to see all the sights of Chinatown, and Benicia Bay, and the Golden Gate, and the seals of Seal Rock, and the Garden and the Midwinter Fair and last, but not least, the bright eyes and handsome faces of San Francisco's warm-hearted and beautiful wives and daughters whose qualities of head and heart have done so much to make the men of San Francisco what they are—the noblest hearted and most manly men of the Pacific Slope,—as good as any crank in this crowd and that is paying them the highest of compliments, because we are all jolly good fellows and not the sickly kind of kranks (spelled with a k) that some folks take us to be, but cranks spelled with a capital C, that turn the tides in the affairs of men, move the wheels of medical advance and likewise help to make the wheels of commerce revolve by keeping men in condition always to get a move on and to make things lively. Why if it were not for the editorial crank, medical, financial, commercial, professional, manufacturing and mining, the gods of this world would cease to grind their daily grists and their little bells would cease to jingle.

The world's theological, moral, political, scientific, hygienic and therapeutic battles are largely fought by the press. We are the fighters who believe with Darwin in the survival of the fittest, but we differ from him in advocating the *ascent* rather than the *descent* of man. We are the "Benicia boys" and "Corbetts" that have the ring all to ourselves. It is our business to boost business, to elevate and advance the world's medical and sanitary interests and thus to promote its general welfare. In doing so, we elevate ourselves and we feel elevated to-night, not only because of our calling, but also on account of the excellent and highly spiritual company we are in. The influence of an occasion like this is always elevating to medical editors and they take kindly to this kind of elevation. We do not have to sing: "The wine cup, the wine cup bring hither," for it is already here. In fact it is always handy in a company of Californians or an occasion like this. In regard to their hospitality, we may truly express the hope that "the wreaths they have won may never wither," nor "the star of their glory grow dim." These are my sentiments; our sentiments, are they not, gentlemen? So say we all of us.

Gentlemen, I am heartily happy to be with you to-night, because you are all good fellows, brainy fellows, and my specialty in the world's medical work is brains and I may say, confidentially, I have not mingled with so brainy and brilliant an assemblage since over twenty years ago, I surrendered the superintendency of the Missouri State Lunatic Asylum. Gentlemen, I dote on brains. I adore brains. Brains and a full purse move the world. Archimedes would have needed no other lever.

My especial occupation is to treat brains and advise men how to care for them. We live in an age when vigorous brains are really of great value in the affairs of men, notwithstanding the marvelous success of some men in making money would seem to indicate that this article was unnecessary. My friend, Dr. J. T. Searcy, of Tuscaloosa, Ala., seems to regard brains as very essential to success in life, as may be seen from his recent address on the secret of success before the students of Alabama Medical College at Mobile. But he also got the best of his experience as to the value of brains in a hospital for the insane, and brains are really a very useful article in such institutions. He talks very learnedly and entertainingly about the phylum, the mother's phylum, the father's phylum, the hereditary phylum and their influence on the brain ascendency and degeneracy of man.

But here is the way he talks, and he is right sensible for an Alabamian, and it is a rule with me that whenever I can get a sensible man to think and talk for me, I prefer to speak by proxy.

He says: "Anything and everything that in any way injures brain structure or injures or impairs its functional activity, just so much impairs the man's ability to succeed and excel and to 'live properly.'

"There is no question in which we are more interested than in the functional capacity, and the structural integrity of this 'nerve center' within us. Our safety, our survival, as well as the continuance of our phyla after us with abilities to survive, depend upon the questions involved in brain improvement and brain hygiene, more than anything else.

"The brain is the organ that adjusts the man to his environments.

"The individual receives his phylum from his ancestry or, rather, is a prolongation of the ancestral phylum, at a certain level of intellectual competitive ability and endowed with certain inherent habits of observing rules of conduct; he then raises or lowers these levels by the amount and the kinds of practice he performs himself, and his phylum goes past him into its stage of another generation at a higher or lower level, in either or both of these particulars, according as he has done abundant or little high-grade practice. Nature's way of improving abilities is by eliminating the less capable.

"To increase the brain ability of a phylum above the level that naturally belongs to the ancestral line requires great and continued effort. It is not accomplished in a day, nor by fits and starts, but it takes the steady work of a lifetime and of generations. It is hard to improve lineal ability; there is no royal road. On the other hand, it is very easy to lower and let down lineal ability; simply doing nothing, does it in one short generation; and besides anything like disease, injury, defect or failure of the brain does it.

"The 'abnormal man' is very numerous in human society. He is a very troublesome factor in it. He is not adjusted to its highest attainments, consequently he is either an incubus upon its welfare by his intellectual disability to care for himself, or he is a menace to its safety by his inherent habits of not adjusting his conduct according to high moral and ethical rules. What to do with him is a most serious question. The 'abnormal man' is generally a degenerate; he has come down from higher levels and is defective, both intellectually and morally. There are many kinds of "defects" in society. We have some good, easy, good-for-nothing fellows, who are intellectually weak and passively good. Such a man is inherently intellectually, incapable of making or competing for his living, while he possibly passively adjusts his conduct to the rules of society. Those who are simply paupers are of this class. There are real paupers in high life, in wealthy lines, supported by the wealth accumulated for them by others, though they naturally belong to the eliminating ranks. Left to themselves, they rapidly take that

direction—they can not compete—in time they or their phyla disappear.

"Among the abnormal men we also have the inherently vicious and the insane. Nothing is more true than the statement, abnormalities in the large majority of cases belong to degenerating deteriorating phyla; they are such as we find them because their phyla are not maintaining their comparative levels, —they are on the down grade."

You see he thinks about two-thirds of all of the phylums are wasted or become extinct. If he were out here among these denizens of the Golden Gate City he would think differently, because you would show him how to fill them up again.

PSYCHICAL AND PHYSICAL SANITATION AND QUARANTINE.

Dr. Geo. F. Shrady is reported to have said in a recent interview that more important than a bureau for distributing seed is it to have a bureau for killing the seeds of disease. These will be provided when the people heed their health interests as they do their agricultural, and endeavor to stamp out hereditary death and degeneracy as they do to drive out foreign pestilences when they threaten to invade the land. These will be provided when men care as much for their brains as for their bodies, and for both as for their houses or horses.

In my address at Washington last year I recommended the creation of a Sanitary Department, with its chief a member of the Nation's Cabinet, that the people might be saved the final doom of decadence that befell the nations of antiquity, through ignorance and neglect of national sanitation, moral, mental and physical.

We quarantine against the degenerate, the defective, the diseased and the poor in purse from abroad, but do nothing as a State or Nation to quarantine against the commingling and spreading of our own bad blood, which breeds and multiplies defectives of mind, morals and body. We build hospitals, homes and reformatories for these, but not so fast as the insane, the idiotic and the vicious are increased to overcrowd them, by marriages that ought to be interdicted by law.

If municipal governments conformed in their statutes to the light of modern medical knowledge and surgical suggestion on these subjects, the insane, epileptic and most of the nervous hospitals and homes for the idiotic, the insane, the mute, the imbecile and the penal reformatories would soon be unnecessary. These monuments of our enlightened advisory philanthropy would give place to wholesome laws of prevention, commemorative of our admonitory providence. The insane temperament and neuropathic diathesis, breeding their hordes of degenerates would then be in the way of extinction. What right has an insane man, a "crank," an epileptic or an idiot to afflict posterity, blemish and cripple society or burden the State with the perpetuation of his kind, and what right has any man or woman to marry such? What rights have the consumptive or the syphilitic in this direction? Through the advances made in medicine and proclaimed to the people, the world is gradually getting its eyes open to the perils of morbid and vicious heredity, and the entailed aptitudes of individuals to disease are largely in the defective resistance of the nervous system to exciting causes of disease. Bacteria furnishes many of the seeds, but an unresisting organism gives the soil essential to morbid implantation and growth. If the soil be not recipient, the bacteriologic seeds fall on stony places. When as much public attention is paid to sanitation as is now given to agriculture, arms and education, there will be a Sanitary Department of State, and it will seek out and inform the people from the teachings of our profession how they may be made strong enough to resist disease and build and maintain the greatest and most enduring among the great nations of the earth. Violent and radical remedies and revolutions for small political ills magnified by morbid imagination are the offspring and suggestion of unhealthy minds. Already that great messenger of light, the daily press, is seeking to learn from us how the people, and the nation builded upon the people, may be psychically and physically saved from those destructive influences which tell against health and longevity and against the perpetuity of our institutions. The press and people used to get their information from the quack advertisers, but now they get it in the regular way.

In view of the power of the medical press we should, in my judgment, continue to insist upon advancing the standard of medical education until no school in the United States has a curriculum of less than five years of college study, and until a National Sanitary Bureau exists in all the States and in the District of Columbia; and a sanitary medical officer, perhaps a medical editor, shall sit in the President's Cabinet, the peer of the head of any other department of the Government.

And we should further continue our efforts until the profession of medicine is unified on the broad non-sectarian basis of a liberal scientific and clinical education, and the physician stands before the world the political and social peer of any man, as he now is, when educated and trained in the principles of our ethics and in the full light of clinical and collateral medical science.

The medical press, more than all other agencies, has promoted the advancement of anthropologic science in its physiologic and pathologic aspects, and made it more than ever apparent to the profession and the people that the highest and most "proper study of mankind is man." It has elevated the profession, elevated mankind and exalted appreciation in both, of the art of healing and the science of conserving health. Thus it has promoted and promotes the welfare of the people.

The secular press is indebted to us for more matter of value to the highest interests of mankind than to any single source upon which that wondrous nineteenth century miracle, the newspaper, draws to supply its columns. Many of the most ingenious devices of modern suicide are the perverted resources of medicine obtained from the medical press. The pleas to procure exemption from consequences of crime are distorted and legally misapplied principles of modern medical science, while real extenuations of apparent crime are obtained by lawyers from our pages.

The numberless cure-alls heralded to the public as panaceas for all the ills flesh is heir to, have all been modestly heralded for more limited and restricted use by us.

The ten thousand saving resources of hygiene by which epidemics are stayed and the degeneration of the race is retarded and its active diseases averted or modified in their courses, and the preservative em-

balming processes for the dead, have all first passed through the columns of the medical press, and we have furnished most of the subjects. We have been an everlasting boon to the undertaking and the tombstone business.

The great sanitary problems of the day which promote the comfort and health of the people have all first been solved through our pages.

We have taken the initiatory in all educational reforms in the secular and medical schools, and forced the latter and the profession to higher standards. The *esprit du corps* of the profession has been steadily advanced through our influence.

These are reasons enough for the existence of the medical press, and as individual influence is promoted by unity of effort this is reason enough for our existence as an association.

The medical journal goes to the physician's home and office with the latest advances in the science and art, and keeps the alert practitioner posted in advance of the books. It promotes progress and fraternity and stimulates medical ambition and professional pride. Our journals are all medical mirrors, though only one bears that name.

The medical press has put a premium on brains, energy and research in the medical profession, and made the profession respectable before the people. It puts a damper on mediocrity, show and pretense in the profession, applauds and sustains merit and brings out modest worth so that it receives its true reward. It makes worthy men great, and measures littleness with the shortened tape-line of its own deserts. It gives to all deserving men liberally of well-earned praise, and takes away nothing from the undeserving.

The medical press has aimed high and persevered until it has filled the world with the true glory of American medicine and placed her great medical men where they justly belong, "high on the topmost stone of Fame's triumphal arch."

The medical press has made it a popular thing for the practitioner to read current medical literature, and lay upon the shelf the moldy precedents of the past until to be an advanced and reading physician is to be among the greatest of men.

The medical press has robbed medicine of its sectional prejudices so that the profession now knows no North, no South, no East, no West, and under its influence narrow sectionalism and narrower sectarianism have retreated into the shade under the searchlight of brilliant discovery and advancing science. After our late war the AMERICAN MEDICAL ASSOCIATION was the first public body to be reunited through our benign influence.

The manifest destiny of the medical press is to shed the light everywhere until there shall be but one broad, non-sectarian profession, learning only truth from the teachings of science and applying it to the noble art of healing, of destroying and preventing disease.

The best men of our profession to-day are the men who write for the medical press. The press has made them and they have made the medical press what it is.

The mental caliber of the medical editor has expanded until he is now the peer of the best among his fellows in the profession, and the accepted teachers of the profession have advanced in ability until they are nearly equal to the medical editors, and that is the highest compliment that can be paid them.

The medical press is the telescope that searches out new worlds of observation and thought, the phonograph that registers and reproduces the thoughts and observations of its master minds, and the mimeograph that sets before the world a good type and copy for imitation and emulation by the medical men of the world.

In my last address to you, gentlemen, as I have said, I recommended a Health Department and a physician in the Cabinet, but I have seen no nomination as yet. Neglect of President Cleveland and of Congress in this important matter may be the cause of their luck in pleasing the country. Things will never go right until a doctor and a medical editor get into the Cabinet. A President should always take the right medicine. Congress seems to have taken the wrong medicine or none at all. It needs to get a "move" on.

I now take pleasure in introducing the toastmaster of the evening with a little preliminary note of warning. I have examined his head and I find him all right now. What he may say now you may safely accept, but he is sometimes troubled with night blindness and is not likely to see well after 12 P.M., and he does not mean all he says after that hour. But if you listen to him now, he will bubble with mirth like a bursted champagne bottle, and boil over with love for all the Fellows, and all mankind and the bottle in particular. His name was never "Dennis," but always Love, and I always love to introduce him.

ORIGINAL ARTICLES.

THE NECESSITY OF A MYDRIATIC IN ESTIMATING ERRORS OF REFRACTION.

Read before the St. Louis Medical Society, April 14, 1894.

BY J. ELLIS JENNINGS, M.D.

LATE CLINICAL ASSISTANT ROYAL LONDON OPHTHALMIC HOSPITAL; OPHTHALMIC AND AURAL SURGEON TO THE ST. LOUIS MULLANPHY HOSPITAL.

There seems to be a tendency for the practice of ophthalmology to take a circular course in its search for higher development. We are making steady progress upward, but every now and then we find ourselves treading familiar paths; ground over which we had never expected to travel again.

In the treatment of corneal ulcers we go from curette to cautery and from cautery to curette; from atropin to eserin and then back to atropin until one becomes confused. A learned London oculist gave expression to this uncertainty when he said to me: "First try atropin and if that don't work use eserin."

The history of cataract extraction furnishes us with another illustration of this tendency to move in a circle. Extraction was first practiced by Daviel, of Marseilles, about the middle of the last century. He and his followers were careful not to wound the iris. Then came the brilliant Von Graefe who taught the world to remove a portion of the iris before extracting the lens, and it became the recognized mode. But in recent years there has been a reaction, and now we find the majority of oculists arrayed on the side of simple extraction.

But yet another change confronts us—a movement which is insidiously undermining the very foundation of sound ophthalmologic practice and which threatens to lower the standard of "the most exact of the specialties." A glance at the medical literature

of the day shows a tendency to do away with mydriatics in the estimation of errors of refraction. We are justly proud of the reputation which American ophthalmologists have gained, of being the best refractors in the world. How has this enviable position been attained? By insisting upon the use of a mydriatic and thus estimating the total amount of refractive error. Shall we lightly abandon that which has served us so well in the past? In order to answer this question rationally let us consider for a moment the methods used in estimating errors of refraction and the relative value of each. We have the ophthalmoscope, the ophthalmometer, the shadow test and the trial lenses.

1. *The Ophthalmoscope.*—This splendid instrument has done more than any other one thing to make ophthalmology the beautiful study it is. With it, we can investigate the hidden mysteries of the eye-ball and throw new light on many obscure causes of disease. But the oculist who thinks he can accurately measure cases of hypermetropia, myopia and astigmatism with it, believes in a delusion and a snare. Some time ago it was my privilege to work with one of the most brilliant ophthalmologists of London. He was a man of keen observation and used the ophthalmoscope daily on a great number of patients. He prided himself upon his ability to refract by the direct method and, indeed, often prescribed glasses without further investigation. But subsequent work by me with retinoscope and trial lenses made plain the fact that his estimations were often faulty.

2. *The Ophthalmometer.*—This is an instrument which when perfected is destined to be universally used in estimating astigmatism. But in its present form there are limits to its usefulness and many claim that the results are often unreliable. Be this as it may, certain it is that the ophthalmometer is to be found in the office of most oculists. . If questioned as to its utility, each and every man sings its praises and declares that he could not get along without it. This is probably theoretical, for practically the half inch of dust which has accumulated upon its many sides belies the statement and proves it to be more ornamental than useful.

I have mentioned these points, not to detract from the merits of the ophthalmoscope and ophthalmometer—they are grand instruments—but to show a limited value in estimating errors of refraction. We have, then, two methods left for consideration, the "shadow test" and trial lenses; an objective and a subjective mode of procedure.

When used together they enable us to do our work easily, quickly and accurately; provided, however, that a mydriatic is used. Without it the results are very uncertain and unsatisfactory. The "shadow test" is the most reliable objective method we have for estimating the amount of ametropia. The skilled eye can refract, in a few minutes, the most difficult case of astigmatism, and with Thorington's "Axonometer" (*Medical News*, March 3, 1894) find the axis of the cylinder. This method deserves to be more generally used and is especially valuable when we come to deal with children. In these cases the trial lenses alone are apt to prove unsatisfactory. After we have recorded the results of the "shadow test" we go to the trial box with confidence, and select lenses which approximately correct the error. A little addition or subtraction, a slight turn of the cylinder and we have done.

But there are many ophthalmologists who do not use the "shadow test" in their practice, and a few who do not use a mydriatic. St. Louis is an old offender in this respect, and numbers among her oculists a few who still cling to the crude and unscientific method about to be described. It is unscientific because it is based wholly upon the statements of the patient.

I quote from an article in the "Reference Hand-Book of the Medical Sciences," Vol. III, page 782:

"The accurate correction of the total hypermetropia is the end to be kept constantly in mind in giving convex glasses to a hypermetrope. Nevertheless, it is often better to reach this full correction by successive stages. Thus a hypermetrope may find it impossible to relax his accommodation fully on first using convex glasses, and may therefore reject neutralizing glasses as impairing distant vision and compelling him to read or work at an inconveniently or uncomfortably short distance. On the other hand, he will probably take very great satisfaction in glasses of somewhat longer focus, which fully correct or perhaps somewhat over correct his manifest hypermetropia. After wearing such partially correcting glasses for a few days or weeks, a larger fraction of the total hypermetropia will have been rendered manifest and the glasses may then be changed for others of shorter focus, and these again for others until the full correction is reached."

This "expectant" plan of treatment subjects the patient, not only to repeated visits to the oculist, but to the extra expense of purchasing stronger lenses every few days or weeks. If this method should come into general use, it would be a good investment for each and all of us to become silent partners in the optician business. Why these repeated visits, this extra expense? This leads me to discuss the disadvantages and advantages of a mydriatic.

1. Disadvantages. The learned author above quoted says: "To spare the patient from the very considerable inconvenience and possible disqualification for work, attendant upon the production of complete paralysis of accommodation, by the free use of the stronger mydriatics." And I add the following:

2. The patient may object to the use of drops.

3. The possibility of setting up an acute glaucoma.

1. The first objection could have been raised with propriety in the olden days when atropin was the only drug used to paralyze the ciliary muscle. The loss of ten to fifteen days was a great hardship. But at the present time when by using homatropin we have only a loss of five hours' time (Fuchs), this objection is not tenable.

Contrast this loss of five hours with the loss occasioned by six or eight visits to the oculist and the weary hours of waiting in the outer office before the patient receives attention.

2. The patient may object to the use of drops. On this point, Dr. Oliver says ("Norris & Oliver Textbook of Ophthalmology," page 260): "If certainty is felt that ciliary paralysis is necessary before proper lenses can be chosen, the surgeon had better be prepared to lose the patient than to give him imperfect work." Again, "Although this plan may often result in patients seeking advice from others who may rest content with an imperfect correction of some manifest error, yet in all such instances it is far more

than equivalent recompense to know that the steady, quiet reputation of many years of but little error in refractive work, is infinitely better than the flash-like brilliancy of the moment in quickly giving corrections that may or may not be right."

3. The possibility of setting up an acute glaucoma by the use of a mydriatic. This would be a very important objection if clinical facts sustained it. Listen to the experience of Dr. Risley (*Univ. Med. Mag.*, January, 1893): "I have used these drugs with impunity, both in private and public practice, in many thousand of eyes during and after middle life, and I have yet to meet the first instance of an acute glaucoma precipitated by the employment of a mydriatic. But, I have always taken the precaution to avoid their use except with the greatest caution in all cases when there is increased tension of the eye-ball, with diminished range of accommodation not accounted for by other recognized conditions, or with characteristic abnormalities in the field of vision."

Advantages of a mydriatic. The recording for all time of the total error of refraction. Here we deal with no uncertain quantity; we have the key to the situation and can use the information as our experience and judgment may dictate. As Dr. Risley says: "In the endeavor to correct the manifest error of refraction we are dealing with an unknown because an ever changing quantity, which constantly vitiates results, and the work done is unsatisfactory because it does not secure perfect relief."

Another advantage of a mydriatic is the dilated pupil which allows us to examine the interior of the eye-ball at our ease. We are not forced to screw our eye out of shape, as is necessary when we view the fundus through a pin-hole pupil. We examine the peripheral portions of the lens for striæ, the vitreous for fine opacities, and search the outer parts of the fundus for pathologic changes. The impossibility of making the above investigations without the use of a mydriatic, force us to the conclusion that those gentlemen who forego its use, cripple their diagnoses and allow many important points to escape them.

Lastly, by using a mydriatic we have the satisfaction of knowing that our work is well done, and that the foundations of our treatment rest upon the rock.

In conclusion, I wish it understood that I do not advocate the use of a mydriatic in every case. I have endeavored to show that it is an invaluable aid to diagnosis, and that its advantages overshadow its disadvantages, as the mountain the mole hill. Therefore the oculist who refuses to use it will surely either be dashed to pieces upon the rocks of Scylla or be dragged down into the whirlpool of Charybdis.

ASSOCIATION NEWS.

AMERICAN MEDICAL ASSOCIATION.

Proceedings of the Forty-fifth Annual Meeting, San Francisco, June 5-8, 1894.

FIRST DAY—JUNE 5.

The President, Dr. Jas. F. Hibberd, of Indiana, called the Association to order at 10:30 A.M. The second Vice-President, Dr. I. N. Love, of Missouri; the Permanent Secretary, Dr. Wm. B. Atkinson, of Pennsylvania; and the Assistant Secretary, Dr. H. B. Ellis, of California, were present.

Prayer was offered by Rev. Robert Mackenzie, D. D., of the First Presbyterian Church of San Francisco.

In the absence of the Governor of California, and the Mayor of the city, Supervisor J. G. James welcomed the Association to the city.

Dr. G. L. Simmons, on behalf of the profession of the State delivered an Address of Welcome.

Dr. R. H. Plummer, Chairman of the Committee of Arrangements, reported the program of papers and entertainments during the session. In conclusion, he presented a valuable gavel made of redwood, and bound in gold, to the President, and gavels of native woods, from the Oregon State Medical Society for the Chairman of each Section.

Vice-President I. N. Love having taken the chair the President delivered the Annual Address. (See JOURNAL, June 9, 1894).

On motion of Dr. W. T. Bishop, of Pennsylvania, a committee of five was appointed to consider the suggestions in the address and report at this meeting. Committee: Drs. W. T. Bishop; L. Beecher Todd, of Kentucky; R. Beverly Cole, of California; F. W. Mann, of Michigan and J. E. Woodbridge, of Ohio.

On motion of Dr. I. N. Quimby, of New Jersey, a committee of five was appointed to prepare a preamble and resolutions in reference to the threatened danger of a reduction in the number of Assistant Surgeons in the Army. Committee: Drs. I. N. Quimby; Jerome Cochran, of Alabama; John B. Hamilton, of Illinois; Edw. E. Montgomery, of Pennsylvania, and J. Milton Duff, of Pennsylvania.

On motion of Dr. Atkinson, the delegates representing the American Pharmaceutical Association were received and invited to seats with the Association.

The Permanent Secretary read the report of the Treasurer.

REPORT OF THE TREASURER.

I have the honor to present the report of my seventeenth year of active service as Treasurer of the American Medical Association. It would have given me great pleasure to be present at this meeting, and to read my report personally, but illness in my family will not allow me to be very far away from home at present.

My absence, under the rules of our By-Laws would naturally create a vacancy in the office of Treasurer, for it is provided therein that every one elected for any office in the Association shall be chosen from those present at the annual meeting; a desirable provision so far as honorary official positions are concerned, but in the case of an office like that of the Treasurer or Secretary it is not expedient or proper, for in case of illness or other unavoidable causes the Association might be deprived of the services of a valuable officer, whom it might be preferable to retain. In my own instance, this rule is immaterial, as it has been long known to my friends that I was desirous of relinquishing my position at each annual meeting for several years past; and only retained it at their urgent solicitation.

The labors of the Treasurership have now become so onerous that the giving of proper personal attention to the duties of this responsible office is a business of its own, requiring much more supervision and direction than mere clerical attention. I would suggest that hereafter the Treasurer should be a salaried officer, receiving annually a compensation commensurate with the amount of labor which must inevitably devolve upon him in the faithful execution of his office. Several items of interest derived from my personal experience occur to me as worthy of mention at this time.

In several of my annual reports I have pointed out the desirability of abolishing the rule which virtually allows a member to remain such, even if he is for two years out of every three years delinquent. This rule was adopted before the publication of the JOURNAL and should be entirely eradicated, so that membership and the receipt of the JOURNAL may go directly, hand in hand. No list of members can ever be perfectly maintained, with the hundreds of changes annually occurring by death, resignation, delinquency in payment of dues, etc., if in spite of the latter the delinquent member still remains on the membership list, regardless of the fact that he may no longer be a recipient of the JOURNAL. The opportunity is now offered for the Association to reduce the three year rule to one year, and it is to be hoped that the necessity of the change will be promptly appreciated by all the members.

The list of members should be thoroughly sifted and published every year, as corrected, as soon as possible after each annual meeting, so as to include all new members to date; and not triennially as heretofore. Any published list of members may appear to be numerically important although the total number has often been greatly overestimated, but such list includes a large number who have not paid dues or drafts, or who have promised to pay, but are still members under the three years rule.

As an illustration of the numerous changes in the membership of the Association in brief periods, it may be stated that in the two years and a half which elapsed from January, 1888, to July, 1890, I forwarded as Treasurer 1,056 names of members to the Editor of the Journal who had in that time been dropped from the rolls of the Association on account of death, resignation, failure to pay dues, etc. Some of those dropped for the last mentioned cause, were afterwards restored to the rolls and to the mailing list by payment of dues, usually through the persistent persuasive power of the Treasurer, who has faithfully attended to all these details of his office, and forwarded to the Editor all dates that would be of importance to him. For the information of the Association, I would state as the result of my experience through a long series of years that any increase of membership that may occur through additions made at the annual meetings, even in the largest cities, is almost always extinguished before the close of the fiscal year from the causes already enumerated.

If it had not been for the system of membership by application which was devised by Dr. John H. Packard, of Philadelphia, a number of years since, and adopted by the Association on his motion, there would be little or no annual increase in the membership of the Association. It is to be hoped therefore that the plan of membership by application will be fostered by the Association as one of the most important features of its organization.

During the past year the Treasurer and the editor of the JOURNAL have both actively and successfully endeavored to increase the membership from this source, and they have received material aid in the same direction through the earnest coöperation of Dr. Plummer, the Chairman of the Committee of Arrangements of the San Francisco meeting, who has thus secured the direct interest and active sympathy of a large number of representative medical men on the Pacific Coast.

The balance in my hands as Treasurer at this time is $6,153.78.

In conclusion, I would say that in taking official leave of the Association as Treasurer, I hope to continue as ever a useful and active member, always at its service and ever ready to coöperate with it in all measures for the advancement of the medical science.

All of which is respectfully submitted,

RICHARD J. DUNGLISON,
Treasurer American Medical Association.

TREASURER'S REPORT.

RICHARD J. DUNGLISON, M.D., Treasurer, in account with the American Medical Association.

		Dr.
1893.		
June 4.	To cash balance reported at Milwaukee meeting . . .	$ 5,790.93
	From delegates and members at Milwaukee meeting.	3,810.00
1894.		
May 25.	To cash dues paid by members to date	11,127.50
		$20,728.43

		Cr.	
1893.			
June 21.	By cash paid D. W. B. Atkinson, Permanent Secretary, as per resolution of the Association, for fiscal year 1894	$	500.00
June 22.	By cash, Dr. R. J. Dunglison, Treasurer, expenses of attendance at annual meeting, expressage, telegrams, postage, etc., to date		98.85
"	By cash, Wm. F. Fell & Co., printing		17.50
"	" " 3,000 stamped envelopes		66.00
June 26.	" Ward & Barnitz, printing		7.75
July 12.	" " " "		32.25
Aug. 7.	" Dr. U. O. B. Wingate, Chairman Committee of Arrangements, Milwaukee meeting, on account . . .		1,000.00
Aug. 15.	By cash, Wm. F. Fell & Co., printing		30.75
Aug. 26.	" Dr. H. Gradle, expenses Section of Ophthalmology		10.50
"	By cash, Dr. B. Lee, expenses Section of Ophthalmology		15.00
Aug. 28.	By cash, Carl Stutsman, reporting Section of Surgery.		50.00
"	" Frances Holland, reporting Section of Practice		90.00
"	" W. Whitford, reporting at Milwaukee meeting		138.00
Sept. 4.	" Farmers and Mechanics Bank, Philadelphia, exchange		28.20
Sept. 8.	By cash, stamped envelopes, stationery, postage, etc.		62.85
"	" Dr. U. O. B. Wingate, Chairman Committee of Arrangements, Milwaukee meeting (balance) for expenses of meeting		424.60
Sept. 25.	By cash, 500 postal cards		5.00
Oct. 2.	" H. D. Goodwin, reporting at Milwaukee meeting		100.00
Oct. 9.	By cash, G. W. Moran, reporting Section Diseases of Children, Milwaukee meeting.		50.00
"	By cash, Dr. H. S. Reeser, refunded annual dues paid in excess		5.00
Oct. 25.	By cash, Dr. E. E. Montgomery, Trustee, expenses of attendance at meeting of Trustees at Washington . .		21.00
"	By cash, rental of P. O. Box, July, 1893, to Jan., 1894 . .		6 00
Oct. 26.	" stamped envelopes, postage, stationery, etc .		18.75
"	" W. H. Kurtz, collector annual dues		15.00
Oct. 28.	" Dr. John H. Rauch, Trustee, expenses attending Trustees' meeting at Washington		123.25
Nov. 2.	By cash, S. S. White Dental Manufacturing Company, reporting Dental Section		50.00
Dec. 11.	By cash, Dr. R. J. Dunglison, Treasurer, clerk hire . .		100.00
"	" 1,500 stamped envelopes		33.00
1894.			
Feb. 12.	" Wm. F. Fell & Co., printing		15.50
"	" Dr. Wm. H. Morrison, reporting at Milwaukee meeting		14.00
Feb. 14.	By cash, Dr. J. G. Perry, annual dues refunded in excess		5.00
Feb. 16.	By cash, Dr. J. H. Rauch, Trustees, traveling and hotel expenses on business of Board of Trustees		20.00
Feb. 27.	By cash, Ward & Barnitz, printing		6.00
Mch. 5.	" Dr. J. B. Murdoch, annual dues in excess, refunded		5.00
Apr. 30.	By cash, Dr. R. J. Dunglison, Treasurer, stamped envelopes, postage, etc.		48.32
"	By cash, City, Trust and Safe Deposit Company, bond of Treasurer for two months		8.33
"	By cash, P. O. box rental, due April 1, 1894		3.00
May 2.	" Dr. W. B. Atkinson, report of meeting of State Medical Society for Journal of the Association . . .		11.00
May 3.	By cash, W. J. Dornan, printing for Permanent Secretary		14.00
May 9.	By cash, Ward & Barnitz, printing		10.75
May 12.	" Dr. Newton, reporting at Milwaukee meeting		50.00
May 14.	" Farmers and Mechanics Bank, collection charges		71.60
May 25.	By cash, Farmers and Mechanics Bank, exchange on checks deposited to date		30.00
May 28.	By cash, Dr. E. Fletcher Ingals, Trustee, expenses attending meeting of Trustees at Washington		72.00
"	By cash, Dr. A. Garcelon, expenses attending meeting of Trustees at Washington		60.00
"	By cash, Dr. E. Fletcher Ingals, Treasurer Board of Trustees, for expenses of publication of Journal . .		11,000.00
"	By cash, balance on hand		6,153.78
	Total		$20,728.43

The undersigned Committee having been appointed to audit the Treasurer's accounts have examined the books and vouchers, and found them correct. (Signed) E. E. MONTGOMERY, M.D.
E. FLETCHER INGALS, M.D.

On motion of Dr. C. H. Hughes, of Missouri, this report was received and filed.

On motion of Dr. E. F. Ingals, of Illinois, that part of the report which referred to the legislation needed for the interests of the Association was referred to the Business Committee.

The Permanent Secretary read his report of the replies received from the State Medical Societies, relative to the resolution adopted at the last session referring to them the subject of a change in the Code of Ethics.

Twenty-one reported in opposition to any change; two reported in favor of a change; two laid the subject on the table.

(The remainder took no action on the subject.)

On motion of Dr. C. H. Hughes the report was received and referred to the Committee on Publication.

Dr. I. N. Love on behalf of Dr. C. A. L. Reed, of the Pan-American Medical Congress, asked for further time in which to present his report. On motion, this was granted.

After a recess of twenty minutes, the Permanent Secretary announced the following as constituting the Committee on Nominations: Jerome Cochran, Alabama; P. O. Hooper, Arkansas; J. H. Parkinson, California; T. G. Horn, Colorado; J. E. Root, Connecticut; I. J. Heiberger, District of Columbia; J. B. Hamilton, Illinois; W. H. Bell, Indiana; G. H. Jenkins, Iowa; E. T. Rogers, Kansas; A. D. Price, Kentucky; J. A. Donovan, Maine; H. O. Marcy, Massachusetts; E. D. Keys, Minnesota; C. G. Chaddock, Missouri; G. Wilkinson, Nebraska; H. Bergstein, Nevada; I. N. Quimby, New Jersey; E. D. Ferguson, New York; X. C. Scott, Ohio; H. R. Holmes, Oregon; J. M. Duff, Pennsylvania; G. H. Price, Tennessee; T. S. Bascom, Utah; George Davenport, Vermont; M. M. Walker, Virginia; N. T. Essing, Washington; B. O. Reynolds, Wisconsin; C. R. Greenleaf, United States Army; G. W. Woods, United States Navy; John Godfrey, United States Marine-Hospital Service; G. W. Givens, Idaho; C. E. Winslow, New Mexico; L. C. Stevens, South Carolina.

On motion of Dr. John B. Roberts, of Pennsylvania, in order that all members might be able to be present at the general sessions, the hour of meeting was changed from 10 A.M. to 12 M. each day.

The Permanent Secretary read the following from the Executive Committee:

WHEREAS, Each of the sections should have three members on the Business Committee of the Association; and

WHEREAS, A considerable number have signified their inability to be present this year,

Resolved, That the officers of the various sections be hereby instructed to appoint from the members in attendance, alternates, to act at this meeting for those who are unable to be present.

On motion, this was adopted.

The Permanent Secretary presented several communications which were referred to the Judicial Council.

On motion of Dr. I. N. Quimby the following was adopted:

WHEREAS, Dr. R. J. Dunglison has been for seventeen years a faithful, energetic Treasurer of this Association, without any compensation; therefore be it

Resolved, That the hearty and unreserved thanks of this Association be cordially extended to him for his efficient and laborious duties in behalf of this Association, and a copy of this resolution be forwarded by the Secretary to Dr. Dunglison.

Dr. E. E. Montgomery offered a resolution that an honorarium of $300 be given to Dr. Dunglison.

On motion, this was referred to the Board of Trustees.

On motion, the Association adjourned until Wednesday.

WEDNESDAY, JUNE 6.

The President called the Association to order at 12 M.

The Committee of Arrangements announced an invitation from Spreckles Bros. to visit their place. He then offered as member by invitation, E. C. Ingals, Chicago, Ill.

The President asked the ex-Presidents present to take seats upon the platform.

Dr. I. N. Quimby, Chairman of the Committee on Army Medical Department, presented the following report:

Resolved, That the American Medical Association urge upon Congress the advisability of preserving and promoting the efficiency of the Army Medical Department.

Resolved, That any reduction in the present membership of the Army Medical Department would be prejudicial to the interests of the Army and the country.

Resolved, That the Permanent Secretary communicate this action to Congress by telegraph.

On motion, the report was received and the Secretary was instructed to telegraph it to Congress,

Dr. C. H. Hughes, of Missouri, read the Address in Medicine. [See JOURNAL AMERICAN MEDICAL ASSOCIATION, June 16.]

On motion of Dr. H. D. Didama, of New York, the thanks of the Association were tendered Dr. Hughes for his admirable, scholarly and original address.

Dr. H. O. Marcy, of Massachusetts, rose to a question of privilege, and offered the following:

A CIRCULAR LETTER TO THE STATE MEDICAL SOCIETIES.

WHEREAS, This Association has long recognized the advantages to be derived from the more intimate relation between the State Medical Societies and the American Medical Association; it is hereby

Resolved, That we request the various State medical societies to perfect their local organizations, so as to include, as far as possible, in the membership of their district societies every regular practitioner within the State;

That these local societies shall actively coöperate in urging a general attendance upon the annual meetings of the State Societies;

That the date of the same be so fixed that it shall not interfere with the attendance of those members who are delegates and members of the American Medical Association; in order that a general unification of the interests of the medical profession of America be promoted, and the American Medical Association become in a yet higher degree the exponent of the profession.

That we also request the State societies to unite in establishing a uniform standard of professional requirement for admission to the practice of medicine and to aid, as far as possible, in advancing the scientific status of the same by the appointment of State Examining Boards, independent of the teaching faculties of the medical colleges. To this end we further direct that the Permanent Secretary of the American Medical Association enter into correspondence with the secretaries of the several State medical societies and furnish annually a written report of the membership of the State societies and the working effectiveness of their organizations.

On motion of Dr. E. F. Ingals, of Illinois, this resolution was referred to the Committee on Business.

The Secretary read the report of the Librarian, which on motion was referred to the Committee on Business.

To the Officers and Members of the American Medical Association:—Your Librarian begs leave to submit the following report:

At the meeting at Milwaukee last year it was voted by the Association to leave the transfer of our Library to the Newberry Library at Chicago, to the Librarian and the Board of Trustees, the terms to be in accordance with my report of the previous year.

That report recommended that our Library be deposited with the Newberry Library, and that the deposit be made permanent so long as the books were properly cared for. The Trustees of Newberry Library absolutely refused to accept the books unless the deposit be made permanent. This is only just to them as the expense of binding, shelving, etc. will be considerable, and I therefore recommend that the transfer be made in accordance with terms of the appended agreement, the Trustees of the Newberry Library having agreed to all of the terms. Otherwise the Association must immediately arrange for the removal of the books from the Smithsonian Institute at Washington, and for their subsequent care, as I have received notice that the room is very much needed.

AGREEMENT.

It is hereby mutually agreed by the Trustees of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, and the Trustees of the Newberry Library, that the American Medical Association shall permanently deposit in the Newberry Library its entire collection of books and pamphlets now in the Smithsonian Institute at Washington, or elsewhere, and in consideration thereof the following arrangements are made and agreed upon, namely:

1. That the said books and pamphlets shall be treated by the Newberry Library in all respects as its own, and as it treats its own books, except that in labeling, stamping, or otherwise marking them they shall, when received, be so marked as to show that they belong to the collection received from the American Medical Association; and the said Association shall never thereafter have any right to remove said collection of books or any part thereof from the custody and control of the Newberry Library.

2. That duplicates or other books may be exchanged or sold at the discretion of the Librarian or Trustees, but that such books received in exchange or purchased with the proceeds of sale shall be marked or stamped as above provided for.

3. That the American Medical Association may hereafter continue to deposit in the Newberry Library all the books, journal, etc., donated or contributed to it from any and all sources; except those given to reviewers for writing the reviews, and such journals as are needed to keep complete files in the office of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. All such books, etc., shall be treated in all respects as hereinbefore provided concerning the collection at present existing.

4. That the Newberry Library will defray the expense of

transporting the aforesaid collection to the Newberry Library. GEO. W. WEBSTER, M.D., Librarian.

Dr. E. E. Montgomery, of Pennsylvania, read the report of the Trustees.

ANNUAL REPORT OF THE BOARD OF TRUSTEES OF THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Mr. President: The Board of Trustees in presenting its annual report would felicitate the Association upon its present financial condition. Notwithstanding the past year has been one of unparalleled financial depression—one which has taxed the resources and awakened the anxiety of every monetary institution throughout the country—this organization has weathered the storm and is able to show a larger balance than at the close of the last fiscal year.

The receipts of the Association from all sources have been $35,788.10, of which have been expended $27,759.22 leaving a total balance of $8,038.88.

The Association Treasurer's accounts have been audited, and show his receipts were $20,728.43, his expenditures were $14,574.63, making a balance in his hands of $6,153.78.

Ten thousand dollars of the expenditure was upon account of the JOURNAL.

The receipts of the JOURNAL, including the amount just mentioned, were $24,969.67, making its net receipts $14.969.67. Its expenditures were $22,084.57, leaving a balance in the Board treasury of $1,885.10.

In presenting this statement the Board congratulates itself and you upon what, in this year of marked monetary depression affecting the medical profession probably more deeply than any other, must be considered as an absolute financial triumph. The Board would do itself an injustice did it not indicate to you how thoroughly this success is due to the earnest efforts, the untiring energy and loyal devotion of the present editor, Dr. John B. Hamilton. Upon resigning as a member of the Board he was last year elected Editor at the first meeting of the Board, and assumed the duties of the position about July 1. At that time, owing in part to the monetary stringency, the future of the JOURNAL looked serious; an average of five letters daily were received discontinuing the JOURNAL. The evident decrease in its circulation, and the financial stringency made it difficult to continue the old, and secure new advertisements. Out of this maelstrom of discouragement, however, we have been able, through the aggressive policy and wise management of its Editor, to place the JOURNAL upon a better footing than ever. As you have noticed, its pages have been increased, news items and matters of professional interest have been added, and the JOURNAL has become one that may well appeal to your professional pride and demand your earnest support. Notwithstanding the success of your Board in carrying the JOURNAL over the financial breakers of the past fiscal year, it has been unable to escape criticism, and at this meeting the Judicial Council has been asked to pass censure upon its members.

During the entire existence of the JOURNAL no question has presented greater difficulty or afforded your Board more embarrassment, than to discriminate as to what may be considered as proper matter for its advertising pages. The policy adopted was, that having entered upon the business of publishing a journal, we would be governed by the same rules followed by those considered reputable, who were engaged in the same business. The *British Medical Journal*, representing an association with similar purposes and aims, was particularly indicated as a standard.

Beyond insertion of the advertisements, the JOURNAL has scrupulously avoided any expression which could be interpreted as an indorsement of the advertisers, believing the owners of the JOURNAL—the profession—were capable of discriminating as to what would serve their interests. At the Detroit meeting the following resolution was adopted:

"*Resolved*, That the attention of the Trustees of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION be directed to the fact that the Code of Ethics prohibits all commendatory mention or advertisements of secret preparations, and that said Trustees are hereby instructed to respect said prohibition in the future conduct of the official journal of the Association."

The Trustees immediately gave the following direction: "When the Editor is in doubt about the character of an advertisement, he shall refer the same to the Committee on Advertising, and that an advertisement of a proprietary medicine shall be accepted in the discretion of the Committee when the proprietors thereof shall furnish the complete formula."

This course has since been our governing policy. The Board asserts that it has complied with the letter of the law in demanding that a formula of all secret and proprietary remedies should be submitted to its Committee before being advertised in the JOURNAL, but it would direct your attention to the fact that had the apparent intention of those who censure our action been established, we would be obliged to present you to-day a considerable financial deficit. However desirous the Board might be to comply with the wishes of some members of the Association, it could not forget that under the present Constitution of the organization, the members of the Board were the only parties legally responsible for obligations incurred, and they had too much confidence in the sense of justice of this body to believe it would demand they should "make bricks without straw," and discard a source of support utilized by other reputable journals.

No advertisements have been inserted in the JOURNAL which do not find place in such publications as the *British Medical Journal*, *Boston Medical and Surgical Journal*, *New York Medical Record*, *New York Medical Journal* and the *Medical News*.

Owing to the death of Dr. D. C. Patterson and the resignation of the editor, Dr. J. B. Hamilton, as Trustee, there are now five vacancies upon the Board of Trustees. Fill these vacancies with men in whose business integrity you can have confidence, give them your earnest support, and leave them as untrammeled as are the managers of the journal of the British Medical Association, and you can feel assured you will have a journal to which even that publication may take second place.

The United States Postoffice Department has decided that the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION is not entitled to be entered at the Chicago Postoffice as second class matter under existing regulations. Unless this difficulty can be met, the postage will be increased about $100 per week. In order to comply with the postal laws of the United States we would request:

1. That with this meeting and hereafter the $5.00 paid by delegates and members as annual dues to the Association shall be divided so as to provide that $1.50 shall be for general Association purposes, and $3.50 shall constitute the annual subscription to the JOURNAL.

2. That to persons not members of the Association, the subscription of the JOURNAL shall be $5.00 per annum in advance.

A. GARCELON, President,
E. E. MONTGOMERY,
P. H. MILLARD,
E. FLETCHER INGALS,
L. S. MCMURTRY,
LEARTUS CONNOR.

Dr. X. C. Scott, of Ohio, moved that report be received and adopted.

Dr. Edw. Jackson, of Pennsylvania, moved to amend by substituting, "that the report be received, that thanks be tendered the Trustees for their efforts in behalf of the JOURNAL, that the other suggestions be adopted, but that the Association does not approve the policy of the Trustees with regard to advertisements."

A motion by Dr. J. Cochran, of Alabama, to lay this amendment upon the table was adopted by 86 ayes to 33 nays.

Dr. Josephi, of Oregon, rose to a point of order that this action laid the whole matter on the table.

The President decided him to be out of order.

The motion of Dr. Scott to receive and adopt the report was then adopted.

The subject of the amended Constitution, etc., being next in order, Dr. X. C. Scott moved that it be made the special order on Thursday at 10:30 A.M.

A motion by Dr. Quimby to lay this motion on the table was lost and Dr. Scott's motion was adopted.

The Association then adjourned until Thursday.

THURSDAY, JUNE 7.

The President called the Association to order at 10:30 A.M.

An invitation was presented from the Mississippi Valley Medical Association asking the members to attend the approaching session at Hot Springs, Ark.

The Committee on Nominations presented a partial report,

naming Dr. H. Brown on the Judicial Council to fill the vacancy caused by the death of Dr. J. H. Murphy, of Minnesota. This action was approved.

Dr. H. D. Holton, of Vermont, Chairman of the Committee on Revision of the Constitution, etc., read an amended report from the majority.

AMERICAN MEDICAL ASSOCIATION.

CONSTITUTION AND BY-LAWS.

To Amend the old Constitution by striking out all that follows Section One and substituting the following provisions.

MEMBERS.

Members shall consist of the members of the several State societies and of their constituent local societies which subscribe to the Constitution and By-Laws of this Association, and of commissioned officers of the medical staff of the Army and Navy and of the Marine-Hospital Service of the United States. Members shall be distinguished as delegates and permanent members.

Delegates shall receive their appointment from permanently organized State and local societies in affiliation with this Association, or from one of the Surgeons-General of the United States, or an officer authorized to act for him. Each body entitled to representation may send one delegate for every five of its resident members and one for every additional fraction of more than one-half of that number.

The medical staff of the Army and Navy shall be entitled to four delegates each, and the Marine-Hospital Service shall be entitled to two delegates. Each delegate shall be duly enrolled on presenting his credentials to the Committee of Arrangements, including a receipt from the Treasurer for subscription to the JOURNAL of the Association for the preceding year. He shall hold his appointment for one year until his successor is designated, and shall participate in all the business of the Association. Members who have twice served as delegates shall thereafter be entitled to vote at annual meetings on complying with the other conditions of membership.

PERMANENT MEMBERS.

All members of affiliated societies may become members of this Association on presenting to the Committee of Arrangements at any annual meeting a certificate of endorsement from the officers of their Society and a receipt from the Treasurer for the subscription to the JOURNAL of the Association for the current year; or such persons may become members of the Association by sending to the Treasurer at any time the annual subscription price of the JOURNAL, together with a certificate of endorsement, from their local Society. Members of the Public Service may join the Association on presenting a certificate of endorsement from the Surgeon-General of the corps to which they belong, or an officer authorized to represent him, together with the Treasurer's receipt.

To all complying with the foregoing requirements the Committee of Arrangements shall issue the credentials necessary for participation in the annual meeting. Membership in the Association shall be conditioned on the payment of the annual subscription to the JOURNAL and the continuance of good standing in the local or home organization.

No person shall be permitted to take part in any annual meeting until they have completed the conditions of membership at that meeting, and can exhibit certificates to this effect from the Committee of Arrangements. But suitable persons may be introduced as guests, either at the general session or the Section sessions, and be invited to engage in the scientific and social exercises of the meeting without taking part in the transaction of business.

CONSTITUTION.

Name.—This organization shall be known as The American Medical Association.

Members of Canadian and Mexican medical societies shall be admitted to membership upon the same terms as those in the United States. The regular graduates of such schools and colleges of dentistry as require of their students a standard of general education and a term of professional study equal to those of the best class of medical colleges in this country, and embrace in their curriculum all the fundamental branches of medicine, differing chiefly by substituting practical and clinical instruction in oral and dental surgery in place of practical and clinical instruction in general medicine and surgery, shall be recognized as members of the regular profession, and shall be eligible to membership upon the same terms as other members.

MEETINGS.

Meetings.—The regular meetings shall be held annually at such time and place as may be advised by the Nominating Committee and ordered by the Association. Special meetings may be called by the President at the request of a majority of the Business Committee.

OFFICERS.

Officers.—The officers of this Association shall be a President, four Vice-Presidents, one Secretary, one Assistant Secretary, a Treasurer and a Librarian. These officers shall hold office during one year or until their successors are elected, and shall enter upon their duties immediately after election.

The President shall preside at the meetings, preserve order and decorum in debate, giving a casting vote when necessary, and perform all the other duties that custom and parliamentary usage may require. At the opening session he shall deliver an address to the general meeting, not to exceed thirty minutes in length.

The Vice-Presidents may be called upon to assist the President in the performance of his duties, and during his absence, or at the request of the President, one of them shall officiate in his place.

The Secretary shall record the minutes of the general sessions and authenticate the proceedings; give due notice of the time and place of the next annual meeting; and prepare the official program; then notify all members of committees of their appointment and the duties assigned to them; hold correspondence with other organized medical societies, both domestic and foreign, and carefully preserve the archives and unpublished transactions of the Association. He shall publish the rules governing the reading and discussion of papers and the order to be observed in the business of the general and sectional meetings; shall receive and announce all papers communicated, and, with the several Section officers determine the order in which the papers shall be read and discussed.

For his personal expenses in attending the annual meetings the Secretary shall draw upon the Treasurer of the Association.

The Assistant Secretary shall aid in recording and authenticating the proceedings of the Association; serve as a member of the Committee of Arrangements, and perform all the duties of the Secretary, temporarily, whenever that office shall be vacant by death, resignation or removal.

The Treasurer shall also be the Treasurer of Board of Trustees and shall have the charge and management of the funds of the Association. He shall give the Board of Trustees bonds for the safe keeping and proper use and disposal of his trust. Through the same Board he shall present his accounts, duly authenticated, at each regular meeting. He shall each month furnish the President of the Board of Trustees with a statement of accounts for the guidance of the Board in its expenditures. For his personal expenses in attending the annual meetings, he shall draw upon the treasury through the President of the Board of Trustees.

The Librarian shall receive and preserve all property in books, pamphlets, journals and manuscripts presented to or acquired by the Association, record their titles in a book prepared for this purpose, and acknowledge the receipt of the same. He shall deposit these documents in such place and manner as the Association may direct, after advising with the Board of Trustees.

STANDING COMMITTEES.

The Committee of Arrangements shall be composed of at least seven members, of whom the Assistant Secretary shall be one, all residing in the place at which the Association is to hold its next annual meeting. It shall provide suitable accommodations for the meeting; shall verify and report upon the credentials of membership; shall issue credentials of membership to such as fulfill the conditions; shall prepare a list of members present on a separate roll for convenience in calling the ayes and nays, when these are demanded; and shall cause all members to register their names, residences and temporary addresses during the annual meeting, and the name of the Section in which they will sever-

ally vote for Section officers. The necessary expenses of a hall for the general meeting, of rooms for the Sections, programs and cards of membership, shall be met by the Association, but all such printing shall be done by the JOURNAL of the Association. Should the Committee incur other expenses, it must meet them from its own resources.

The chairman of this Committee shall be nominated by the Nominating Committee, and elected by the Association.

The Board of Trustees shall consist of nine members, three of whom shall be elected annually on nomination by the Nominating Committee, and serve for three years. This Board shall manage all matters relating to finance and publication. It must provide for and superintend the publication and distribution of all such proceedings of the Association as may be ordered to be published, in such manner as the Association may direct. In doing this it shall have authority to appoint an editor and such assistants as may be necessary, and to determine their salaries. It shall procure and control such materials as may be necessary for the performing the duties assigned it. To the Board or its representatives must be delivered, during the annual meeting, or as soon thereafter as is possible, by the Secretary of the Association and by the Section Secretaries or Executive Committees, all records of meetings, papers or discussions, and such other documents as were ordered published by the Association.

All money received by the Board of Trustees or its agents, resulting from the discharge of the duties assigned them, must be paid to the Treasurer of the Association, and all orders for disbursements of money, in any way connected with the work of publication, must be endorsed by the President of the Board of Trustees. It shall further be the duty of the Board of Trustees to hold the official bond of the Treasurer for the faithful execution of his office; to annually audit and authenticate his accounts, and present a statement of the same to the Association. This report must specify the character and cost of all publications of the Association during the year; the number of copies still on hand, and the amount of all other property belonging to the Association, under its control, with such suggestions as it may deem necessary. It shall yearly publish a list of members, their addresses in full, year of admission, Constitution and By-Laws and Code of Ethics, and such other information as may be deemed useful, for distribution to the members at each meeting.

In each number of the JOURNAL it shall publish a disclaimer by the Association for any responsibility for opinions expressed in the volume.

To this Board must be referred all propositions for the appropriation of money, to be considered and reported upon before the final action on the same by the Association.

The General Business Committee shall be composed of the several Section Executive Committees, selected as hereafter described. It shall hold daily meetings during the sessions of the Association, and such other meetings as may be deemed necessary for the performance of its duties. All matters of business not provided for by the Committee of Arrangements, the Nominating Committee, the Board of Trustees, the Judicial Council and Special Committees, shall be referred to it without debate, for consideration and report to the Association. In general, this Business Committee shall give especial attention to the interests of the Association as a whole, and through these interests shall seek the development of the Sections; it shall consider all matters of business referred to it by the Association, and report upon them at the earliest possible moment, when the Association may accept or reject said report, as it may deem best.

NOMINATIONS.

During a recess of twenty minutes at the first morning session of the Association the accredited delegates shall meet in groups representing each of the States and Territories, the District of Columbia, the Army, the Navy and the Marine-Hospital Service; each group being authorized to select one delegate who shall serve as a member of the Nominating Committee.

The Nominating Committee shall make and present the nominations for officers of the Association and its Standing Committees, and recommend the time and place of the ensuing meeting. It shall appoint its own officers, and adopt rules for the orderly performance of its duties. Finally, it is expected that it will perform all its duties in the interests of the advancement of scientific medicine.

The Judicial Council shall consist of twenty-one members, not more than two from any one State, whose duty it shall be to take cognizance of and decide all questions of an ethical or judicial character which may arise in connection with the Association, and the Association will accept such decision as final.

Of the twenty-one members first appointed, the first seven named upon the list shall hold office one year, and the second seven two years. With these exceptions, the term of office of the members of the Judicial Council shall be three years, seven being nominated by the Nominating Committee yearly, elected by the Association. The Council shall organize by and choosing a President and Secretary, and shall keep a permanent record of its proceedings. The decisions of said Council shall be final upon all ethical questions referred to it by the Association, and must be accepted without debate. Such decisions shall be reported to the Association as soon as practicable.

All questions of a personal character, including complaints and protests, and all questions on the ethical standing of medical societies shall be referred at once, when presented to the Association, to the Judicial Council, and without debate.

INCOME AND EXPENSES.

The income of the Association shall be derived from subscriptions to its journal and advertisements therein, from specific publications and voluntary contributions for specific objects.

Its funds may be appropriated for the expenses of halls, for general sessions and Section meetings, and for cards of membership, and such other expenses of the annual meeting as are essential for the conduct of the routine work; for meeting the necessary personal expenses of the Secretary and Treasurer while attending the annual meetings and in conducting the necessary correspondence; for publications; for enabling standing committees to fulfill their respective duties and conduct their correspondence; for the encouragement of scientific investigation by prizes, and for defraying the expenses of scientific investigation under the instruction of the Association, where such investigation has been accompanied with an order upon the Treasurer to supply the funds necessary for carrying it into effect.

AMENDMENT.

No amendment or alteration shall be made in any of these rules except at an annual meeting next subsequent to that at which such amendment or alteration may have been proposed, and then only by the voice of three-fourths of all the members present. Provided, however, that when an amendment is properly under consideration, and an amendment thereto is offered germane to the subject, it shall be in order, and if adopted, shall have the same standing and force as if proposed at the preceding meeting of the Association.

BY-LAWS.

1. Order of Business.—The order of business at the annual meetings of the American Medical Association shall be subject to the vote of three-fourths of all the members in attendance. Until thus altered, except when suspended, it shall be as follows:

1. Calling the meeting to order by the President.
2. The report of the Committee of Arrangements on the credentials of members, after the latter have registered their names and addresses; and on such other matters as it desires to present to the Association.
3. The reception of guests of the Association.
4. The annual address of the President.
5. The reception of reports from all special committees.
6. The reading and consideration of reports of standing committees, the Board of Trustees, Business Committee and Judicial Council.
7. New business and instructions to standing committees.
8. The report of the Business Committee and the election of officers of the Association; the selection of next place of meeting.
9. Reports from the Executive Committees of the Sections.
10. Reading of the minutes by the Secretary.
11. Unfinished and miscellaneous business.
12. Adjournment.

MEETINGS.

The Annual Meetings of the American Medical Association shall be held in May if the place be in the South, and in June if the place be in the North. The day of opening of the general sessions shall be the first Tuesday after the first Monday of the month selected. The hour of opening on the first day shall be 10 A.M., and on the following days 4:30 P.M.

SECTIONS.

The several Sections shall hold their first meeting at 1:30

P.M. on the first day, and at 9 A.M. and 1:30 P.M. thereafter daily.

The several Sections are as follows:

1. Practical Medicine.
2. Obstetrics and Diseases of Women.
3. Surgery and Anatomy.
4. State Medicine.
5. Ophthalmology.
6. Diseases of Children.
7. Dental and Oral Surgery.
8. Medical Jurisprudence and Neurology.
9. Dermatology and Syphilis.
10. Laryngology and Otology.
11. Materia Medica. Pharmacy and Chemistry.

Officers of Sections.—The officers of each Section shall consist of a Chairman, Secretary and Executive Committee. The Chairman and Secretary shall be elected annually immediately after the Section is called to order on the afternoon of the second day. During the session of the first day, the Chairman shall appoint a Nominating Committee, consisting, if practicable, of ex-chairmen of the Section, to report at the opening of the afternoon session of the second day. Election shall be by ballot.

The Executive Committee of each Section shall, when first appointed, consist of three members from among those who have been in attendance at the sessions of the Section for at least two years, to serve for one, two and three years respectively; and thereafter the retiring Chairman of the Section shall take the place upon the committee of the retiring member. It shall be the duty of the Executive Committee, in conjunction with the Chairman and Secretary, to give special attention to the interests of their own Section. Thus they shall secure the annual republication from the JOURNAL of the work of the Section, its papers and discussions, lists of officers, lists of all members of the Section, with their addresses, and rules adopted by the Section for the conduct of its work, securing from the Section the funds needful for the performance of this purpose. They shall carefully edit all publications of the Section, and secure a creditable mechanical execution of the same. They shall also take such measures as in their judgment will secure the cordial coöperation of all reputable workers in their special fields in North America.

The several Executive Committees of the Sections shall meet together and form a General Business Committee of the Association, with powers and duties described under the head of the General Business Committee.

The Chairman of each Section, in addition to his duties as a presiding officer and a member of the Executive Committee, shall read a short address at the opening of the session on the first day. In conjunction with the Secretary, he shall secure from members papers to be read, and arrange for the discussion of the same. This order of Section work he shall communicate to the Secretary of the Association at least one month before the annual meeting.

No paper read before the Sections shall occupy more than twenty minutes. If it be longer, the writer should make such an abstract as will bring it within the limit, and present it for discussion. No person shall discuss any paper more than once, or speak longer than fifteen minutes without unanimous consent.

No paper shall be read before any Section that is not in such condition as to pass at once from the reader's hands to the Executive Committee of the Section. Within thirty days said Committee must forward the entire work of the Section to the editor of the JOURNAL, with such recommendations as it deems proper. But no paper shall thus be sent by an Executive Committee that does not fall under one of the following heads:

1. Such as may contain and establish new facts, new modes of practice or new principles of real value.

2. Such as may contain the results of well devised, original experimental research.

3. Such as present so complete a review of the facts on any particular subject as to enable the writer to deduce therefrom legitimate conclusions of importance.

Other papers containing material of more or less value shall be returned to their authors, to be published as they may desire, with the statement that they were read before said Section of the American Medical Association.

In general, it is expected that each Executive Committee will make every effort to secure for its special Section, papers and discussions which will fairly represent the active workers in their department of medicine, and to promote cordial good will among the several workers therein.

PUBLICATION OF PAPERS AND REPORTS.

All papers and reports must be so prepared as to require no material alteration or addition at the hands of authors. All Section work must be in the hands of the editor of the JOURNAL within thirty days after the annual meeting. Proofs will be sent to authors, but they should be returned at the earliest possible moment, and unless returned within two weeks, the paper may be omitted from the JOURNAL. Every paper requiring it shall be illustrated at the expense of the Association, should it accept the same for publication. Every paper accepted is understood to be contributed exclusively to the Association JOURNAL, though brief abstracts of the same may be published elsewhere. In case of an article that is of especial value, the result of expensive research or experimentation, the Trustees, at their discretion, may compensate the writer in accord with the usual price of such work.

The Editor and Board of Trustees has the power to reject any paper referred to it, unless especially instructed to the contrary by the Association.

DUES.

Each member of the Association shall pay the annual subscription to the JOURNAL of five dollars before receiving from the Committee of Arrangements the membership ticket to the annual meeting. The evidence of this shall be the Treasurer's receipt for the five dollars. Any member failing for one year to pay this subscription shall be dropped from the rolls.

DELEGATES.

The President of the American Medical Association is authorized to appoint members, desiring such appointment, as delegates to the several medical and scientific bodies that are in sympathy with the Association.

DUTIES OF MEMBERS.

No members shall be permitted to address the Association unless they shall first have given their name and address, which shall be distinctly announced from the chair. If desirable the member may be required to go forward and speak from the platform.

Failure to do special committee work shall cause the offender to forfeit a continuance of the same appointment, or a place upon any other, unless satisfactory excuse is offered.

It is expected that every member will, in every available way, promote the interests of the medical profession as represented in the Association, and will conform to all its regulations in spirit and letter until they may be altered by the action of the body which formulated them.

THE PREVIOUS QUESTION.

When the previous question is demanded, it shall take at least twenty members to second it. When the main question is put under force of the previous question and negatived, the question shall remain under consideration, the same as if the previous question had not been enforced.

NEW BUSINESS.

No new business, or resolutions by members, shall be introduced at the general session of the Association, except on the first and fourth days of the meetings.

ELIGIBILITY TO OFFICE.

In the election of officers and the appointing of committees by the Association and its President, they shall be confined to members present at the meeting, except in the Committee of Arrangements.

MEDICAL AND SURGICAL EXHIBIT.

There shall be no medical and surgical exhibit, under the authority or recognition of the American Medical Association, other than that made before the several Sections under the supervision of the Business Committee. All that is new and of value to the scientific or practical physician can thus find an appreciative audience. Experience has shown that all other exhibits detract from the work in Sections, and so lessen the attractiveness of the annual meetings to those whose presence is desirable.

Dr. H. D. Didama, of New York, presented and read the minority report. [Not furnished by the Secretary.—ED.]

Dr. E. D. Ferguson, of New York moved the adoption of the minority report.

After some discussion by Drs. Quimby, Bergstein and G. F. Jenkins, a vote was taken, resulting in 160 ayes to 70 nays.

The President announced that by this vote the minority report became the report of the Committee.

Dr. M. M. Walker, of Virginia, moved that the report be now adopted.

Dr. Bergstein, of Nevada, moved that it be read by sections, and compared with the present laws. This was negatived by 100 ayes to 158 nays.

Dr. W. E. Quine, of Illinois, protested against the adoption of the report.

Dr. X. C. Scott, of Ohio, spoke in favor.

Dr. Henry P. Newman, of Illinois, offered the following rule, which was adopted: That no one shall speak more than once on this subject, and for only three minutes; the one who offered a motion to have five minutes.

Remarks were made by Drs. H. O. Marcy, of Massachusetts; Edw. Jackson, of Pennsylvania, and E. D. Ferguson, of New York, when Dr. J. W. Graham, of Colorado, moved to lay the whole subject on the table. This was lost by 84 ayes, 128 nays.

Dr. X. C. Scott moved the previous question, which was sustained.

The ayes and nays being demanded, the roll of delegates was called by the Permanent Secretary, resulting, ayes 151, nays 64. Total vote 215.

Dr. J. B. Roberts, of Pennsylvania, appealed from any decision by this vote on the ground that the laws required a three-fourths vote of *all the delegates in attendance*. The appeal was not seconded.

The President having examined the report of the vote decided that it lacked the necessary majority, and was not adopted.

Dr. E. D. Ferguson offered an amendment to the By-Laws to insert the words, "annual subscription to the JOURNAL of the Association," for "annual dues" wherever it might occur. This was unanimously adopted.

The Association adjourned until Friday, 10:30 A.M.

FRIDAY, JUNE 8.

The President called the Association to order at 10:30 A.M.

The Chairman of the Committee of Arrangements announced a number of communications.

The first business in order being the action upon the By-Laws. On motion of Dr. J. B. Roberts all the amendments as announced were postponed until next year.

Dr. H. D. Holton read the report of the Committee on Revision of the Code of Ethics.

It is proper that a word should be said in explanation. To this Committee appointed at the Detroit meeting, was referred the revision of the Constitution and By-Laws, as well as the revision of the Code of Ethics. Those of you who have ever served on a committee living at such distances from each other, know how difficult it is to arrange for the meeting of such committees. When we did meet, we found that our first meeting was used up in the consideration of the revised Constitution and By-Laws. Although three-fourths of all letters received on the subject desired some change in the Code, there were certain questions that we felt required more study, before we should formulate anything concerning them. At the Milwaukee meeting we so reported, and in that report indicated the lines upon which we believed the revised Code should be written. With an almost unanimous vote that report was accepted, and the Committee continued, with instructions to proceed with the work of revision as indicated. The Committee then felt that they were under specific instructions to perform a particular service, and that the lines along which they were to render this service were plainly indicated. Now what were the lines indicated in that report and which we were directed to follow? They were as follows:

1. We would omit all sections of the Code that describe the obligations of patients to their physicians, and of the public to physicians. The reason for this suggestion is that the Code is not designed either for patients or the public, and so the sections are superfluous. This omits the ten sections under Art. II, on pages 5, 6, 7 and Art. II, on page 20.

2. We suggest the placing in the same list with the copyrighting of medical books and other similar work, the patenting of all mechanical appliances used in medicine or surgery. The Code says nothing respecting the copyrighting of medical publications, and we find no good reason why it should say anything respecting the patenting of mechanical devices.

3. We recommend the more accurate definition of the term, "consultation," as we find good reason to believe that serious estrangement has arisen between physicians because of the different ideas they attached to this term. The Code of Ethics, page 14, second line from the top, says that in a "consultation" the responsibility must be equally divided between the medical attendants—they must equally share the credit as well as the blame of failure. With this statement before us, it is clear that there can be no consultation when one physician meets another for the purpose of obtaining from him an account of the case, or pertinent facts of family history, or a record of the past management of the case, in order that he may more intelligently assume the entire responsibility of its future conduct. Thus the existing Code of Ethics of the American Medical Association defines a consultation substantially as a meeting of doctors to discuss a case, to the end that they may equally share in its further management. By the same authority, a consultation is not a meeting of physicians with a case, in which one gets all the facts possible from the other or others, as a preliminary to his assuming entire responsibility in its future conduct.

From these data it is clear that usually the specialist does not consult with the general practitioner. He simply obtains all the facts the general practitioner possesses, preparatory to assuming full control of the case.

There are many other occasions for the meeting of medical men in connection with cases of sickness, that are in no sense consultations according to the existing Code. Hence we think that in the interest of scientific accuracy, there should be a discrimination made in the study of consultations, as present conditions differ widely from those of forty or more years ago.

Having promised this much, your Committee recommends the alteration of Art. IV, Sec. 1, page 11, Code of Ethics, to read as follows: "A thorough medical education furnishes the only presumptive evidence of professional abilities and requirements, and ought to be the only acknowledged right of an individual to the exercise and honors of his profession. Nevertheless as the good of the patient is the sole object in view, and this is dependent upon personal confidence, no intelligent practitioner who has a license to practice from some medical board of known and acknowledged legal authority to issue such license, and who is in good moral and professional standing in the place in which he resides, should be refused consultation when it is requested by the patient."

4. It is suggested that it would be wise to re-write the Code, in phraseology so plain as to make it a practical common sense document for daily guidance in the performance of our various duties, and an aid in meeting responsibilities incident to our professional life.

We have followed the lines of these four recommendations and have also aimed,

1. To arrange, so far as practicable, all topics of the same nature under the same heading. As the Code now is, cognate subjects are scattered promiscuously through the entire document.

2. To make the different headings more definite in their designation of the subjects contained under them.

3. To separate questions of ethics from those of etiquette.

4. To make the Code correspond with and acknowledge the immense changes which have taken place in the profession since it was first written.

5. To avoid all reference to medical sects and irregular practitioners; because such reference sullies the dignity of the Code, and because it is a recognition of the existence of that which we believe should not exist, and because it is the most efficient means of perpetuating the objectionable condition.

6. In view of the fact that there are so many women practitioners of acknowledged learning, reputation, and skill, the language of the revision omits all reference to sex.

Finally, the fundamental requirement of the Code is the possession of such a liberal education, training and culture in the humanities, the arts, and the science and art of medicine itself, as will make every member of the profession a gentleman and a scholar, the peer of the members of all the other learned professions, and in that way to establish the

dignity of the profession on a surer basis than can be reached by hedging it in with any system of penal enactments.

For two months the work of the Committee has been before this Association. In that time a feeble attempt has been made to criticise this work. First, by following the custom of certain attorneys when their case is especially weak, to fall to and abuse the attorney of the other side. These critics have insisted that the Committee ought not to have presumed to have performed the task assigned them, but should have kept silence. This the Committee could not in honor do. They were directed to do a certain thing. Of letters received by the Committee upon this subject, more than three-fourths of the writers desired some change in the existing Code. We all know that in the last few years there has sprung up several large national societies to discuss the various phases of medical science. That they number in their membership some of the brightest scientific minds in the profession, some of whom formerly met with us and all of whom ought to be with us. In their articles of organization I do not find anything about our time-honored Code. If this Association is to hold the place for which it was originally organized, that of leading the profession, it has got to divest itself of such rules and regulations as have become dead letters and which it has not enforced for more than a decade because it could not. We may ostrich-like hide our heads in the sands of bigotry, and imagine that we are safe, while we listen to those sirens who chant of the sacred halo which forty-seven years has thrown around our Code. But we shall find that the bacilli of progress is, and has been at work in the profession at large, until this sacred halo of age can not eradicate them. This sleepy bigotry which would accept no change because present methods have answered well enough for the last half century, if applied to the different branches of our profession, would have prevented the wonderful triumphs of aseptic surgery. It would have left to some dim future the achievements of our professional gynecologists, and subjected us to the ridicule of the world. The eternal principles of truth and justice do not change, but the application of them does change as the environment of man changes.

The principles of law remain the same as in the days of the Roman Empire, but their application to the changed conditions of commerce and business varies with each stride of progress.

You may vote it down, as has been the cry of some, but like Banquo's ghost it will not down. For twenty yearsit has annually haunted us. In the centennial year of our Republic, that great and good man, justly eminent and held in the highest esteem, not only on this continent but by the whole civilized world, the then President of this Association, J. Marion-Sims, in his address to the Association, as if with prophetic eye, said in speaking of the Code of Ethics: "I know there are many, indeed a large majority, of this Association who believe it to be as perfect as the Decalogue, and as incapable of improvement. It is looked upon by some of its high priests as the holy of holies, and not to be desecrated by the touch of vulgar hands. . . . Pardon me if I ask you, 'Is the Code of Ethics up to the requirements of the times?' Under our Code, all consultations are secret and confidential, and the friends of the patient are never to know that there was a difference of opinion betwen the consultants. But was there ever such a difference that it did not leak out, sooner or later? Why should it not be so? Why should honest consultants act out such a deception as our Code falsely teaches? . . . The Code of Ethics is violated every day, either wilfully or ignorantly. Not only by the rank and file, but by men high in the profession. Men who are considered leaders, advanced thinkers and workers. There is not a man within the sound of my voice who can not call to mind some violation of the letter or spirit of the Code of Ethics, that has occurred under his own immediate observation. Indeed, when we speak of violating the spirit of the Code we may all, as one man, cry out: 'He that is without sin among you, let him first cast a stone?'

"The time will come when your organic laws, like the Constitution of our country, will require modifications and amendments to suit a higher intelligence, a broader education and a greater destiny. Remember that when our Code, was adopted we had no telegraph, no ocean steam navigation and but few railroads; the profession was not educated up to its present level, medicine was more of a mystery than it is now, and the press was not the organized power in the land it is to-day. Modern thought and modern progress, keeping pace with the physical development of the age, will never be content with the slow, uncertain movement of olden times." Has not the time arrived for the fulfillment of the prophecy of this wonderful man? As Holmes has said:

"In opinion look not always back;
Your wake is nothing, mind the coming track;
Leave what you've done for what you have to do;
Don't be 'consistent,' but be simply true."

HENRY D. HOLTON, Chairman.

Dr. H. D. Didama read the minority report.

REPORT OF THE MINORITY OF THE COMMITTEE ON REVISION OF THE CODE OF ETHICS OF THE AMERICAN MEDICAL ASSOCIATION.

SAN FRANCISCO, JUNE 8, 1894.

One year ago, at the meeting of the AMERICAN MEDICAL ASSOCIATION, the minority of the Committee on Revision reported against any kind of revision of the Ethical Code:

"1. Because the language of the Code is clear, concise and accurate, and conveys to the mind the soundest ethical principles derived from the maxims of all civilized nations, compiled and admirably arranged by practical men of acknowledged ability and wisdom.

"2. Because the Code is explicit, liberal, broad, humane and founded on truth, justice and reason, and is free from magisterial assumption or oppressive exaction.

"3. Because the Code contains full particulars, without superfluous details, for the guidance of all physicians, for the instruction of beginners and for the information of the people."

A careful examination of the revised Code, as published by the Majority Committee in the JOURNAL a few weeks ago, has served only to confirm the opinion expressed by the Minority Committee at the Milwaukee meeting.

It would be a needless and wearisome consumption of the valuable time of this ASSOCIATION to point out the omissions from, alterations of, and additions to, the Code which have received the signatures of the Majority Committee. You are familiar with them all. You know that whole Articles, such as those relating to the "Obligation of Patients to their Physicians," and of the "Public to the Profession," have been stricken out.

You know that the Article on the "Duties for the Support of Professional Character" has been emasculated by removing "the section which enjoins a high standard of moral excellence and purity of character on the part of the physician."

It can not have escaped your notice that certain varieties of advertising condemned by the present standard Code are commended in the revision, and that the patenting of surgical instruments and the prescribing of secret nostrums forbidden by the standard are intentionally ignored by the revisers.

And you have read—many of you, possibly with surprise and grief—the statement in the proposed revision that the possessor of a *license* granted by a board of acknowledged *legal* authority should not be refused consultation when requested by a patient.

Some of you, of your own free will and accord, and as loyal representatives of State societies which have spoken with no uncertain sound, undoubtedly hold the opinion that legality and fitness are not interchangeable terms. Notwithstanding the ingenious arguments of the eminent gentlemen who constitute the Majority Committee, you are not convinced that consultations of regular physicians with irregular practitioners are proper or beneficial to the patient. The irreglar may be honest and sincere. He may have received a collegiate education. He may be a pillar in the church. He may thoroughly know anatomy and chemistry and biology. He may be able to speak with the persuasive tongue of eloquent men and of angels. And yet if he, by ignoring, or rejecting the rational materia medica and therapeutics upheld by all regular physicians throughout the world, and professing to be governed in his practice by a metaphysical dogma, demonstrates that he and the regular doctor have absolutely nothing of any practical importance in common, some of you steadfastly believe that a pretended consultation in these circumstances would be, even if the patient desired it, an imposition and swindle which no sophistry can rectify, no plea of liberality palliate, no fee recompense or excuse.

Abstaining from all argument, after the example of our excellent President in his address, the Minority Committee ventures to express the conviction, founded on abundant observation and experience, that the adoption of the Majority report would conduce, not to the welfare and harmony of the ASSOCIATION and the profession, but to the injury and degradation of both. Respectfully submitted,

HENRY D. DIDAMA, M.D.

Dr. E. F. Ingals, Illinois, moved to lay the minority report on the table. This was rejected.

Dr. X. C. Scott, Ohio, moved that the minority report be substituted for the majority report. This was adopted.

Dr. J. H. Parkinson, California, seconded by Dr. Scott, moved that the consideration of the report be indefinitely postponed; this was withdrawn by the mover, with the consent of the seconder.

Finally, on motion, the report was laid on the table. Ayes, 135; nays, 30.

The Addresses on Surgery and on State Medicine were by request of their authors, (both being absent) read by title.

The report of the Committee on Nominations was presented by Dr. J. Cochran, Chairman, as follows:

REPORT OF NOMINATING COMMITTEE.

The Nominating Committee herewith submits its report:
President, Donald Maclean, of Michigan.
First Vice-President, Sterling Loving, of Ohio.
Second Vice-President, Wm. Watson, of Iowa.
Third Vice-President, W. B. Rodgers, of Tennessee.
Fourth Vice-President, F. S. Bascom, of Utah.
Treasurer, Henry P. Newman, of Illinois.
Permanent Secretary, Wm. B. Atkinson, of Pennsylvania.
Assistant Secretary, G. H. Rohé, of Maryland.
Librarian, Passed.
Place of Meeting, Baltimore, Md.
Chairman Committee of Arrangements, Julian J. Chisholm, of Maryland.
Board of Trustees:—Jos. Eastman, Indiana; J. T. Priestley, Iowa, and D. W. Graham, Illinois (full term); John E. Woodbridge, Ohio (unexpired term); J. W. Graham, Colorado, *vice* D. C. Patterson, (deceased).
Judicial Council:—D. W. Crouse, Iowa; R. C. Moore, Nebraska; T. D. Crothers, Connecticut; G. B. Gillespie, Tennessee; W. T. Bishop, Pennsylvania; C. H. Hughes, Missouri; I. J. Heiberger, District of Columbia, and H. Brown, Kentucky (unexpired term).
Address on Medicine, William E. Quine, Illinois.
Address on Surgery, C. A. Wheaton, Minnesota.
Address on State Medicine, H. D. Holton, Vermont.

(Signed.) JEROME COCHRAN, Chairman.

On motion of Dr. B. R. Cole, California, the report was received, and declared to be approved.

On motion, the President and Permanent Secretary were authorized to appoint delegates to foreign societies.

Dr. Edw. Jackson, Pennsylvania, offered the following:

WHEREAS, The interests of the JOURNAL of the Association require that it should command the confidence of the members of the societies in affiliation with this Association; and

WHEREAS, The JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION has continued to publish unethical advertisements, like those of "Antikamnia," "Labordine" and other secret nostrums, and that of the American Physicians' Sanitarium Company, offering one hundred dollars worth of stock to physicians sending it patients; and

WHEREAS, The Trustees of the JOURNAL have defended such a course on the grounds that the money from such advertisements was needed to publish such a journal as they thought creditable to the Association,

Resolved, That the various State Medical Societies in affiliation with this Association are hereby requested to inform this Association whether their members approve the policy of admitting such advertisements to the pages of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Dr. X. C. Scott moved to lay it upon the table. Lost, 102 to 113.

After discussion by Drs. Cochran; Dickson, of California; Hamilton, Illinois, Dr. Jackson agreed to strike out the preamble. Finally on motion of Dr. Cochran, the resolution was referred to the Judicial Council.

Dr. H. O. Marcy, Massachusetts, moved to take from the table all questions as to the Constitution, By-Laws and Code of Ethics. Adopted, 100 to 91. After some discussion, he moved to indefinitely postpone the entire matter. The previous question was called, sustained by a sufficient number, and being put, Dr. Marcy's motion was agreed to by a large majority.

Dr. W. T. Bishop, Chairman of Committee on the President's Address, made the following report:

The Committee to whom was referred the Address of our President, James F. Hibberd, M.D., LL.D., Richmond, Ind., respectfully report:

The change of date from May to June, 1894, is approved. Credentials might be issued in duplicate, one copy given to delegate, and one copy or list of delegates with power of substitution forwarded to Secretary of American Medical Association, and he to furnish list of recognized bodies to Committee of Registration, the effort to be, as the President suggests, to get all members of the regular practice into the American Medical Association through State and county societies.

With the President we can not approve the turning of the Association over to the control of the sections; the sections should remain as they are and have their own officers, etc., as now provided for, the Nominating Committee representing men who are in the general or special practice of their several States and counties are sure to select proper officers, having done it for fifty years, the Association not being bound to accept the officers named having the power to amend the report of the Nominating Committee or refer it back for correction.

The American Medical Association should invite the attention of the Congress of the United States of America as represented in the Senate and House of Representatives, to the fact that we are opposed to the reduction of medical men from 125 to 90, or any other number less than at present provided for, 125 assistant surgeons; let the officers of our Association and the officers and members of State and county societies at once act; this is a matter of great importance to the Army and the country at large.

The appropriation to Index Catalogue and Library should be increased, as before the proposed reduction, to $10,000.

The whole profession in this country, as well as Europe, are interested in this subject.

We urge the continuous effort for the Department of Public Health, but recognize that if organized it, like bills organizing State Boards of Medical Examiners, will either lack much that we desire or contain much that we do not desire. We want a Department, and can repair or improve it afterwards. This last may take time, and all will require some money to secure what we wish,—the money and labor, etc., now spent must be secured by further effort.

The effort should be made at all times to promote vaccination and establish proper sanitary conditions—the physician in his daily practice has much to do with preventing disease; the large population that is "on the move" makes it necessary that every good citizen should be on guard to prevent the spread of disease and crime.

Since our last meeting some States have provided for a Board of Medical Examiners, who will examine all who come into their State to practice medicine; the Board to be composed of members of the profession, but not connected with any teaching institution.

The medical profession and the world at large require from the practitioner more than ever before, knowledge founded upon education. The microscope and the cultures of the investigator make certain what was once surmised.

The attention is called to the constant amendments that are being offered to the Code and Constitution, and the members are warned to avoid ill feeling in the discussion of these questions.

The Address in general is most heartily approved.

W. T. BISHOP, Chairman.

REPORT OF THE BUSINESS COMMITTEE, JUNE 6, 1894.

The Business Committee recommends to the Association the adoption of the accompanying resolution of Dr. Marcy which was referred to it. It also recommends the adoption of the agreement with the Newberry Library of Chicago in regard to the transference of the Library, with the alteration made upon it, that the future deposit of books, etc., be optional with the Association and not obligatory.

The Committee also recommends the adoption of the following resolution in regard to the issuing and printing of the official program for the annual meeting:

Resolved, That the official program containing the appointments for the general sessions and the work of the sections shall be printed at the office of the JOURNAL of the Association, and in order that this may be accomplished, the officers of the Sections and the Committee of Arrangements shall

transmit the program of the business and scientific proceedings so that it shall be in the hands of the Permanent Secretary of this Association at least one month before the date of each annual meeting. The list of entertainments shall be prepared by the Committee of Arrangements and as far as practicable shall be included in the official program.

The Business Committee also ask if they are empowered to receive business directly from the sections before it has been presented to the Association, and if such is not included in their present authority, ask that the same be granted, as it believes that much time will thus be saved, and the work of the Association forwarded.

L. DUNCAN BULKLEY,
Secretary Business Committee American Medical Association.

The Business Committee, to which was referred the suggestions contained in the Treasurer's report, recommend as follows:

1. That the Constitution be amended in that portion relating to the necessity of electing to office only those who are present at a meeting, so that the Treasurer be not thus included.

2. That the Treasurer receive compensation commensurate with the services required of him, and recommend that three hundred dollars ($300) be appropriated for that purpose.

The third suggestion, regarding delinquency in the payment of dues, the Committee consider has been already met by the change in Constitution passed yesterday, so that no further action thereon is necessary.

The Committee recommend that the Board of Trustees appropriate three hundred dollars ($300) for the salary of the Permanent Secretary.

The officers for the ensuing year are: Chairman, Dr. E. E. Montgomery, Philadelphia; Vice-Chairman, Dr. J. M. Duff, Pittsburg; Secretary, Dr. L. Duncan Bulkley, New York

L. DUNCAN BULKLEY, M.D.
Secretary Business Committee.

On motion, the report was adopted and the Committee were discharged.

On motion of Dr. X. C. Scott, the Trustees were instructed to publish each week the Explanatory Declaration relative to the Code of Ethics. (See pages 19 and 20 of Code.)

Dr. J. T. Priestley, Iowa, offered an amendment to the Constitution, which was laid over.

Dr. I. N. Quimby, New Jersey, offered an amendment to Section 5, Art. I, page 9, to strike out "surgical instruments, or." Laid over as an amendment.

The report of the Committee to Act with the Committee of the American Public Health Association was presented, accepted, and the appended resolution adopted:

The report of Dr. C. G. Comegys, Ohio, as Chairman of Committee on Secretary of Public Health, was laid before the members.

REPORT OF THE SPECIAL COMMITTEE APPOINTED TO PETITION CONGRESS TO CREATE A DEPARTMENT AND SECRETARY OF PUBLIC HEALTH.

Mr. President and Members of the American Medical Association:—Your Committee has endeavored, since the last session at Milwaukee, to advance the work committed to our charge, and beg leave to report progress. In the course of our efforts to secure the passage of our original bill which has heretofore, both at the annual sessions at Detroit and at Milwaukee, been laid before you, and which was introduced into the Fifty-second Congress in both Houses, in December, 1891, we found that a strong opposition was made to its favorable report from the committees in the Senate and House of Representatives by the Chief of the Marine-Hospital Service, because it seemed to him to encroach upon the functions of his office as Director of quarantine affairs, and that it would greatly embarrass his work. This was not intended at all by your Committee; therefore, as our bill appeared to lie dormant in the hands of the congressional committees, and as the dread apprehension of the entrance of Asiatic cholera through our commercial intercourse had so aroused Congress to the necessity of strengthening the quarantine service, making it apparently unnecessary to extend legislation in the direction of public health at that time, we were advised by friends in Congress to cease further efforts until the second session. At the opening of the second session, in December, 1892, it was found that one of our important friends in the House Committee was ill—in fact, was unable to take his seat at any time during the session.

Your Committee then determined to await the opening of the Fifty-third Congress, in December, 1893, for a renewal of our activity. In the meantime the great Pan-American Medical Congress met in Washington, in September, 1893, and we took advantage of the assembly of that body of eminent medical men to bring before it the importance of the creation of Departments of Public Health in all governments, under the direction of a secretary appointed from the medical profession, who should be on a parity, in the Cabinet of the President, with the Secretaries of other Departments. Our proposition was referred to the Committee on State Medicine and, after a most thorough discussion by eminent practitioners of different States, was adopted with but one dissenting voice.

Your Committee next, after due consultation, concluded that, in order to avert the opposition of the Marine-Hospital Service, it would be wise to reconstruct our bill so as to leave out any reference to the supervision, by the Secretary of Public Health, of the quarantine service; merely referring to it as an available source of information for the general purposes of public health, on the same plane as that furnished by the Surgeons-General of the Army, Navy, the State Boards of Health, and all municipalities, hospitals and asylums throughout the country.

Therefore, we re-drafted our petition and bill, in regard to the establishment of the Health Department and the Secretary of Public Health (copies of which accompany this report), and they have been introduced into the present Congress—in the Senate by the Honorable Mr. Gray, of Delaware, and in the House by the Honorable Mr. Goodnight, of Kentucky—and have been referred to appropriate committees. Our report and petition have been published in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, commended by the Editor, and also by other leading journals, and have been favorably spoken of by a multitude of eminent men in our profession everywhere.

We regret to say that there are members of the profession who are inimical to this movement of the Association to obtain increased rank and dignity in the affairs of the general government, not on account of what we specify as the true relation of the profession in the body politic in regard to its capabilities in preventive medicine, but because such a high office may involve us at length in the mire and filth of partisan politics, and we shall be made a low section of what is called the "political machine." This is an astonishing view to take of a profession that in its career in all history, and exceptionally so in the nineteenth century, is conspicuous in its service to the people, for its moral purity and broad and generous liberality. We protest against this consideration of our probable influence in public affairs. These hesitating friends seem to be willing enough to obtain the establishment of a Bureau of Public Health under the supervision of the Secretary of the Interior or of the Treasury; why should not the same apprehension of defilement attach to these Departments as to a Department of Public Health?

There are numerous medical men in every State in the Union whose intelligence, statesmanship and moral character is as strong as that of the men who are usually at the head of other Departments in the Cabinet.

There are others who say that this attempted elevation to a representation in the Cabinet of the President is too sudden and startling; that an office of such eminence can only be acceptable to public opinion after a lengthy novitiate as a commission of public health shall have shown its necessary utility in affairs appertaining to the health of the people; that its expenditures will become an additional burden to our tax ridden people, and this tendency to centralizing power in the Capital will be an additional limitation of the rights of the States in the Government.

The provisions of our bill answer sufficiently all these objections and show, on the contrary, that our influence for the promotion of preventive medicine will become greatly enlarged; in fact, that by no other method can the influence of our profession for the promotion of public order, comfort and virtue be as thoroughly displayed.

Our success has been greatly compromised by the action of the New York Academy of Medicine in their endeavor to frustrate our movement by the preparation of bills to obtain

an action of Congress to extend, in various ways, the existing quarantine laws and to keep the profession under the autonomy of either the Secretary of the Treasury, or the Secretary of the Interior; and their plan has been urgently pressed upon the attention of the State and medical societies and State Boards of Health throughout the Union. It is proper to say that, in the early part of our undertaking, we made an appeal to an eminent member of that Academy to bring our petition and bill before the Academy and to request its potent coöperation in our behalf. That member treated our communication courteously and we thought that he felt a warm sympathy with the movement; but, at length, he replied that there was an unwillingness on the part of several members to have it presented to that Society. This was a serious disappointment to us and was much regretted. For that Society is composed of distinguished medical men and is doing a notable quantity of scientific work; but we think it must be conceded that the AMERICAN MEDICAL ASSOCIATION, which for nearly fifty years has been holding its sessions in all the chief cities of our country and has been sustained by the greatest minds in medicine, has a stronger claim to represent the profession in the Congress of the United States than the very eminent local organization in the city of New York.

It is not probable that any bill can pass at this session of Congress, but the ASSOCIATION should at this time direct that a renewed effort should be made so as to be ready to make the most powerful effort possible to secure the passage of our bill at the next session. Such consolidated effort can only be made effective by an organized effort in every congressional district in the Union.

In conclusion, we beg to offer the following resolutions:

Resolved, That the AMERICAN MEDICAL ASSOCIATION renews its appeal to the Congress of the United States to adopt the bill now in its possession for the creation of "A Department and a Secretary of Public Health."

Resolved, That the Committee proceed as soon as possible to secure subcommittee in each congressional district of the country to obtain a favorable action on the part of their Senators and Representatives for this measure.

Resolved, That a committee be appointed to endeavor to secure the friendly coöperation of the New York Academy of Medicine.

Resolved, That a sum not exceeding four hundred dollars be appropriated to defray the necessary expenses of the committee in carrying on their work.

All of which is respectfully submitted.

C. G. COMEGYS, M.D.
N. S. DAVIS, M.D.
U. O. B. WINGATE, M.D.
J. C. CULBERTSON, M.D.
W. B. ATKINSON, M.D.
L. H. MONTGOMERY, M.D.

REPORT OF THE COMMITTEE APPOINTED BY THE AMERICAN MEDICAL ASSOCIATION TO ACT IN CONJUNCTION WITH A COMMITTEE OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.

Mr. President, and Members of the American Medical Association:—Your Committee appointed at the last meeting of the American Medical Assotiation, held in Milwaukee in June, 1893, "to act in conjunction with a Committee of the American Public Health Association to make efforts to induce the Congress of the United States to establish a Medical Bureau and Commissioner, who shall be the Chief Executive Officer of the General Government," would submit the following report:

Your Committee met with the Committee on Legislation of the American Public Health Association at Chicago, where the annual meeting of the Association was held, Oct. 9–14, 1893.

Dr. J. H. Parkinson, of California, not being able to be present, requested the President of the American Medical Association to appoint some one to act in his place. The President of the American Medical Association, Dr. James F. Hibberd, of Indiana, being present, by request and universal consent of both Committees acted on your Committee in the place of Dr. Parkinson.

After considerable discussion there was a disposition shown to take no action further than what the American Public Health Association had formerly taken in regard to the matter, but it was finally decided that the Association should place itself on record in some manner to show that any legislation aiming for a lesser object than that of providing for some national head with general sanitary authority, should not be encouraged.

A portion of your Committee believed, and still believe, that no lesser office than that of Secretary of Public Health in the Cabinet of the President should be encouraged, but as it was impossible to convince the members of these two Committees that such course was the only advisable one to pursue, the following resolution was submitted and adopted by the American Public Health Association as a compromise between the two factions of the joint Committee:

Resolved, That the American Public Health Association again urge upon Congress the necessity of the appointment of some officer with general sanitary authority in connection with the National Government;

That the functions of such an authority are of sufficient importance to demand the exclusive attention of the best instructed sanitarian;

That such authority should be enabled from time to time, and under proper regulations, to secure the acvice and cooperation of the State Boards of Health.

Respectfully submitted,

U. O. B. WINGATE,
JAMES H. PARKINSON,
JEROME COCHRAN.

Dr. Jerome Cochran presented the following from Alabama:

Resolved, That the Medical Association of the State of Alabama, which is also the State Board of Health, is earnestly in favor of the passage of the bill now pending in Congress, to establish a Department of Public Health, and recommends said bill to the favorable consideration and support of the members of Congress, Senators and Representatives from Alabama.

Resolved, That we believe the bill would be materially improved by the insertion of an additional clause in the following words: "He shall once in every year, call to meet in the city of Washington, a conference of State Boards of Health, to be composed of one delegate from every State Board of Health in the United States, and to be for the purpose of discussing questions of public health, and for concerting plans of sanitary administration."

On motion of Dr. C. Denison, Colorado, the report was received, the addition proposed by Alabama accepted, the resignation of Dr. Comegys as Chairman accepted, and Dr. Cochran appointed Chairman.

The reports of the Business Committee were received and on motion accepted.

A notice from the Section on State Medicine, relative to Dr. J. H. Rauch, Illinois, deceased, was presented and adopted.

Mr. President and Members of the Section of State Medicine of the American Medical Association:—Your Committee appointed by the chair to draft and offer suitable resolutions upon the death of one of its honored members, the late Dr. John H. Rauch, of Illinois, beg leave to submit the following:

WHEREAS, Dr. John H. Rauch, an old and active member of the American Medical Association, a sanitarian of more than national reputation and worth, one whose entire professional life was identified with and devoted to State Medicine and sanitary science, and to whose personal efforts and perseverance the present existence of this Section is largely due, who at all times exhibited enthusiastic interest in its work and welfare, has recently been called to his final rest; therefore, be it

Resolved, That the Section of State Medicine by the death of Dr. Rauch painfully realizes that it has not only lost an active, earnest and devoted member, but that the science of sanitation and of medicine in general sustains an equally deplorable loss. Moreover, on account of Dr. Rauch's long and active connection with the American Medical Association, his unselfish devotion to his profession in times of war, peace and pestilence, and because of his national reputation, so deservedly won, we deem it only right and proper that we recommend to the American Medical Association at its present session, that it take some appropriate notice relative to the death of so distinguished, faithful and honored a member.

(Signed) LISTON H. MONTGOMERY,
H. D. THOMASON,
C. A. RUGGLES,
Committee.

The foregoing preamble and resolution were unanimously adopted by the Section of State Medicine this P.M.

LISTON H. MONTGOMERY, Secretary.

The following from the Section on Materia Medica and Pharmacy was presented, and on motion adopted:

Resolved, That the American Medical Association directs the attention of the medical colleges of this country to the general neglect of the study of botany by medical students, and that it is the sense of this Section that the teaching of general descriptive botany should be made a part of the curriculum of study in every medical school. The delegates present at this meeting from the American Pharmaceutical Association concur in this action.

Resolved, That the American Pharmaceutical Association be invited to contribute to the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION reports of and examinations of proprietary and secret nostrums, made under its direction. The officers of the Section on Materia Medica and Pharmacy to act with a committee to be appointed by the American Pharmaceutical Association, as a Committee of Conference in order to carry this resolution into effect.

As delegates to British Medical Association, Drs. C. A. L. Reed, Ohio; A. L. Hummel, Pennsylvania, and L. S. McMurtry, Kentucky were named.

Dr. Plummer, Chairman of Committee of Arrangements, announced that the number of those who had attended exceeded the expectations of the Committee. Twelve hundred delegates, visitors and ladies had been registered, and he thanked all for their presence at the meeting in San Francisco.

Dr. H. D. Holton, offered the following:

Resolved, That the most cordial thanks of this Association are due and are hereby tendered to the profession of California, the medical societies, the citizens of San Francisco, the Directors of the Midwinter Fair, the railroad officers, and all who have so generously contributed to make our visit to the Pacific Slope successful, pleasant and a memory that will live to cheer us during all our lives.

Resolved, That the thanks of the Association are hereby tendered to the President, Secretary, and other officers who have contributed to make this one of the most successful meetings in the history of the Association.

These were seconded by Dr. Marcy, and unanimously adopted.

The Permanent Secretary read as officers of sections.—

PRACTICE OF MEDICINE:
Chairman, E. W. Kellogg, Milwaukee, Wis.
Secretary, W. E. Quine, Chicago, Ill.

SURGERY AND ANATOMY:
Chairman, Jos. Ransohoff, Cincinnati, Ohio.
Secretary, Reginald H. Sayre, New York.

OBSTETRICS:
Chairman. F. H. Martin, Chicago, Ill.
Secretary, X. O. Werder, Pittsburg, Pa.

STATE MEDICINE:
Chairman, L. H. Montgomery, Chicago, Ill.
Secretary, C. H. Sheppard, Brooklyn, N. Y.
Executive Committee, C. A. Lindsley, New Haven, Conn.; H. S. Orme, Los Angeles, Cal., and J. J. Kinyoun, Washington, D. C.

DERMATOLOGY AND SYPHILOGRAPHY:
Chairman, A. E. Regensberger, San Francisco.
Secretary, D. H. Rand, Portland, Oregon.
Executive Committee, L. D. Bulkley, New York; L. A. Duhring, Philadelphia, and A. H. Ohmann-Dumesnil, St. Louis, Mo.

DENTAL AND ORAL SURGERY:
Chairman, M. H. Fletcher, Cincinnati, Ohio.
Secretary, E. S. Talbot, Chicago, Ill.

OPHTHALMOLOGY:
Chairman, Edward Jackson, Philadelphia.
Secretary, H. V. Würdemann, Milwaukee, Wis.

NEUROLOGY AND MEDICAL JURISPRUDENCE:
Chairman, Daniel R. Brower, Chicago, Ill.
Secretary, W. J. Gavigan, San Francisco, Cal.
Executive Committee, John W. Givens, Blackfoot, Idaho; T. D. Crothers, Hartford, Conn.; A. E. Regensburger, San Francisco, Cal.

LARYNGOLOGY AND OTOLOGY:
Chairman, J. F. Fulton, St. Paul, Minn.
Secretary, T. J. Gallaher, Pittsburg, Pa.

DISEASES OF CHILDREN:
Chairman, Edward H. Small, Pittsburg, Pa.
Secretary, Geo. W. McNeil, Pittsburg, Pa.

MATERIA MEDICA AND PHARMACY:
Chairman, W. L. Whelpley, St. Louis, Mo.
Secretary, Geo. F. Hanson, San Francisco, Cal.
Executive Committee, F. Woodbury, Philadelphia; F. E. Stewart, Watkins, N. Y.

PHYSIOLOGY AND DIETETICS:
Chairman, E. H. Woolsey, Oakland, Cal.
Secretary, Chas. G. Chaddock, St. Louis, Mo.
Executive Committee, I. N. Love, St. Louis, Mo.; W. T. Bishop, Harrisburg, Pa., and Ephraim Cutter, New York.

President Hibberd appointed Drs. H. D. Holton and L. Cooper Lane to escort the President-elect to the platform.

Dr. Donald Maclean, of Michigan, the President-elect, in accepting the office, thanked the members and asked their aid in making the next meeting a success.

Dr. Hibberd, in retiring, thanked the members for their courtesy and general efforts in the success of this session.

The Association then adjourned to meet in Baltimore, Md., in June, 1895. W. B. ATKINSON, Permanent Secretary.

Address of Welcome to the American Medical Association, on the Occasion of its Visit to Cooper Medical College, June 6, 1894.

BY L. C. LANE, M.D.
PRESIDENT OF COOPER MEDICAL COLLEGE.

I extend to you a cordial welcome and sincerely thank you for this visit to Cooper Medical College; and its Faculty unite with me in this greeting. And further, let me thank you for your friendly act in visiting this State so remote on the sunset side of our Continent. You have learned how much time, labor and money it costs to reach us; and when I remind you that it has always cost us the same to reach you, I am sure you will find a satisfactory reason for the usual absence of the most of our profession from the annual conventions of this ASSOCIATION in the East.

The AMERICAN MEDICAL ASSOCIATION may be compared to a planet of spacious orbit; and like Jupiter or Saturn in the heavens, it requires many years to complete this orbit; and as it has again reached its aphelion I am happy to chronicle that from its strength, vitality and unimpaired activity one sees assurances of enduring life as far as he can project his vision into the future; so that our ASSOCIATION may fear no eclipse nor penumbral obscurity. And though ethical or other turbulent agency may, volcano-like, cause occasional disturbance, yet such disorder will be local and limited, and cause no digression from the established orbit. For an association having purposes such as this one, viz., the advancement of that knowledge which will alleviate the sufferings of afflicted humanity, has within its bosom the inherent elements of life; since inasmuch as in the Book of Existence, Fate has recorded against every birth and life, disease and death, the tasks of medicine will never end.

Your visit, gentlemen, to a medical college is eminently appropriate; for one of the objects which was had in view by the originators of the AMERICAN MEDICAL ASSOCIATION was to elevate the standard of medical education in the United States. And to the honored founder of this ASSOCIATION, Nathan S. Davis, chief credit is here due; and if a suitable chaplet were given him for his services for elevating medical teaching in our country, such a wreath should be woven of the olive, the laurel, the pine and the parsley; thus combining all grades of honor which were awarded to the victors in the ancient Grecian games. In him we see the happy union of precept and example; for in the presence of a powerful rival, he founded the first medical school in which a graded course was pursued and the curriculum of studies extended. The tree planted by Dr. Davis has grown until its branches overspread our continent; until, to-day, the most of American medical colleges have adopted a course of three years; and a few have gone farther and

adopted a curriculum of four years. A course of four years has been adopted, and is in action, in Cooper Medical College. And whether this change will lessen or increase the number of students is not a matter which renders our Faculty uneasy, since for the last fifteen years, its members have contributed their portions of their income from teaching to a common fund which is used, from time to time, for the purchase of instruments and other apparatus required for aid or illustration in teaching.

It is most desirable that the ASSOCIATION should continue its praiseworthy action in elevating our schools to a high degree of excellence in their work, until all colleges shall adopt a quadrennial curriculum, of two terms each year; and such curriculum to be complete, requires that in the several departments the lectures and instruction should be logically articulated and differ from each other in the several years. When our medical schools thus do their work each will become a luminary of trustworthy light; and such luminous centers scattered across our Western world will recall a sublime scene recorded in epic verse when it was agreed between the Greeks before Troy and their friends at home, that when Ilion should fall the news should be conveyed by signals of light; and the description of this event, as torchlight flashed to torchlight from peak to peak, and from vale to vale, is one of the most sublime and exciting pictures which has come to us from antiquity.

I heard Prof. Erichsen say after his return from visiting the medical institutions of the United States, that the time was not remote when English students, instead of going to the Continent to continue their medical studies, would go to America. Twenty years have elapsed since that time; and in the meantime medicine has made such upward strides with us that the European medical student has now much more to attract him to America; and especially is this true for the English student, who in his visit to France and Germany rarely so learns the language that he understands the foreign speaker.

In the standard of medical education which our Faculty has established here, the latter has indulged the hope that students might be attracted here from the East. In our literary school at Palo Alto, in which California has much pride, I may add that such a hope of the founder has been realized; you will find there many students from the Eastern States.

Realizing that theoretical teaching without a practical application of the principles taught, soon vanishes from the student's memory, and is nearly valueless to him, this school from its commencement has had a dispensary in connection with it, in which what is taught is actually verified. Last year about three thousand cases of disease were here treated. And this work combined with the opportunities for observation of the sick in our City Hospital which our students enjoy, will, in future be further enlarged by the additional clinical field which will soon be opened to them in the hospital which I have erected adjacent to Cooper College, and which will soon be ready for occupancy.

A fact or two in reference to the difficulties under which the hospital has been erected will not be uninteresting to you. It should be premised that there has always been the most irrational antagonism to the erection of hospitals in San Francisco. As the city enlarged, ordinance after ordinance has been enacted by the municipal authorities, extending the limits within which such institutions should not be erected; and these bounds to-day are so enlarged that it is forbidden to build any more hospitals on the Peninsula of San Francisco, unless certain conditions are complied with, which are of a nature which so hamper and discourage the applicant, that except the present building, all individual enterprise in this field has been deterred. Municipal authority, and the more illiberal portion of our people have come to regard hospitals, even those for non-contagious diseases, as a thing to be dreaded like a pestilence. A city father who was the author of an ordinance which excluded hospitals from this part of our city, as rejoinder to my plea against such enactment, said to me: "If you wish to build a hospital there is room for it across the bay in Alameda County." But it is an ill wind that is not fair for some one; and the result of this anti-hospital mania with which the popular mind is here infected, has had the result to drive those who felt disposed to do such work, to seek another field for their charitable enterprise, and instead of going to Alameda County as the Teuton supervisor counseled me to do, they have crossed the Rocky Mountains, and one of them, Michael Reese, has given Chicago a million of dollars for the erection and endowment of a hospital in that wiser and more liberal city. And a second refugee to a sphere where the municipal statute book is marred by no enactment against hospitals, is the fortune of General Halleck, which has given a hospital for the treatment of cancer in New York city. These two great institutions which might and should have been ours, have found a more congenial home elsewhere, where they are giving relief and solace to the suffering; and in the one to which Mrs. Halleck has prescribed a specially defined line of work, viz., the treatment of cancer, it is probable it will open the way for the better treatment, if not the cure, of this scourge of our race.

A thing which will strike your attention, gentlemen, during your stay with us, is the international character of the medical profession in San Francisco. A reference to our medical register shows that we have representatives of every cultivated people of the earth; almost every medical school has here its graduate. And when you become acquainted with these physicians, as a rule, you will find that they are men of character; men who would have been successful in whatsoever land they should have sought a sphere for the exercise of their talents. Great Britain, France, Germany, Belgium, Austria, Hungary, Italy, Spain and Mexico have sent us creditable examples of their respective nationalities. These men were not long in abandoning the isolated exclusiveness that would naturally exist among men who were so different. And to-day the bond of fraternity is probably quite as strong as it would have been had they been of a common national blood.

The fraternity which has grown up here is the offspring of the essential nature of medicine itself; for the truths of medicine are the common heritage of an international brotherhood, which comprises all members of the healing art, wherever civilization has uplifted the race. All medical knowledge is common property; every fact which is discovered in medical science and art must by the finder be thrown into the common treasury; and thence every hand can draw and use. Among the other professions and callings of men, no such abnegation of self exists; a caveat or patent reserves all rights to the inventor or discoverer. This community of rights is the golden link in the ethical chain which binds the members of our profession together. These are the altruistic articles of faith to which each one of us has subscribed, in which the rule of action prescribed is to do more for others than for one's self.

Besides the medical institutions of our State which offer themselves for your observation, California has much else that I am certain will both interest and please you. Her resources of natural scenery are so vast, that many weeks would be necessary to visit the leading points of interest. In the excursion around our bay, the valleys and highland of the Coast Range of mountains presented in panoramic succession can not fail to delight and awaken admiration. And this range, as well as the more distant mountains, in form and appearance differ much from what exist in the East; in fact the difference is so great, that it seems as if the Pacific coast in its physical conformation, belongs to another continent. The mountains near the coast are often nearly destitute of forests except where their sides are intrenched by deep gorges which usually abound in oak trees. The smooth brown slopes of those high hills, diversified with the evergreen oak-clad gorges, constitute a leading feature of the Pacific landscape; and this form of landscape predominates until one has reached a long distance down the Mexican coast.

As you are aware, California has made two valuable contributions to our materia medica, viz., the *grindelia robusta* and the *cascara sagrada*. Some years ago when on a visit to Jalapa in Southern Mexico, I was anxious to see the plant, jalap. Yet I found that though I was in the city which gave the name to the plant, yet no living specimen could be found in the place; and I was informed by a druggist that if I wished to see it I would have to ride a distance of several miles to a deep gorge in the Cordilleras Mountains. I took his word for the fact and did not see the plant. But if you are anxious to see the Californian plants to which I have referred, you will have an opportunity. During your excursion to our neighboring naval station, you will find on Mare Island an abundance of *grindelia* growing there naturally, as it does in many parts of the State. And should you visit Yosemite, which none should fail so to do, who desires to see the sublimest scenery of California, you will here and there pass the *cascara* shrub. It grows, however, in the greatest abundance in the hills which surround Clear Lake, in Lake County. The shrub is likewise found along the high mountain road, by which the traveler reaches the geysers. But as the road closely skirts to the edge of a canon down which it makes the uninitiated traveler dizzy to look, the latter is

too much absorbed in personal matters to be occupied in the study of the flora.

Lest I may have inadvertently awakened apprehensions in any who are thinking of traveling over our mountain roads, let me assure such, that journeying there is more exempt from accidents than is travel on our city railroads with which you are familiar.

Let me again repeat my welcome to you, and thank you for the honor you have done Cooper College in paying it a visit; and in concluding these words of welcome, in looking on this assembly the felicity of the hour is saddened by the retrospective thought that many of those who visited us before, are now absent, and that in the green laurels which they then wore, the dark cypress has since been entwined; but with more cheerful augury for the future let me now express the hope that when two decades shall recall the honored sons of medicine to visit us again, each one of you will be present in that august assemblage.

This address was followed by Dr. E R. Taylor, Attorney-at Law, who read extracts from a poem of great excellence entitled the "Hospital," lately written by Henley, the Scotch poet. In this poem the writer has depicted with vivid fidelity the dramatic scenes which are enacted in the surgical ward; scenes in which the action of an anesthetic, the operation, the patient's subsequent hours of doubtful event and his final emergence into the sunlight of life and health are portrayed; and though the license of a poet has been indulged in and fancy given full sway, yet the descriptions are singularly real, and akin to those soon to be enacted in the new building adjacent to the College, which the assembly was invited, presently, to visit.

The address of welcome was replied to by Dr. H. O. Marcy, of Boston; in a brief, but eloquent address, in which a high tribute was paid to the hospitalities which with lavish hand have been showered on the Association during its stay in San Francisco—words very pleasant to the ears of Californians, but in which a slight gilding of exaggeration might have been detected by the disinterested auditor.

The foregoing addresses were followed by a collation at which were served some of the choicest specimens of the wines of California, which were presented by members of the Viticultural Association, which has an exhibition at the Midwinter Fair. These wines, in their amber or ruby tints, were of rare beauty and exquisite flavor, and convinced the visitors that the productions of the vine-clad hills and valleys of Pomona, Napa, Tehama, Contra Costa and San Gabriel are not surpassed by the vintage of the Old World; in fact, that the wines of the Occident need but to be known and the powers of some genius gifted in lyric verse, to endow them with a celebrity equal to that which has been given to those of antiquity by the Latin muse, when Horace, reclining beside his much-loved Mæcenas and Pompeius singing his golden lyrics, exclaimed, "*Ciboria exple!*" and in matchless numbers gave immortality to Massio and Falernian.

The reception ended by the assembly separating into groups and visiting the various sections of the College and Hospital.

In reference to the erection of Cooper Medical College and its annexed hospital, as there has been a statement that the structures mentioned owe their origin to money left by Dr. Elias S. Cooper. The following sworn statement of Mr. Joseph Reay, executor of the estate of Dr. Cooper, is offered, with the hope that it may aid truth in supplanting untruth.

STATE OF CALIFORNIA, } ss.
CITY AND COUNTY OF SAN FRANCISCO. }

JOSEPH W. REAY, being duly sworn, deposes and says he is a resident of the City and County of San Francisco, and has been for more than forty-three years past; that he was intimately acquainted with Dr. Elias S. Cooper during his lifetime, and lived with him in the same house, during all the time he was a resident of the State of California and the City and County of San Francisco, and for many years he was his business agent; and after his death, which was in October, 1862, he was an executor of his will, and duly qualified and acted as such executor without compensation or commissions from the estate. In his will Dr. Cooper bequeathed his entire estate to his relatives; and he left no means either by bequest in his will or by verbal request for the erection of a medical college in this city or elsewhere.

Deponent further says the total value of the estate left by Dr. Elias S. Cooper, deceased, was eighty-five hundred dollars, as more fully appears by the record of the Probate Court of this City and County.

Deponent further says that Dr. Levi C. Lane advanced and contributed out of his private funds the sum of $1,162.76 to pay some of the claims against Dr. Cooper's estate.

Deponent further says upon his information and belief that the building in this city known as the Cooper Medical College was erected by Dr. Levi C. Lane, from his own private means, and was so named to honor his relative, Dr. E. S. Cooper.

Further affiant saith not. J. W. REAY.

Subscribed and sworn to before me this 18th day of December, 1893.

JOHN P. POOLE, Notary Public in and for the City and County of San Francisco, State of California.

{SEAL.}

LEVI COOPER LANE.

SELECTIONS.

The Conduct of the Journal of the American Medical Association as a Business.—There has come from Pennsylvania long-continued and persistent criticism of the advertising portion of the ASSOCIATION JOURNAL. It is significant that this has largely and mainly emanated from the *Medical News* and its editorial writers. When it is remembered that the *Medical News* is owned by a large publishing house, it is apparent that any damage of the ASSOCIATION JOURNAL as a business enterprise would profit its rivals. In this connection it will not be forgotten that many years ago the publishers of the *Medical News* greatly desired to secure the publication of the ASSOCIATION JOURNAL under their immediate control. Bearing these facts in mind, and remembering that the other great weeklies—the *New York Medical Journal*, the *Medical Record*, the *Boston Medical and Surgical Journal*—have no similar criticism, the reader must conclude that there must be some special reason why the *Medical News* desires to cripple the business resources of the JOURNAL.

The call is made that the trustees of the JOURNAL be "bounced" because they admit just such advertisements as are admitted by the *Medical News* itself, the *Medical Record*, the *New York Medical Journal*, and the *Boston Medical and Surgical Journal*. In so far as we are aware, the trustees one or all, are quite indifferent as to longer service for the ASSOCIATION as trustees, and hence are quite willing to devote their energies to other labors just as soon as the ASSOCIATION so desires. Meantime some common sense is desirable of such as wish prosperity to the JOURNAL.

When the ASSOCIATION started the JOURNAL, it entered upon a business enterprise. The laws of success in that enterprise it was compelled to obey, in order to succeed. It saw the old publishing houses of Henry C. Lea & Co., D. Appleton & Company, William Wood & Company, conducting their weekly medical journals in a certain manner, which was approved by the ASSOCIATION and the medical profession in general; it also saw the *British Medical Journal*, representing the British Medical Association, conducted in a similar manner—and all attended with large measure of success. The trustees therefore concluded that they were safe in following the methods of the old weeklies. In following these methods a considerable measure of success came to the ASSOCIATION JOURNAL. At Detroit, however, by one of those snap judgments so characteristic of the action of the general meeting, the ASSOCIATION ordered the trustees to cease publishing advertisements of articles whose composition was unknown. Their records show that the trustees took immediate action and directed the editor to follow the command of the ASSOCIATION. He affirms that he has followed this command, and that the composition of all substances advertised in the JOURNAL is known. But the critics are still not satisfied. They want all copyrighted and proprietary articles excluded, even though their composition be public property.

The effect of such exclusion would be the reduction of the

income of the JOURNAL by more than $8,000 yearly. This doesn't look like business. If the members of the ASSOCIATION were not interested in these advertisements, the advertisements would not be offered to them. As the members own the JOURNAL, it would seem as if the JOURNAL should advertise such articles as they are interested to see. In such matters the majority should rule. The vote at the ASSOCIATION meetings and the voices of a few members do not count against the fact that such advertising pays when placed in the ASSOCIATION JOURNAL.

Personally we wish that all proprietary and copyrighted medicines, and every sort of secret remedy, were utterly and forever excluded by every doctor from the list of articles employed by him in his professional work. In the ideal state of medicine such will be the fact. To attain this end, doctors should be taught when they are students, either under a preceptor or in a medical college, that the use of such remedies is unwise and unworthy of a student of science. A crusade which would in this manner strike at the root of things would meet the endorsement of common sense. Meantime, ere this the matter will be considered by the ASSOCIATION at its San Francisco meeting, and doubtless wise counsels will prevail. It is hardly to be expected that the ASSOCIATION will advise that the JOURNAL be deprived of an income of $8,000 yearly, by refusing advertisements which its rival weeklies accept and which a large proportion of its members prescribe as occasion offers. It will either continue the existing course or direct that with each advertisement a statement of its composition shall appear. We think the editors of the JOURNAL have done well in always refusing any of the so-called "reading notices" or the publication of matter edited by advertisers, or in any way giving the reading pages of the JOURNAL to the advertisers. Nearly all other medical journals are more or less guilty of one or more of these concessions to their advertisers.—*American Lancet*, June, 1894.

Can the Advertisements in a Reputable Medical Journal Promote Quackery?—This question has been raised in a paper honored by an audience before the Pennsylvania State Medical Society. The paper was intended to convict the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION of the charge of promoting quackery. This special point we shall not consider now—only the broader one in the above heading. In the case in point it is not claimed that the reading pages are used in any manner to endorse the statements found in the advertising columns. Hence we have the question fairly as stated: "Can the advertising pages of a reputable medical journal promote quackery?"

1. The advertising pages of a reputable medical journal are read only by physicians, who by long and severe training have been taught to distinguish between the true and false in all medical matters. Grant that an advertisement of a fraud appears in the advertising pages of his journal, what are his previous training and experience good for if they do not enable him to detect the falsehood? If he can detect this, certainly he will not be misled. If he is not misled, then quackery will not be promoted through the physician who reads the journal.

2. If it is claimed that physicians are so badly educated as to be unable to detect the falseness of statements in the advertising pages of reputable medical journals, and so are led astray by these statements, the fault should rather be laid at the door of the medical college or licensing board which issued the license to practice medicine.

3. If, in the manner indicated, the journal of the ASSOCIATION promotes quackery, then do also the *Medical News*, the *Medical Record*, the *New York Medical Journal*, and the *Boston Medical and Surgical Journal*. The talented author of the paper referred to is a contributor editorially to the *Medical News*, and so himself aids a medical journal engaged in the work that he terms "promoting quackery." It were wise to think several times before affirming that the list of medical journals above is engaged in promoting quackery. Even that paragon of excellence (in the minds of many), the *British Medical Journal*, is full of just the sort of advertisements complained of by Dr. Cohen. So also is the London *Lancet*. In the name of good sense, why should not the business management of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION do those things which all the medical journals of its class do?

4. For reasons indicated, we think it impossible for the advertising pages of a strictly medical journal to promote quackery. At the same time, we wish that nothing were printed in these advertising pages other than clean-cut scientific truth respecting drugs or preparations or appliances supposed to be useful to some physicians.—*American Lancet*, June, 1894.

Pure Cocain.—Though cocain has been known as a valuable agent for some years, it is only lately that knowledge of the physiologic effect of its accompanying amorphous bases has been materially widened.

Concerning the principal alkaloid, cocain *per se*, it is not necessary to speak, because it is familiar to the medical profession the world over in the form of a salt; but of the number of so-called secondary or amorphous alkaloids, chemists even at this late date are somewhat doubtful. There are known to be several, and recent researches on the part of Liebermann, Liebreich, and others, prove that one of these amorphous alkaloids, viz.:, iso-atropyl-cocain, is a most violent cardiac poison. This alkaloid occurs in coca leaves in very minute quantity, as a rule, but some specimens contain far more than others; its separation is most difficult, and it enjoys the reputation of being the least easily detected of all the coca bases. Even if we were not positive that the secondary bases exhibited a pernicious effect, they must be looked upon as suspicious, and a cocain demanded from which they are removed. As a matter of fact, we do know that the presence of even small quantities of these amorphous bases is responsible for untoward and seemingly inexplicable results that often follow upon the administration of supposedly pure cocain preparations.

Recently the editor of the *Medical Age* learned of two apparently mysterious deaths which were in reality the result of the use of impure cocain by dentists for its benumbing effect in the extraction of teeth—in both cases the drug was injected into the gum. In one instance death occurred within a few hours after the teeth were drawn; in the other the lady lingered for about thirty-six hours, and all the resources of the medical art were unable to stimulate a heart that had been fatally poisoned owing to a preponderance of iso-atropyl-cocain.

Such facts as just cited should prove sufficient to put the practitioner on his guard and induce him to demand a cocain that is free not only from secondary alkaloids, but from such inorganic substances as sodium, calcium, etc., that are necessarily employed in the process of manufacture.—*Medical Age*.

Abuse of the Bandage.—The first abuse of the bandage comes through its clumsy, unskilled application, by the inexperienced, hasty or careless. The second, through its too firm adjustment, when the circulation is impeded or as sometimes happens, it is totally strangulated, the tissues beyond becoming asphyxiated, mortified and destroyed. This latter occurs most commonly in cases of fracture. As many as five or six such cases have come under my observation in my time, and I have been informed of others, in which the bandage got in its deadly work, though, they were frequently entered in the hospital records as cases of "acute mortification." A fractured limb which is at all firmly bandaged should be closely watched for the first twenty hours; until, in fact, the subsidence of primary inflammation and swelling and the bandage relaxes its grip. It often becomes a matter of great difficulty to permanently adjust widely separated fragments, without risking a firm bandage to fix them. These difficulties and dangers could be largely obviated if we would go back to the practice of our fathers; and, after carefully adjusting the fracture leave it alone and not permanently "set" it until primary swelling has subsided.—*Medical Summary*, June, 1894.

THE
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THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WABASH AVE., CHICAGO, ILLINOIS.
W. H. LOWDERMILK & CO., WASHINGTON AGENT.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, Venetian Building, Chicago, Ill., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual subscription to THE JOURNAL. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above subscription the weekly JOURNAL of the Association will be forwarded regularly.

Gentlemen already members of the Association should send their annual subscription to the Treasurer, or direct to the JOURNAL office.

SATURDAY, JUNE 23, 1894.

THE FORTY-FIFTH ANNUAL MEETING.

The forty-fifth annual meeting of the ASSOCIATION was one that will long be remembered. The extraordinary efforts that were made by our brethren in San Francisco to make the social features successful were the subject of much remark and of sincere admiration.

The private receptions in addition to the official ones were numerous, and the hospitality of the Californians was as generous as it was general.

The President was singularly happy in his efforts to expedite business and banish dissension, and the turmoil that was threatened and even predicted by some, was averted. The question of revision of the Constitution was sought to have considered separately from the question of Code revision, but it proved impracticable to do so, and the whole matter was indefinitely postponed. One amendment, however, escaped the common fate; the one changing the "annual dues" regulation to one providing for annual subscription to the JOURNAL. This was made necessary by the construction put upon the postal laws, whereby society publications can not *per se*, be classed as second class matter, and granted postage at newspaper rates. With the adoption of the new regulation, the ASSOCIATION has complied with the law.

The action of the Trustees in accepting the same class of advertisements as other reputable medical journals accept was approved. We publish in this issue an excerpt from our esteemed contemporary, the *American Lancet*, which seems to show that the attack on the management of the JOURNAL is only a part of a serious and long-continued effort to break down the JOURNAL, for reasons which seem curious, to say the least.

The resignation of DR. R. J. DUNGLISON, after seventeen years' faithful service, was one of the surprises of the meeting. It is understood that the wishes of DR. DUNGLISON were complied with in the appointment of his successor, DR. HENRY P. NEWMAN, whose residence near the publication office will make it easier to transact the ASSOCIATION business, which during the last few years has been especially burdensome. During DR. DUNGLISON'S incumbency of the Treasurer's office he has seen it grow from a comparatively few members to one of the largest, and the Sections have grown and developed into vast sub-conventions devoted to special topics.

The scientific business before the Sections was of considerable volume, and unusually varied. He would indeed be hard to please who would cavil at the work done in the Sections.

Among the many enjoyable entertainments "not writ down in the bills" was the breakfast given by the Gynecological Society of San Francisco to the members of the Obstetrical Section. DR. W. H. MAYS presided, and speeches were made by A. LAPTHORN SMITH, of Montreal; I. N. LOVE, of St. Louis; H. O. MARCY, of Boston—a little fun was interjected into the proceedings by the introduction of DR. MARCY as "HERNIA O. MARCY, of Boston"; F. H. MARTIN, of Chicago; ALEX. J. STONE, of St. Paul; J. M. DUFF, of Pittsburg; JOSEPH EASTMAN, of Indianapolis; HENRY P. NEWMAN, of Chicago; DR. DELFF, of California; R. BEVERLY COLE, San Francisco, and JOHN B. HAMILTON, of Chicago.

The annual banquet of the American Medical Editors' Association was unusually interesting. At the business meeting just preceding, a letter from the genial Secretary, DR. GEO. M. GOULD, of the Philadelphia *Medical News*, was read, in which, in his usual happy and courteous vein, he congratulated the assembled medical editors on the high plane they should and did assume in the conduct of their branch of journalism. At the banquet, PRESIDENT HUGHES read the address elsewhere printed in this issue, which is a tribute to the work of the profession and a plea for its just recognition. He thinks here, as in his Mississippi Valley Medical Association address of last year, that the profession has been too generally derelict in non-assertion of the just claims of the medical profession to popular respect in this country.

The usual round of toasts followed; the toastmaster, DR. LOVE, performing that duty in his usual style, which in that, as in all other matters coming under his supervision, was performed with judgment, skill and taste. Speeches were made by DRS. LEVI COOPER LANE, R. BEVERLY COLE, R. H. PLUMMER, of San Francisco, and WINSLOW ANDERSON, of the *Pacific Medical Record*. Several of the members responded to toasts, including the host, MR. R. E. QUEEN.

The action of the Medical College Association in expelling two of its constituent colleges for failure

to comply with the rules governing the graduation of medical students was severe, but was done by that body as one of the surest means of convincing the country that they are sincere in their efforts at educational reform.

Taking the meeting all together, it is doubtful if its many-sided interests were ever more fully considered or represented.

As the question of amendment of the Constitution was left unsettled, it is more than probable that it will become a perennial one, until the amendments are separately formally adopted or rejected.

THE PLAGUE IN CHINA.

Doubts as to the identity of the disease reported to be Asiatic cholera in Canton and Hong Kong, noted in the JOURNAL of the 9th inst., are resolved through recent advices by the Pacific steamers. It is obviously an epidemic of bubonic plague and one of marked severity. The disease appears to have originated in Hong Kong and to have made its appearance in Canton about the end of April. Some idea of its ravages may be formed from the reports of a resident missionary in Canton, who made systematic investigations which showed a total of 6,000 deaths among the Cantonese in the first eight days; and its virulence and fatality may be inferred from the returns of one hospital, in which out of 393 cases received there were 320 deaths.

The symptoms of the disease, as reported by a district physician to Colonial Surgeon AYRES, are as follows: "With or without premonitory warning in the shape of malaise or chill there is a sudden onset of fever rising to 105 degrees or over; there is much headache and cerebral disturbance, accompanied by stupor; in from twelve to twenty-four hours glandular swellings occur in the neck, armpits or groin, rapidly enlarging to the size of a fowl's egg; these are hard and exceedingly tender; with or without a decline of the fever the patient sinks deeper into a condition of coma and dies, usually at the end of forty-eight hours or sooner; if six days are reached recovery is hopeful; the glandular swelling shows no signs of suppuration; in some cases epistaxis or vomiting of blood occurs; petechiæ appear in a few, but no regular eruption."

This is a fairly accurate portrayal of the fulminant form of the Oriental plague—the bubonic or glandular, as differentiated from the Indian or Pali plague, in which gangrenous inflammation of the lungs is a common lesion, while it rarely occurs in the bubo plague above described. This fulminant form occurs chiefly during the beginning of an epidemic; as the epidemic progresses cases increase in number in which there are well-marked stages of invasion,—fever, glandular involvement and convalescence, with a corresponding decrease of mortality. The etiology of the disease is summed up in the term given to it by CABIADIS, in his report to the Constantinople Board of Health on the outbreak in Astrakhan, 1878-79, namely, *miseriæ morbus*, the malady of the miserable, the plague of the poor. It is a disease of poverty and of the insanitary evils which poverty begets; overcrowding and want of ventilation, personal filthiness, improper and insufficient diet, etc.

It is the very type of the infective diseases, and herein lies the sole practical interest of this country in the Chinese outbreak. It is capable of being conveyed by vehicles of commercial intercourse, and while it has never appeared in this country it has repeatedly invaded Europe through commerce with the countries of its autocthonous origin. Sanitary authorities claim that preventive medicine has achieved no other work comparing in magnitude and importance with the extinction of the plague in Europe, through the development of the quarantine system with reference to the indigenous habitats of the disease. HIRSCH, in his "Hand-book of Geographic and Historic Pathology" says: "I can not, in fact, understand how any one, criticising the facts without prejudice, and having regard to the state of the plague in the East, can for a moment hesitate to attribute the chief cause of the disappearance of the plague from European soil to a well-regulated quarantine system." This country must rely upon the health authorities of the Pacific slope, both British and American, to see to it that this scourge of the far East obtains no foothold on our shores.

A SINGULAR PLEA FOR THE UNFIT.

In a recent address before one of the oldest State Medical Societies on the subject of cramming in our medical schools, the speaker made an argument which should commend him to the favorable regard of the average medical student. That such was not his intention goes without saying; but it remains, nevertheless, that the address was, in effect, a plea for the survival of the unfit.

Detailing the higher standard of medical education now in vogue as compared with that of a few years ago—the change from two short terms of repetitional lectures to three years' attendance upon a graded course; the increase in the length of the term itself; the increase in the teaching staff; the increase in laboratory work, class demonstrations, bedside ward-training, and special and general clinics—all to end in making the diploma, when obtained, only a passport to a State Board of Medical Examiners, the question is asked and answered:

"And what has been the result of the great increase of professional chairs, the rivalry for hospital appointments, and the creation of a State Board of Medical Examiners? The answer is only too apparent, viz., to increase the hardships of the medical student. Hard and unsatisfactory as it was when he could get his degree in two years, it is

doubly hard and far more oppressive under the extended course."

Then follows a harrowing picture of the quiz system and of the student's "long hours of work, often in foul and ill-ventilated rooms; the long tension of mind, unrelieved by the slightest relaxation; the magnitude of his work, with increasing perplexities every year, and the constantly menacing horror, that after all he may fail of getting his diploma"—all of which "rob him of sleep and render him almost imbecile at the moment when his faculties should be freshest and brightest" for his final examinations. And so "10 per cent. at least of every graduating class fail to get their degree; 10 per cent., after paying for three courses of medical instruction, three years' maintenance and three years' loss of time."

This setting forth of the results of the higher medical education is curiously interesting, but no less so are the reasons given "why so many fail."

Briefly, these are, first, because the preliminary examinations by the "medical schools are notoriously farcical. Think of 'throwing' a man at his final examination because he can not spell or write grammatically!" The JOURNAL knows of at least one licensing body which undertook to ascertain of graduates whether they had sufficient general education when they began the study of medicine, but the comical cart-before-the-horse feature of the attempt soon compelled its abandonment; but that medical colleges generally make their "preliminary" examinations at the end of the three years' course and 'throw' a man at his finals because of defects in his "three Rs," then first discovered, will be news to most faculties.

And the second reason is like unto the first: The professor "knows little or nothing of the student until he appears before him for his final examinations."

The serious feature of the address, however, is in the remedy proposed and recommended:

"If the law compels a young man to study four years it ought to give him some guarantee that he will be fairly dealt with. Were our medical schools compelled to refund one-half the expenses of the student who fails to get his diploma (*i. e.*, one-half the cost of three years' maintenance and of three years' loss of time), if the schools were obliged to refund *all* moneys expended on lectures, the graduating class would not be reduced in numbers, but the 10 per cent. that fail at their final examinations would have some redress."

This is just the kind of a proposition that would be apt to strike favorably a certain class of legislators, and it would not be in the least surprising to see it, in the near future, embodied in "An act entitled an act," etc.

Meanwhile, the JOURNAL commends to the attention of the author of the address under consideration, the following cold facts which have already appeared in these pages: In round numbers, there are upward of 118,000 doctors in this country, which with a population, also in round numbers, of 65,000,000, gives an average of one doctor to every 550 men, women and children; this population increases at the rate of about 2.5 per cent. per annum, but every year we add over 5 per cent. of new doctors.

It does seem that we might worry along without making it any less "hard and unsatisfactory" to become a doctor—for the present, at least.

ANOTHER COURT ON PHYSICAL EXAMINATIONS.

Following very closely upon the handing down of the decision of the General Term of the New York Court of Common Pleas in the case of Lyon v. Manhattan Railway Company, concerning physical examinations under New York's new law, announced in the JOURNAL of May 26, comes its affirmation by the Court of Appeals of that State (advance sheets of 37 *Northeastern Reporter*, pp. 113–115), three justices dissenting therefrom. But in the latter Court, it is to be noted, the counsel for the plaintiff did not rest the case wholly upon the reasons given by the general term, but attacked the new statute as in conflict with the Federal State and constitutions. He insisted that such conflict arose from the fact that the plaintiff was required, as a condition of prosecuting her action in the courts, to expose her person against her will; that the statute in question, in effect, deprived her of the sacredness and privacy of her own person, and of her liberty and natural rights and the equal protection of the laws. The argument, though perhaps novel, the Court admits is not without interest. It is disposed of by the Court simply holding that the statute enacts a rule of procedure, the purpose of which is the discovery of the truth in respect of certain allegations which the plaintiff has presented for judicial investigation in the courts of justice. Prescribing a method of aiding the court and jury in the correct determination of an issue of fact raised by the pleadings, does not violate any of the express or implied restraints upon legislative power to be found in the fundamental law which controls it. According to the common law, as remarked by MR. JUSTICE GRAY, in the Supreme Court of the United States: "The inviolability of the person is as much invaded by a compulsory stripping and exposure as by a blow. To compel any one, and especially a woman, to lay bare the body, or to submit it to the touch of a stranger, without lawful authority, is an indignity, an insult, and a trespass." This statute, the Court of Appeals says, has changed that law, but it is not so certain that it will ever change the general sentiment of mankind which was expressed in that remark. The power conferred, it admonishes, should never be used in such a way as to leave any doubt as to the fairness and good faith of the proceeding, otherwise it may prove to be a sword instead of a

shield. It should be a fair and open inquiry after truth, in which both sides are or may be participants. If it is used only for the purpose of enabling the defendant to prepare expert witness to give testimony at the trial it will be hardly possible to keep the fact from the jury, and it is easy to see how such an element in the case might be used to excite sympathy, stimulate prejudices, and in some cases possibly to enhance damages. The physical examination being authorized, how is it possible, the Court asks, for medical experts to make the same, in any case, by merely observing the external marks or indications of personal injury or disease? The term itself implies not only such observation, but an inquiry by means of questions and answers, as to the cause, nature, character and extent of the disability. Mere external appearances are, in themselves, of no consequence unless identified and connected with the accident as the cause; and hence disclosures such as ordinarily occur between patient and physician must necessarily accompany the inspection of the injured parts. For this reason, this new New York enactment provides that the physical examination shall be procured in the same way and as part of an examination of the party before trial. The referee becomes something more than a mere spectator at an idle ceremony. He may take the plaintiff's testimony upon the issue, and report to the court. He has power to administer an oath and to authenticate the proceedings, and the plaintiff is bound to appear before him, and answer all proper questions with respect to the nature and extent of the injuries, whether framed by the medical experts from their own examination, or by the counsel present. It becomes a fair struggle for truth, and both parties may participate. The record of the examination is placed on file, and both sides know just what must be met if it is introduced in evidence, as it may be by either party.

AUTHORITY OF PHYSICIANS FOR RAILROADS.

Railroad companies have come to make arrangements with physicians all along their lines to care for injured persons, and especially employes, who require immediate attention. Mere appointments of this kind, however, carry with them but little implied authority. This fact is illustrated by the decision of the Appellate Court of Indiana in the case of the Chicago & Erie Railroad Company v. Behrens, rendered April 6, 1894. The evidence showed that a physician, regularly appointed by the Railroad Company named, was, under the terms of his contract, required to do the medical and surgical work of the Company in a prescribed territory, and to care for the patients while in his charge. An injured employe was brought to him, by the conductor of a train, to look after and attend as a surgeon. The character of the employe's injuries was such as to require immediate attention, and, under the direction and at the request of the physician, he was removed from the car, on which he was brought to the place, to a house where he could be cared for and treated. Board and care were there furnished, at the request of the physician, with the implied understanding that they should be paid for by the Railroad Company. Under these circumstances, it is held, reversing a judgment of the Porter County Circuit Court against the Company for these services, that the physician had no implied authority to bind the Company for such board and care. Had it been affirmatively shown that the employe was injured by the Railroad Company, or that he was injured while engaged in the performance of some duty for it, it is intimated that perhaps a promise might be implied on the Company's part to pay for his care while disabled.

THE PUBLICATION OF THE MINUTES.

The publication of the minutes of the ASSOCIATION Meeting in the JOURNAL is usually delayed from one to three weeks according to the location of the place of meeting. The publication in the JOURNAL is the only official one, and it must be correct and complete. We can not therefore hasten its publication without detriment to the interests of the ASSOCIATION.

ASSOCIATION SUBSCRIPTION.

Members of the ASSOCIATION who have not already paid for the current year, will please pay their annual subscription forthwith without waiting for formal notification, to the ASSOCIATION Treasurer, DR. HENRY P. NEWMAN, Venetian Building, Chicago, Ill., or if they prefer, to the JOURNAL office direct.

CORRESPONDENCE.

EDITORIAL CORRESPONDENCE.

Leaflets from the Editorial Logbook.

On Saturday May 9, at 5 P.M., Drs. Montgomery, of Philadelphia, and Baker, of the Cleveland *Medical Gazette*, the new ASSOCIATION Treasurer, and others beside myself, left in advance of the ASSOCIATION train for the return trip via the "Shasta" route, and the Northern Pacific. We were assured by Mr. Austin, the special agent of the Northern Pacific, that trains would run through regularly by the time we reached Spokane and we would be passed through safely. On this assurance we started, and took a last look at the Golden Gate as we passed along the Bay shore. We woke up in the morning, June 10, with the train speeding along the Sacramento Valley far up in the mountains. No little river could be more picturesque as it rolled and sparkled, frothed and fretted at the rocks in its path. No mountains could be more rugged and few lift their heads higher than the Sacramento Range which merges into the Siskiyou and pierces the clouds with snow-tipped Shasta. We had an excellent breakfast at Shasta, and we stopped at Shasta Springs and drank the waters of the wonderful soda spring Here the Mossbrae Falls rush foaming down the mountain

side over a mossy pillow, over which the shining waters spread as if loth to leave so sweet and fresh a pillow, to mingle with the vehement Sacramento. The Southern Pacific road with that kindly regard for the comfort of their passengers that had distinguished them from the time of arrival in California put on an observation car, which we were all free to use as we liked. All enjoyed the scenery which was grand beyond description, and the day was enjoyed by all, barring a mimic snow storm through which we passed while on the summit of the Divide.

June 11, at 8:20 A.M., we arrived at Portland. Here we took leave of Dr. Newman who left immediately for Alaska, in the midst of a pouring rain. For the first time we realized the loss of our special train with its genial company, the gentlemanly agent, Mr. Connell, and the efficient Pullman conductor, Mr. V. H. Coffin. The rain kept showering, but notwithstanding this fact, we hired a boat and viewed the town, the principal business part of which was under water. Boards placed on trestles such as are used by carpenters and plasterers, served for sidewalk, and we thus had a practical demonstration of the actual working of that latest device for relief of congested city streets, *i.e.*, elevated sidewalks. The Willamette River was said to be five feet higher than ever, being a rise of thirty-five feet. The citizens seemed to view the matter with admirable *sang froid* and looked upon it as only a temporary setback to their prosperous and handsome city. The Northern Pacific agent on whom we called by boat, rowed by a stalwart Chinaman, assured us that from Spokane we would be sent forward on our journey with only little delay, and that it was possible we might go through without a break as the road might be repaired by the time we reached there, or at least forty-eight hours later; and so with some misgivings we left on the boat *Tacoma*, down the Columbia at 4 P.M. On our way down



the river we saw evidences of devastation on every hand. Houses, barns and lands submerged, some careened by the flood, and only in occasional instances did we see any living thing and then we could see that some plucky soul was living in the second story of some partially submerged building. On arrival at Kalama, the destruction by the flood was complete.

The railway dock was broken and partly under water, the raging current filled with floating driftwood covered the track, and the tops of the telegraph poles with their little cross pieces were all that could be seen of them. We passed down the Columbia and finally turned the bow of the *Tacoma* into the Cowlitz River, and we steamed up toward Kelso with the melancholy spectacle on either bank of the Cowlitz, of ruined homes, flooded farms, and wrecked industries. At Kelso we were once more on *terra firma*, and found our sleeping car awaiting us. We set off for Tacoma where we arrived about 1 A.M., June 12. Our train crawled along toward the Yakimaw country, and it was three hours later when we awoke. We were in the midst of a dense pine forest and snow-capped peaks in sight from almost every point of view We wound in and out along the water courses, climbed mountains, rushed down gorges, and reached the Yakimaw Valley. We descended that uninviting stream from Ellensburg, a handsome and flourishing mountain town, quite down to its emptying into the Columbia. A little below that point we crossed the Columbia and soon reached Pasco City. From Pasco City (a "city" of a dozen frame shanties) we moved slowly over the barren heights leading to Spokane, where we arrived about 5 P.M. We went to the Hotel Spokane where we found fair accommodations but poor cookery; an excellent proof of the wisdom of the old French proverb that "however certain it is that Heaven sends us our food, it is beyond doubt that the devil sends the cooks." As soon as possible after reaching Spokane we sought the Northern Pacific agent, who finally informed us that there was no pos-



sibility of our passing eastward for at least four days, and then we would be obliged to take a steamer on the Cœur d' Alene Lake, and a probable stage ride over washouts on the eastern slope of the Rockies; so we bought transportation over the Union Pacific as we were unable to arrange a transfer, and were ready to start home by that line.

The falls at Spokane are among the most beautiful, and the city itself is a gem worthy of its setting in the magnifi-





MT. HOOD.

cent Colville Range—a spur of the Cœur d'Alene. The buildings are patterned after some of the best in Chicago, but are apparently about a decade beyond the present needs of the city. The street railways (trolley overhead wires) run everywhere, even out into the pine woods, but can scarcely be profitable at present. Dr. Doolittle and Dr. Thomson entertained some of our party while at Spokane. On Wednesday, June 13, we resumed our journey, winding downward in a serpentine course toward the Snake River, which we crossed about 4 P.M. An hour or two later we arrived at a village called Starbuck, where we were given the worst supper that our suffering pilgrims had yet encoun-



tered. We reached Walla Walla about 9:30. The country from Spokane to Walla Walla is an excellent grazing region but barren, dusty and unattractive in appearance, with alkali dust, and scarcity of water. As we left Walla Walla, with our train for the first time headed homeward, the travelers were happy; and a concert was started in the smoking car led by the Actor Stuart, who happened to be on board; his voice is a high tenor, and all were charmed with his comic and sentimental songs, but our pleasure was of short duration for three of our cars were suddenly derailed, and our Pullman was thrown sideways in a way that was unpleasant to say the least. A broken rail, mashed ties and warped brakes gave rise to much growling, but, as nobody was hurt, the *status quo ante accidens* was soon regained, a fire was built of broken ties along side of the track and story telling was resumed. Many speculations were indulged in regard to the cause of the accident. Some had noticed a cross-eyed man get aboard the train at the Snake River bridge; the brakeman acknowledged in a moment of confidential candor that a friend of his had given him an opal ring that day, with the cheerful assurance that his train would be ditched before night, and however near the mark these speculations may have come, a hard matter-of-fact passenger declared after examining the rail that it was "structurally defective," having been an old rail refaced, and that the ties were spongy with dry rot. As the speaker was a railroad contractor of much experience, this seemed to settle it, but the brakeman was seen to turn his opal ring to the inside of his finger where he could now and then cast deprecatory glances at it unobserved. As for the cross-eyed passenger, he disappeared shortly after the wreck, and was seen no more. Our train was after a while righted and we again started, chastened in spirit but not cast down. June 14 a dining car was put on the train at Pendleton, Oregon, and we breakfasted with comfort. All day long we were engaged in crossing and re-crossing Snake River, inhaling alkali dust and looking out on the hot arid wastes of sage brush and sand. We saw the mining shafts in the side hills near Baker City, where the placer mines are fairly productive, and just above Huntington we came upon the prison camp where a portion of the Coxey tramps are serving out a sentence of the Federal Court under guard of a detachment of regular troops from the Fourth and Fourteenth Infantry. The commanding officer in conversation informed us that these people were the toughest of their class. They were kept in a small level area of about four acres between the embankment of the railroad and the river, with high alkali hills on either side, without shade and exposed to the violent rays of a scorching sun. Notwithstanding their condition the majority absolutely refused to work when lumber and materials were furnished them for the construction of a barrack for their own accommodation—14 men out of 175 were willing, and began to put up the barracks, but were obliged by the remainder of the "unemployed" to cease work. The commanding officer then detailed a guard to protect them while at work and the building of the barracks was in progress as we passed. It is safe to say that our "boys in blue" were not enthusiastic about the nature of the duty. June 15 our train arrived at Montpelier, Idaho, at about 7 A.M., and barring the mosquitos, which were the most vicious of their class, we were in a pleasant region; snow-capped mountains surrounded us, and Bear River, a clear and beautiful trout stream, was full to its banks. The remainder of the journey was without incident and we arrived in Chicago June 17.

South Carolina Practice of Medicine Act.

AIKEN S. C., June 9, 1894.

To the Editor:—In the issue of your paper March 10, 1894, page 355 in the article, "Legal Requirements for the Practice of Medicine in the United States," you have the law for South Carolina wrong; please correct it as it is apt to mislead doctors wishing to come in the State to practice.

The Legislature of 1893 passed a law which went into effect Jan. 4, 1894. The law provided for the appointment of a State Board of Medical Examiners to be composed of seven members, whose duty it is to examine all candidates who wish to practice medicine in the State and who were not registered Jan. 4, 1894. The candidate must first show his diploma and he is then given a written examination of two hours on each of the seven principal branches. The next meeting of the Board is Oct. 9, 1894, at Columbia, S. C.

Yours truly,

C. F. MCGAHAN.

The Physicians' Sanitarium.

SAN FRANCISCO, June 8, 1894.

To the Editor:—There is an error in the announcement of the Physicians' Sanitarium which appeared in your issue of May 5 and possibly in subsequent issues.

I am not connected with that institution in that or any other capacity.

While I did contemplate connecting myself with that enterprise and deem such an institution, conducted on ethical lines, a proper enterprise in which physicians might and should engage, I declined permitting my name to be used in connection therewith upon seeing a circular emanating from a business manager thereof, and though the circulars have since been withdrawn I have yet no connection with that institution.

I make this statement with no intention to reflect upon the present management of the said institution, which I believe to be now ethically conducted.

Respectfully,

C. H. HUGHES, M.D., St. Louis.

Correction.

OTTAWA, CAN., June 6, 1894.

To the Editor:—It has but just come to my notice that there are several unpleasant typographical errors in my paper on Physiotherapy in the JOURNAL of May 26, and which I corrected in revised proof. I presume you did not receive proof before going to press. Besides errors in the Greek lettering, in spelling two or three proper names and in punctuation, especially in breaking with a period and a capital the last sentence (a long one, to be sure) in the first paragraph, there are errors in the last paragraph which would lead a hasty reader to think it was I who had started the "water cure." Instead of, "I placed myself under the care of a Mr. Brown, who had during the time of Priessnitz a popularity which extended to the uttermost parts of the earth; and started a . . 'water cure,'" kindly make it read: "Brown, who had during the time of Priessnitz's popularity, which extended, etc., started a 'water cure.'"

EDWARD PLAYTER.

NECROLOGY.

WILLIAM T. BRIGGS, M.D., of Nashville, Tenn., June 13. He was born at Bowling Green, Ky., Dec. 4, 1828, and received his literary education in the schools of his native town. He then graduated in medicine at the Transylvania University at Lexington, Ky., when not 21 years of age. He returned to Bowling Green, Ky., and entered the practice of medicine with his father. He remained there three years when he was elected Demonstrator of Anatomy in the Medical Department of the University of Nashville. This was in 1852 and he removed to that city at once and has lived there ever

since. Soon after going to Nashville, he formed a partnership with Dr. John W. Watson, one of the most eminent physicians of his day. This partnership continued up to Dr. Watson's death in 1866. In 1856 Dr. Briggs was made a joint Professor of Anatomy with Dr. Thomas R. Jennings, Professor of Anatomy in the University. The University suspended during the war, but in 1865 when it was reopened Dr. Briggs was elected to the chair of surgical anatomy and physiology, which he held until transferred to the chair of obstetrics and diseases of women and children made vacant by the death of Dr. Watson. In 1868 he succeeded Dr. Paul F. Eve, Sr., as Professor of Surgery, and this position he continued to hold with marked ability in the consolidated medical departments of the University of Nashville and Vanderbilt University up to his death.

Dr. Briggs was a member and ex-President of the American Medical Association. He had been honored by this Association on several occasions, being elected a vice-President in 1881, President in 1890, delegate to the International Medical Congress of London, England, and was recently elected one of the Association's delegates to attend the International Medical Congress of Rome, Italy. He was one of the founders of the American Surgical Association, and was its President in 1885. He was chosen President of the Section on General Surgery in the International Congress held at Washington in 1887. He has several times been honored with the presidency of the State Medical Association.

In 1850 Dr. Briggs married Miss Annie E. Stubbins, of Bowling Green, Ky. His wife died about a month ago. By this marriage four children, all of whom are living, were born. They are Dr. Charles S. Briggs, Professor of Surgical Anatomy and Operative Surgery in the medical departments of the University of Nashville and Vanderbilt University; Dr. Waldo Briggs, of St. Louis; Miss Virginia Briggs and Dr. Samuel S. Briggs, a young physician of this city.

Dr. Briggs was author of quite a number of valuable publications. Principal among them were: "History of Surgery in Middle Tennessee," "Tetanus Treated by Chloroform," "Successful Amputation of the Shoulder Joint," "Traumatic Aneurism of the Internal Carotid, the Result of a Puncture," "Ligation of the Common Carotid and then of the Internal at the Seat of Injury."

E. Allen Wood, M.D., was born March 24, 1834, at Woods Run, Washington County, Pa., and died at Philadelphia, June 4, 1894. His immediate death was due to cerebral hemorrhage. He for several months suffered from an atheromatous condition of the cerebral vessels. He went to Philadelphia to attend the meetings of the Pennsylvania State Medical Society then in session; while there he became worse and entered the Medico-Chirurgical Hospital where he remained. Dr. E. Allen Wood was a son of Joseph and Sarah Allen Wood. He had one brother, Captain Thos. J. Wood, and two sisters, all of whom survive him. His early education was obtained in the public schools, and later, at the academy, at California, Washington County, Pa. His earliest ambition was to become an artist, but he afterward turned his attention to medicine and graduated from the Western Reserve Medical College, of Cleveland, Ohio. His preceptor was Dr. James Gordon, of Temperanceville, Allegheny County, Pa., a prominent member of the profession at that time. Dr. Wood was married in 1859 to Miss Lizzie Hopkins, of Brownsville, Pa., who survives him. After graduating he located at Library, Pa. This field soon became too narrow for a man of his ability, attainment and ambition, and he removed to McKeesport, Pa. After practicing there for two years he again removed to Birmingham, Pittsburg, where he remained until 1892, when he removed to East End, Pittsburg, and opened an office on Sixth Avenue, but still retaining his office in South Pittsburg in connection with his partner, Dr. J. E. T. Martin. He was held in high esteem by both laity and profession. He was the organizer of the South Side Medical Society, the oldest medical organization in Pittsburg and was one of its early Presidents. He was also President of the Allegheny County Medical Society, and in 1886 was President of the Pennsylvania State Medical Society. He was a member of the American Medical Association and was for several years Chairman of the Committee on Dietetics. He delivered several lectures before the Association upon Dietetics. As a lecturer and public speaker he was eloquent and original. He delivered a course of lectures before the New York Academy of Anthropology. He was one of the organizers of the Western Pennsylvania Medical College, of Pittsburg, and was the first Professor of Dietetics in that institution. He was beloved by the students for his earnest, witty and practical lectures. He was an honorary member of the Mississippi Valley Medical Association. He was one of the original members of the Mott Medical Club of this city, and was for years Division Surgeon of the Pennsylvania National Guard. During President Cleveland's last term he was one of the Pension Examiners for the Twenty-second District of Pennsylvania. He was from his early professional life interested in educational matters, and as in medical circles, he was a leader. He was for many years school director and also served in councils from this ward. He was elected to the Senate of Pennsylvania in 1875 from the Forty-fifth Senatorial District—a Republican stronghold, but he a Democrat. He was instrumental in framing the Anatomical Dissecting Act which has secured to medical students dissecting material. He was also active in the organization of the State Board of Health, and was for many years a member of the local board. He was a delegate to the National Democratic Conventton that nominated General Hancock and was a personal friend of Tilden, Hancock, S. J. Randall and many other prominent Democrats. At the time of his death he was President of the Lotus Club of the South Side, Pittsburg. Dr. Wood was widely known for his literary ability and was passionately fond of music and poetry. He was a lover of nature and delighted in hunting, fishing and rambling through green fields and mountain forests. Some of his literary efforts have been widely read. He has published "Tancredi," "Tom and I," "The Phantom Coaches," "Bimini," the libretto of the "Lion of Peru," "Karl, the Prize Winner," now being played on the stage, and was also author of many other poems, novels and librettos still in manuscript. He wrote for recreation and for the pleasure which it afforded. He was for many years an ardent worker in the American Medical Association, and his hatred of hypocrisy and outspoken plainness made him respected and beloved by his associates.

Charles P. James, M.D., of Brooklyn, May 22, 1894. Dr. James was a native of Brooklyn, having been born in that city nearly twenty-seven years ago. He was a graduate in medicine from the Long Island College Hospital in the class of 1891. He had been sick with gastritis and was under treatment by a neighboring physician. He was a member of the Kings County Medical Society.

SOCIETY PROCEEDINGS.

Cincinnati Obstetrical Society.

Meeting of April 12, 1894.

The President, T. P. White, M.D., in the Chair; E. S. McKee, M.D., Secretary.

CÆSAREAN SECTION.

Dr. C. A. L. Reed reported a case of Cæsarean section. The case emphasized some important clinical features, and proved the possibility of saving the child under very unfavorable circumstances. The child was saved but the mother died.

Dr. G. E. Jones inquired how soon after the death of the patient the microscopic sections were made.

Dr. Reed replied as early as one hour and as late as six hours after death.

ABSCESS.

Dr. Jones reported the following case: A young woman came into Christ's Hospital with an abscess three inches above the pubes. Why it was there was a puzzle. She had been operated on eighteen months prior for an ovarian tumor by Dr. Reed. The probe passed down behind the pubes for a considerable distance. With the curette this portion of the ligature (shown), which had been put on the stump, was fished up. The question is, are we not imposed on in our ligatures? In this specimen there seems to be a mixture of linen thread and silk.

Dr. Thad. A. Reamy (examining specimen)—I think this is impure silk.

Dr. Reed—The silk is manifestly impure. I have had this

same thing to happen to me several times. Generally there is some infection, followed by an abscess or sinus. Sometimes these ligatures, when once contaminated, will feed a sinus indefinitely.

INDUCED LABOR BY INJECTION OF GLYCERIN.

DR. BYRON STANTON reported a case of induced labor by injection of glycerin in the cavity of the uterus. The labor, which was induced on account of a small pelvis, came on in two and one-half hours. In a former case reported to this Society four hours were required. The amount of glycerin injected I do not consider important, as its hygroscopic action is very great, one-half ounce having caused labor. Glycerin is found to act much more promptly than water. I pass a catheter into the uterus as far as possible and inject with a uterine syringe, using sterilized glycerin. The end of the catheter beyond the eyelet is filled up with plaster-of-paris, so as to avoid the injection of air.

DR. J. L. CLEVELAND reported a very disastrous result from the injection of water into the uterus, in the hands of another practitioner. He did not think any air had been injected, and while he does not think this accident so likely to happen in the use of glycerin, we should be very careful to exclude air.

DR. REAMY—I have never used fluid of any kind to induce labor, for fear that I might inject air. Why can it be necessary to induce labor at once except in the case of convulsions? I am unable to appreciate why we should bring on labor in two or three hours, when two or three days are not objectionable, but probably better. I have not for years practiced any other method than to dilate the cervix with the finger and detach the membranes. The hand in the vagina should be sterilized and the woman placed in the lithotomy position. This means will succeed in every case in two or three days. You will be surprised to find what amount of dilatation can be obtained in twenty minutes' time by the use of the finger. Frequently, when called to attend a woman when the cervix does not dilate, by the use of the finger I bring on the labor to my convenience. I can not but realize that it is safer to use the finger than glycerin.

DR. C. D. PALMER said we must recognize the intra-uterine injections of glycerin as an efficacious means to induce a premature labor. Certainly the glycerin should first be sterilized, drained, and care taken that no air is injected into the uterus at the same time. Perfectly pure anhydrous glycerin would do better work than ordinary shop glycerin. The great advantage of its use is its promptness of inducing uterine contractions, and this may call for its use at times. I have used the method spoken of by Dr. Reamy, but have not found it uniformly successful. The use of the solid elastic gum bougie (never the female catheter) has never failed with me in inducing some uterine action within twelve hours. On two occasions I have been obliged to introduce another and larger one, to increase labor pains on the opposite side of the uterus. To avoid the attached placenta, and prevent any detachment of the same, the best position for these bougies is along the anterior and lateral uterine walls.

DR. STANTON—I think Dr. Palmer has had an unusually fortunate experience in the use of the bougie. In my case it has required from one to two days. I think it is an advantage to bring on labor in a short time, three, four or five hours being much better than twenty-four or forty-eight. Labor induced by glycerin is, I think, as nearly natural as any method. The separation of the membranes by the finger has sometimes failed, and the assistance of a sound or catheter has been found necessary to separate the membranes higher up.

DR. E. G. ZINKE reported a case which occurred at the college, the patient being past her expected time. At the suggestion of Dr. Palmer, separation of the membranes was made every day for two weeks, and still labor did not commence.

DR. REAMY—If you did this every day you did wrong; you kept up a constant irritation and did not give the uterus time to respond. I think if you had separated the membranes higher up you would probably have induced labor.

DR. RUFUS B. HALL questioned the propriety of bringing on labor before it commences, as a matter of convenience, and he did not think it devoid of all danger or responsibility, especially in the hands of incompetent persons.

DR. PALMER—I realize as much as any one the inconvenience of obstetrics, conflicting as it does, with other engagements and with sleep. I have often been tempted, but so far have always waited.

DR. REAMY—A young man without experience should not hasten labor by dilating the cervix. No one should do it without much experience. Many have not the mechanical touch or conception, and never attain it. I am only speaking as to whether it is justifiable to make the dilatation when the woman is within a few days of confinement. A skilful man selecting his case, it is perfectly proper to bring on labor four or five days before it is due; it is better for the woman and better for the physician. I have done it many times when the patient did not know it; it is even better that she should not know it. I prefer to use the fingers rather than Barnes' bags to dilate the cervix. The labor will be brought on more quickly at seven months than at full term.

MULTILOCULAR OVARIAN TUMOR.

DR. REAMY reported a case of plain multilocular ovarian tumor. Some of the fluid, which was colloid in nature, was discharged into the peritoneal cavity by the rupture of the cyst, due to the struggles during the process of anesthetization. There were no adhesions. Peritonitis set up in spite of the fact that all the fluid had been carefully removed, and the patient died of peritonitis in two days.

DR. ZINKE said it frequently happens that cysts rupture during the operation, either from adhesions or thinness of the cyst walls. He reported a case which happened in the practice of Mr. Tait. The fluid was all washed out and the patient recovered, with union by first intention. I believe that the contents of cysts are ordinarily not septic.

DR. HALL—I can recall the case of an old Welsh woman who was successfully operated on by Mr. Tait. Had the case reported by Dr. Reamy been mine I would have drained. My experience leads me to know that in those cases where fluid is turned out, it acts as an irritant to the peritoneal cavity and causes it to throw out more material.

DR. REAMY—I did not drain because there was no hemorrhage, and feared none. The fluid was all over the peritoneal cavity. I thought of drainage, but reasoned that if this fluid did harm it would cause general peritonitis. Best authorities consider that the drainage tube drains only the peritoneal cavity. I thought it best that this cavity should be hermetically sealed.

PUBLIC HEALTH.

Cholera on the Continent.—It is predicted that the spread of Asiatic cholera from Russia into Austria and Eastern Germany and its continuance in the western departments of France will cause a considerable part of the Continent to be infected during the present summer. It is believed that the disease is more prevalent in France and Belgium than is reported; there has been a recrudescence of last year's outbreaks in L'Orient and Quimper, port cities of Finisterre and Morbihan, the infected western French departments, and sporadic cases are reported in Paris.

Smallpox on Staten Island.—New York City is undergoing a newspaper "scare," based on the existence of smallpox at Stapleton, S. I., where, it is alleged, variola has been diagnosed as varicella for several weeks, during all which time smallpox convalescents have been visiting New York daily. Dr. A. H. Doty, Chief Inspector of Contagious Diseases of the New York City Board of Health, has visited Stapleton and most positively asserts that the disease is smallpox and that the metropolis is in danger from the infected place. Health Commissioner Edson should welcome this occasion for securing further vaccinal protection for his own bailiwick. Properly utilized there is much virtue in the occasional "scare."

Is this a Sanitary Utopia?—Imagine the following as an item of official intelligence from Washington, D. C., U. S. A.: "The German Cultus-Minister has, in response to repeated stimulation by a sanitarian deputy, consented to organize systematic courses of instruction in matters appertaining to public health, for the especial benefit of members of the German Legislature; lectures are to be given in the Legislative Chamber itself by the professors of hygiene of the

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ADDRESS.

SOME SURGICAL SINS.

The Chairman's Address read in the Section on Surgery and Anatomy at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5–8, 1894.

BY JOHN B. ROBERTS, A.M., M.D.
PHILADELPHIA.

A very significant fact in the surgical literature of recent months has been the evidence of reaction against an over-hasty adoption of operative methods of treatment. The general conviction of the relative certainty with which operative attacks could be freed from septic consequences quickly bred a crop of surgeons whose surgical learning scarcely kept pace with their operative zeal and the force of whose dogmatic assertions was only equaled by their rapidity in publishing tables of cures.

The low death rates of the new surgery made such a contrast with the mortalities recorded in accepted text-books that the men who believed the new gospel—naturally the young—were enchanted by the safety with which they could operate for conditions that older and more cautious surgeons hesitated to so treat. Many of us have stood appalled at the temerity, and astonished at the pathology, of these operative members of the profession. An omen of true progress can be seen in the tendency of even these to so restrict the use of the knife, and to reflect that the true surgeon must have accurate pathologic knowledge and good surgical judgment as well as operative dexterity. Of what advantage is it to a patient to undergo an operation, within the scheduled number of seconds, or with the loss of the promised minims of blood, if the operation was not demanded? Who cares whether he carries a scar one or two centimeters in length, if he could have been equally well cured without scar, and without the necessity and expense of a surgical procedure? "Look at the dozens of operations done by me this year without a death," says the operator. His less enthusiastic neighbor thinks of the proverbial kinds of falsehoods, "lies, damned lies, and statistics," and replies: "Reports of large numbers of cases subjected to operation seldom fail to beget a suspicion of unjustifiable risk."

It seems to me that a revival of learning in surgery is upon us, a going back to the study of etiology, symptomatology, diagnosis and treatment, destined to restrain unseemly haste in adopting the scalpel as a panacea. If my observation of late events has been correct and unprejudiced, the operative madness has usually, though not always, been endemic among those whose preliminary educational training has been circumscribed and whose medical study and experience have been in one field rather than in all. Dogmatists in science and in religion are most usually found among those of limited scientific and worldly knowledge. No one will deny the assertion that the best professional judgment would be found in a man who successively had had years of medical, surgical and special experience. The present breadth of medical science prohibits such experience in a human life; but the nearer a physician attains it the more valuable is he to the community.

The exaction of preliminary education, the lengthening of college courses and the association of doctors in meetings, such as this, are the correctives which will cure the specialist of his egotism, compel the conservative to know the value of new things, and drive the sluggard and ignorant to his medical journals and books. A true surgeon can not lack broad culture, modest self-denial, accurate judgment and unselfish regard for his patient.

This at least was the opinion of Thomas Vicary, Sergeant Chyrurgeon to Henry VIII., who well tells us "what properties and conditions a man must have before he be a perfect Chirugion." His advice in 1577 may well be studied in 1894. "The first (I sayde) he ought to be learned and that he know his principles, not onely in Chirurgerie but also in Phisicke, that he may the better defende his Surgery: Also he ought to be seene in Natural Philosophie, and in Grammer, that he speake congruitie in Logike, that teacheth him to proue his proportions with good reason. In Rethorike, that teacheth him to speak seemely and eloquently; also in Theorike, that teacheth him to know thinges naturall, and not naturall, and thinges agaynst Nature. Also he must know the Anatomie, for al Authors write against those Surgions that worke in man's body not knowing the Anatomie, for they be likened to a blind man that cutteth in a vine tree for he taketh more or lesse than he ought to doo." . . .

"The ijd, I said, he must be expert: For Rasus sayth he oughte to knowe and to see other men work and after to haue vse and exercise. The thirde, that he be ingenious or witty: For al things belonging to chirurgerie may not be written nor with letters set foorth. The fourth (I sayde), that he must be wel manered, and that he haue al these good conditions here following:"

"That a Chirurgion must take heed he deceiue no man, with his vayne promises, nor to make of a smal matter a greate, because he woulde be accounted the more famous. Likewise, they shal geue no counsayle except they be asked, and then say their aduise by good deliberation, and that they be wel aduised afore they speake, chefly in the presence of wise men. Likewise they must be as priuie and as secrete as any Confessour of al thinges that they shal eyther heare or see in the house of their pacient. . . . And see they neuer prayse them selues for that redoundeth more to their shame and discredite than to their fame and worship: For a cunning and skilfull Chirurgion neede neuer vaunt of his dooings, for his works wyll euer get credite ynough. Likewise

that they despise no other Chirurgion without a great cause: For it is meete that one Chirurgion should loue another, as Christe loueth vs al."

John of Arderne who wrote two hundred years earlier than Vicary appears to have been familiar with some of our nineteenth century tendencies. He was a specialist and, in accordance with the inherent tendency, wrote a treatise on anal fistula. After detailing the names and addresses of his patients and giving his own residence, he says, according to a fifteenth century translation of his Latin monograph:

"All these foreseid cured I afore the makyng of this boke oure lord Ihsu ye blessid God knoweth that I lye nogh*t*. And therefore no man dout of this thof although old famous men and ful of clere (renowned) in studie haue confessed tham that thei fande nat the wey of curation in this case; for God that is deler or rewarder of Wisdom hathe hid many thingis from Wise men and sligh*e* (cunning) whiche he vouchesafeth afterward for to shewe to symple men.". "Therefore I pray that the grace of the holy gost be to this werke that he vouchesaf for to spede it; that the thinges whiche in wirking trewly I am ofte tymes experte I may plenevly (fully) explane tham in this litel boke. It is lefull forsoth for to sey that (what) is knowen and for to witnes that is seene.

"And this I sey that I know nogh*t* in al my tyme ne heard nogh*t* in al my tyme of any man nother (neither) in yngland ne in partiez biyonde the see, that kouthe cure fistula in ano outake (except) a frere minor that was withe the prince of Walez in gascon and gyan (Guienne) whiche rosed and bosted hym that he had cured the forseid sekenes. And at london he deceyued many men. And when he migh*t* nogh*t* cure som man he made suggestion to tham that no man migh*t* cure tham and that affermed he with swering that yif the fistule was dried that the pacient at the next schuld nogh*t* eschape dethe whiche forsoth ylefte and forsake of hym I cured perfitely."

Notwithstanding this author's characteristic vaunting of his own special skill he appears to have been too wise to speak against the general practitioners, for in his book on "Ye manere of ye Leche"—"the Conduct of the Physician,"—he gives this advice:

"He that skorneth other men shal not go away vnskorned. Yif ther be made speche to hym of any leche nouther sette he hym at nough*t*, ne preise hym to mich or commende hym but thus may he curteysly answere, I haue nogh*t* eny knowleche of hym, but I lerned nogh*t* ne I have not herd of hym but gode and honeste; and of this shal honour and thankyngis of eche party encresse and multiplie to hym; aftur this, Honour is in the honorant and nogh*t* in the honored."

The cultivation of a habit of accurate statement, as well as of observation, would save many of us from criticism and teach us to be cautious about criticising others. Mr. Charles A. Dana in a recent address on journalism insisted that the faculty of seeing a thing as it is was one of the most precious ends of a good education, and advised newspaper men to tell what they knew accurately and without exaggeration or prejudice. It is usually a habit of inaccurate statement which impels a surgeon to say that an important operation is absolutely safe; and then calmly report a list of such cases containing several fatal operations. The surgeons who open an abdomen seven or eight times are almost as certainly lacking in judicious and accurate study of symptoms as the woman who permits it is ignorant of surgery. Yet a patient recently requested abdominal section at one of the hospitals with which I am connected, saying that she had already been subjected to seven such operations. I would think her statement untrue if my ears had not heard and my eyes seen similar things.

Due regard is not given by us to the influence of the nervous system upon the health. Many patients can be cured, by medicine or psychic remedies, of symptoms which would induce some surgeons to resort at once to mutilating operations. This statement does not apply alone to pelvic conditions but to affections of joints, muscles and viscera. My experience at the Woman's Hospital in Philadelphia, and in private practice justifies this assertion.

I am impelled to believe, though I dislike to do so, that the establishment and personal control of private hospitals by surgeons is a distinct evil. Such institutions seem, to me at least, to tend to warp the judgment; and make the surgeon's prospective income somewhat obscure the correct view of the patient's good. Practically it is rather difficult for a doctor to keep a hotel for patients without having his professional ethics a little blunted by a hotel proprietor's proper desire for many and long-staying patients. I regret that our human nature is liable to be thus tainted, because surgery can be better done, and sometimes more cheaply done, in a hospital than in a patient's home. I am convinced, however, that the truest ethical spirit is not developed by these private hospitals maintained for the pecuniary and professional advantage of one man. While some may do no harm, many tend to develop selfishness, theatrical operations, and a mercenary spirit foreign to the highest type of surgeon. I confess a similar distrust of private and corporate sanitaria. I know they frequently do much good for invalids, but the bestowal upon physicians by some of these institutions of shares of stock, proportionate to the number of patients sent for treatment, does not increase my confidence in the system.

Demanding unusually large fees for professional services is a surgical sin, which the increasing number of skilled surgeons is happily correcting. To send a bill for a large amount simply because the patient is wealthy does not appear to be just, and to obtain the money because the patient is in fear of death and dares not employ a less expensive attendant makes one think of the methods of the footpad who demands your money or your life. A high degree of skill and heavy professional responsibility undoubtedly deserve adequate pecuniary recognition, but the true surgeon will always recollect that practicing surgery for money alone degrades a noble profession to the level of a trade.

Declination to see a poor patient with a practitioner who desires the advice of a consultant is a similar wrong. Our common brotherhood teaches us to charge no fee for attending another doctor and his family. It is just as imperative that we go to his help when an obscure case gives him anxiety. A surgeon who will not aid another with his counsel because the patient can not pay the regular fee is a poor representative of the medical guild. Equally censurable is the hospital surgeon who allows insignificant causes to keep him from formal consultations called by his colleagues.

Not less destructive to the purposes of scientific

surgery is the use by many surgeons of secret nostrums. While many of these may have active ingredients, their use is unscientific and unworthy of us, because we have no knowledge of their *exact* composition, and hence can not treat our patients with accuracy and precision. A distinguished English surgeon once said: "The glory of surgery is precision." Very little precision characterizes the methods of the nostrum-employer; hence his surgery is usually far from glorious. Dr. J. T. Graham, of Virginia, has justly said on this topic: "Whenever a physician becomes too negligent to study his cases and prescribe well-known and tried remedies for definite pathologic conditions, he is no addition to his profession. As long as pure drugs are manufactured, as long as scientific works on materia medica and therapeutics are written, as long as ample facilities for acquiring a knowledge of medicine exist, there is no excuse for the physician acquiring the habit of prescribing patent medicines."

ORIGINAL ARTICLES.

A CRITIQUE OF THE SPOROZOAN THEORY OF MALIGNANT NEOPLASMS FROM A MICRO-TECHNICAL STANDPOINT.

Read in the Section on Surgery and Anatomy at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5-8, 1894.

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The present condition of the sporozoan theory of the etiology of malignant tumors in man and the higher animals is one of much confusion. The student of this subject is confronted by a multitude of imperfectly digested contributions from investigators of all ranks of excellence. It is astonishing to note the variety of objects which have been assigned to the class of cancer parasites by over enthusiastic workers. Almost every object which presents itself in the histologic study of malignant tumor tissue has been described as the carcinoma organism, from the blood elements on the one hand, to the tumor cells themselves, on the other. Red blood cells, leucocytes, blood plates, invaginated cells, endogenous cell formations, irregular nuclear division products, metabolic cell products, cell-degeneration products, capillaries filled with blood corpuscles, and other objects, familiar to the careful histologist, have been interpreted as parasites by some investigator in this field. The fact of the matter is that this mass of unscientific material, to which daily additions are being made, has brought the whole subject into ridicule and, instead of increasing our knowledge of this vital question, this worthless material has only served to burden and retard future research.

It is a difficult matter to assign all of the causes that have led to this distressing situation. One point, however, will impress itself upon the careful student of this question, and that is that the majority of contributions come from men of too narrow preliminary training; that is, the investigators may be too readily classified into the pure biologists or the pure pathologists. That is to say, of the pathologists, for instance, that while they have shown a due amount of familiarity with the histologic structure and clinical manifestations of malignant neoplasms, they have shown a lack of fundamental knowledge of the morphology and life history of that class of organisms to which they have assigned the etiologic rôle; that is, the class *Sporozoa* of the sub-kingdom *Protozoa*. Conversely, the contributions of the biologists who have attacked this problem proclaim their familiarity with the comparatively little that is known of the life history of the various sporozoa; but their works exhibit an ignorance of the pathologic and clinical side of the study of malignant tumors. It is not uncommon, even in the very recent papers, to find the most absurd statements regarding the classification and zoölogic position of the sporozoa, to say nothing of the morphology and physiology of these organisms.

One thing at least is obvious, and that is that all investigators in this direction should thoroughly familiarize themselves with the peculiar organisms whose presence in tumors is suspected. Had not Koch been familiar with the considerable knowledge of bacteria accumulated at the time of his classical researches upon tuberculosis, it is doubtful whether his remarkable studies would have been given to medicine in the very complete condition which marked them a scientific masterpiece.

It is not within the province of this paper to enter into a detailed discussion of the foregoing statements, nor is it possible to touch upon the manifold aspects of the sporozoan theory of malignant neoplasms. The work thus far accomplished has been thoroughly reviewed upon several occasions, the most recent review being the very excellent bibliographical and critical summary of Stroebe,[1] to which the student may be referred.

The study of the parasitic organisms of tumors has thus far been almost exclusively confined to the microscopic examination of sections of fixed and stained tumor tissue. Under this head comes the work of the large majority of investigators who have attained prominence in the discussion of this subject. It is to this particular method of study that we shall direct attention.

There is a growing conviction in the minds of many students of biology and pathology that the wonderful advances in micro-technical methods of the last decade are becoming elements of serious danger. A reaction against the extreme tendency of the new microtomy is slowly finding expression. The fact that a host of microscopic methods are in vogue which rest upon purely empirical bases can not be denied, and these empirical methods must all come within the scrutiny of exact scientific research before their results can be accepted. It is scarcely too much to predict that a day of reckoning is coming in microtomy when many beautifully constructed histologic edifices will be rudely shattered; and in this destructive analysis American investigators, with their natural skepticism and keen criticism, will take no small part. The work has already begun in several contributions dealing especially with the anatomy and histology of the nervous system. The artificial products resulting from a mixture of numerous reagents of unknown effect, the artificial products of the mechanical aids employed in gross and microscopic anatomy, and the artificial products of our optical appliances—all of these so-called

[1] Cent. f. Allgem. Path. u. Path. Anat. V Band. Nos. 1, 2, ?, 1894.

"artefacts" must be rigidly analyzed and put upon firm scientific foundations before a good working basis shall have been reached.

Into this category comes all of the work upon the tumor parasites which is founded upon a microscopic study of the tumor tissue alone. In consulting the chapter on technique in each of the various papers upon the cancer parasite, it will be noted that all manner of combinations of fixing reagents and staining reagents have been employed. To one who has made an analytical study of reagent-effect in histology, it must at once occur that from this variety of technical processes a variety of effects have been produced in which the *reagents themselves* played a very essential part.

Upon two previous occasions I have endeavored to direct attention to the importance of a consideration of the reagent effect in the studies upon the sporozoan parasites of tumors. In the first communication[2] I tried to prove that the work of Podwyssozki and Sawtschenko, and of Stroebe, was of limited value, because these investigators employed in their technique a combination of safranin and picric acid in staining, which, according to my experiments, gave rise to dangerous artefacts in the tissue elements. I found, for instance, that if safranin staining was followed by a washing out with picric acid-alcohol, minute crystalline artefacts were very frequently deposited in the section thus stained.

These very minute artefacts resembled in size, shape and color, the bodies described by Podwyssozki and Sawtschenko, and by Stroebe, as segmentation products of their sporozoan parasites, and I could not resist the conclusion that they had these artificial products under observation.

In a second paper[3] I described a new species of myxosporidia which I had discovered in the kidney of the common toad, and as a result of certain microtechnical studies upon these sporozoa, I again directed attention to the dangers underlying the carcinoma investigations. This second paper was supplemented by a communication from Dr. Whinery,[4] who extended the description of the morphology of this myxosporidium, and who recorded further microtechnical studies.

Since the publication of my first paper I have continued the study of reagent-effect in tissues, and upon the sporozoan parasite of the toad, and I desire to bring a brief outline of this work to your attention.

My first observations were confined to an analytical study of reagent effect in normal tissues from a variety of vertebrate animals. The object of this work was to assign, if possible, the significance of the *method* in modern cytologic research. In this study the older methods of hardening and staining were discarded, and a series of fixing agents and staining agents, as advised by recent cytologists, was employed. Regarding this work I can only say here that the results were frequently astonishing, and that I was most profoundly impressed with the very great significance of technical modifications in all work of this character. It was in close connection with this study that I undertook an investigation of the carcinoma organism question, and it quite naturally followed that I was much inclined to scrutinize all of my work on this subject from the standpoint of the microtomist.

Upon the discovery of the myxosporidia in the kidney of the toad, I embraced the excellent opportunity afforded by these specimens for a comparative study of the reagents commonly employed by carcinoma investigators. Here was a good-sized sporozoan present in a matrix of animal tissue. What better opportunity for a control study of micro-technical effects could be desired?

In order to make clear the following summary of the experiments in the micro-technical reactions of these myxosporidia in the kidney tissue, it will be well to direct attention to the structure of these organisms, and to their relations to the host's tissue. In his paper, Whinery[5] has given a very clear description of these myxosporidia, and he has accompanied the description by a good diagrammatic illustration.

These sporozoas were found only in their spore form. The spore is an oval structure, bounded externally by a striated, bi-valvular shell. Within the shell are found two spherical bodies, highly refractive in fresh preparations, and termed by Gurley, whose nomenclature we have adopted, capsules. Opposite the capsules lies a plasmatic mass, crescentic in shape, and containing in its substance several small, highly refractive bodies, the "nuclei" of Thelohan; this mass is called the sporoplasm. The myxosporidian spores lie in the tubules of the infected kidney, sometimes embedded in an albuminous secretion. The spores are frequently present in such numbers as to fill the entire lumen of a kidney tubule.

Pieces of kidney tissue containing the sporozoa were killed in a variety of fixing solutions, immediately after the death of the animal from chloroform. Of these fixing agents I directed especial attention to Flemming's solution, corrosive sublimate, absolute alcohol, Hermann's solution, Peryni's fluid, and Carnoy's solution. Concerning the behavior of these solutions upon the spores of this myxosporid, it may be briefly said that Flemming's solution, Hermann's solution, and Peryni's fluid, were very harmful to the spore structure. In other words, solutions containing chromic acid, or osmic acid, were unsuited to the preservation of these organisms. It must be remembered that these mixtures take first rank among the reliable fixing solutions of the cytologist, and that they are largely employed by recent carcinoma investigators. These three mixtures all produced a shrinking of the spore shell, and a distortion of the spore contents. Often this distortion of the spores was so extreme as to make it difficult to recognize these bodies in the kidney tubules. Not only did these fixing agents distort the spores as a primary effect of their application, but they interfered greatly with subsequent staining. With all of this harmful action on the myxosporidia, these fixing solutions preserved the cells and nuclei of the kidney tissue with their usual faithfulness.

Absolute alcohol, and Carnoy's chloroform acetic alcohol mixture gave very excellent results. The sporozoa were preserved without distortion, and the subsequent staining with appropriate dyes was very successful. With these media the kidney tissue elements were also well preserved.

Corrosive sublimate, while preserving the sporozoa and the tissue elements without harmful distortion was not entirely satisfactory, for the reason that it was washed out of the sections with great

[2] Journal of the American Medical Association, Vol. xx, No. 5, 1893, pp. 111-117.

[3] Journal of the American Medical Association, Vol. xx, No. 20, 1893, pp. 561-567.

[4] New York Medical Journal Vol. lviii No. 23. 1893, pp. 660-662.

[5] Loc. cit.

difficulty; and it was no uncommon occurrence to find, even after the most vigorous attempts to remove the sublimate crystals (treating sections with tincture of iodin and alcohol, as advised by Heidenhain), that these crystals still remained behind, particularly within the shells of the myxosporidian spores.

In this record of my experiments with staining solutions, I shall confine myself to a brief outline of the results obtained by those reagents which have found especial favor among the carcinoma organism investigators. I shall describe the combinations with absolute alcohol fixation in some detail, because this fixing agent gave a very faithful preservation of the kidney parasites. All of these descriptions refer to sections of tissue, cut after paraffin embedding, affixed to the slide by the water-albumen method, stained on the slide, and mounted in Canada balsam.

Absolute Alcohol; Ehrlich's Acid Hematoxylin, followed by Eosin.—With the low power (Leitz No. 3 objective) the myoxsporidia can not be detected in the kidney tissue. The kidney elements are well stained. With high power (Leitz No. 7) the myxosporidian spores can only be recognized with difficulty. Were not their presence and location previously known, the detection of the spores in these sections would be a fruitless task. Kidney tubules filled with the organisms might easily be overlooked. The spores are massed together in an albuminous matrix; and they appear as faintly outlined, structureless bodies. Only occasionally do the spores show a faintly outlined, purple capsule. The curious feature about this staining combination is that the filaments (thread-like flagella projecting from the capsules through the spore shell, beyond the spore) of many spores are often deeply stained. In tubules containing a mass of spores, the filaments radiate in all directions, producing a prominent network of dark stained threads.

Absolute Alcohol; Ehrlich's Hematoxylin, and Babe's Safranin.—The kidney tissue shows a characteristic double stain, with a predominating purple color. The spores appear as brilliant red, shrunken bodies; and their contents can not be clearly outlined. The filaments are again prominent and stain a deep red color.

Other mixtures of hematoxylin gave essentially similar results.

Absolute Alcohol and Pfitzner's Alcoholic Safranin.—In sections well washed out with acidulated alcohol, after staining, the sporozoa appear as very prominent, deep red bodies, in a nearly colorless ground. The capsules stain with especial vigor with this solution, and stand out in the preparations with startling distinctness. The sporoplasm stains a light red color; while the shell and filaments remain unstained. This is the most successful stain of the series on account of its wonderful selective affinity for the capsules, and because, with good fixing agents (absolute alcohol, corrosive sublimate, and Carnoy's fluid,) it never deposits artefacts in the spores.

When Pfitzner's safranin is followed by aqueous methyl blue as a contrast stain, a beautiful double stain is produced. The kidney tissue stains blue; the capsules of the spores, brilliantly red; and the sporoplasm, a light blue. I have, in a former paper, directed attention to this marked dichromophilism of the spore contents of this organism. With this safranin staining, the spores appear small because the shells do not take the stain.

Absolute Alcohol; Babe's Anilin-Water Safranin.—In sections washed with acidulated (HCl) alcohol, the spores are prominent as large pink bodies. The capsules are stained a moderate red; the sporoplasm a faint pink; and the *shell*, itself, partakes of a light pink color. This staining of the shells makes the organism appear larger than in specimens stained with alcoholic safranin. Many of the shells exhibit the characteristic striation; and some show the valve junction line.

Babe's safranin, followed by picric alcohol (the method of Podwyssozki and Sawtschenko) gave remarkable preparations. The spores appeared as prominent deep reddish-brown bodies. On examining these spores closely with a high power, it was found that the *spore shells were filled with masses of deep red artefacts.* I at once recognized these artefacts as the safranin picric acid crystals. These crystalline artefacts from their size, shape and location within the spore shell, might readily have been looked upon as segmentation masses (as "sickle-shaped embryos") had not this staining been controlled by numerous other combinations. I looked upon this experiment as a striking corroboration of my previous work on the safranin picric acid reaction.

Absolute Alcohol; and the Ehrlich-Biondi Reagent.—These preparations show the characteristically beautiful tissue staining of this reagent. Upon the sporozoa, however, the stain was a dismal failure. The spores appeared to resist the stain and only occasionally the sporoplasm of a spore would show a trace of dirty green color. The capsules and shells remained uncolored.

Absolute Alcohol; Russell's Carbol-Fuchsin, and Carbol-Iodin green combination.—This staining method proved excellent for the sporozoa. The capsules stained a deep red with the fuchsin; and the sporoplasm took a well marked green color. The shell was clearly visible in these preparations.

Absolute Alcohol; and Gentian Violet after Gram's Method.—The spores are prominent on account of their deep purple color. The shells are very heavily stained; so intensely, indeed, as to often hide the other spore structures. Many shells exhibit their striæ. In one preparation, after this method, the filaments were stained.

Corrosive Sublimate; and Carnoy's Fluid; in combination with the above-mentioned stains.—In a general way the results were similar to those obtained with tissue fixed in absolute alcohol. The only difference noted was the occasional interference of sublimate crystals, in preparations imperfectly washed. Contrary to my expectations, the Ehrlich-Biondi reagent did not give better preparations in sublimate fixed tissue, than in tissue fixed in absolute alcohol.

Flemming's Solution; Hermann's Solution; and Peryni's Fluid; followed by the above-mentioned stains.—Since these fixing fluids did not preserve the spores well, it naturally followed that the staining effects were poor. A variety of curious artefacts were produced in the stained spores, distorted by these fixing fluids. It is impossible to indicate these artefacts here, and we may dismiss this subject by saying that these three standard fixing solutions, together with all staining combinations, are absolutely unsuited for the preservation and demonstration of the spores of these myxosporidia.

All of these experiments, following closely upon a study of tumor tissue after the methods in vogue

among the carcinoma organism investigators, have impressed me very profoundly with the inadequacy of this kind of study; and I must again insist that with all their dangers, the methods of new microtomy can never, in themselves, aid us in solving the very important question of the etiology of malignant tumors.

THE CLINICAL RECOGNITION OF MALIGNANCY IN TUMORS.

Read in the Section on Surgery and Anatomy, at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5-8, 1894.

BY CHARLES A. WHEATON, M.D.
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This subject has invited the attention of some of the brightest minds of our generation. To attempt a delineation of the specific outlines of a clinical picture of malignant disease is an undertaking of no small dimensions. It is usually easy for the thoroughly trained student of pathology to distinguish between benignancy and malignancy when he has sections of each under his microscope; but it is often a very different matter when the cases are presented clinically, and he has to straighten out the tangled threads of his clinical story that he may advise and act judiciously. The microscopist may be able to tell us all about the histologic character of cancer in its various forms, but it is primarily the surgeon's function to formulate his plan of defense and attack, on gross appearances and the clinical history. Prof. Daniel Lewis, of New York, in his little monograph (edition of 1892) designates all malignant neoplasms as "cancer," and such a classification is eminently satisfactory because of its simplicity, and I shall adopt it here in my paper.

Modern pathology has practically renounced allegiance to the old constitutional theory of the origin of cancer. The physical idiosyncrasy which renders one individual more susceptible to the development of cancer than another may be acquired by heredity, and in our clinical research the genealogic tree should be carefully scanned, with a view to establishing this etiologic factor. Gross finds in 712 cases of breast cancer, 11.28 per cent. traceable to predisposition of this character. Mr. Herbert Snow, of London, in an able article on "Early Diagnosis and Practical Surgery of Cancer," states that malignant new growths are almost entirely restricted to women above the age of 34, and to men past 40. Further, they appear in organs which have fulfilled their functional purpose, *e.g.*, "the sexual organs of women; or in tissues whose vitality has become conspicuously impaired, such as the buccal mucous tract of men. Hence we are bound to look with grave suspicion upon any incipient tumor formation in these parts of the respective sexes; in people growing old; in those whose general health and energies have from any cause become markedly undermined."

It is a fact generally conceded by all surgeons of experience, that the ghastly records of the operative treatment of cancer are, in a large measure, the result of the tardy recognition of the existing disease. When we review the statistics of the Registrar-General of England, as made by Dunn, with reference to cancer, we are appalled at the record: "During the first decade in which the study was made, namely, from 1860 to 1870, the total number of deaths from cancer was 80,049, the annual average increase being 248; during the second decade, 1870 to 1880, the deaths amounted to 111,301, the annual average increase being 320. If, as is assumed by the writer, the average increase of population is about 1 to 10 during each succeeding ten years, it is evident that this dreadful malady is outstripping very much the numerical increase of population."

How important, then, it is that we as individual members of this noble profession, should attempt to familiarize ourselves with the disease in its manifold forms, in order that we may contribute our mite to minimizing these frightful ravages. Accepting Dr. Snow's dictum, we are constrained to consider as one of the most important of the clinical questions in the investigation of this disease, the age of the individual. As before stated, with reference to the hereditary predisposition to cancer, we can satisfy ourselves that there is some occult condition of the tissues which is thus transmitted, by consulting the statistics of such men as Sibley, of the younger Gross, of Paget, Baker, Broca and many other distinguished authors and teachers.

Dr. Snow states that "it may be laid down as a practical axiom that no average species of malignant tumor in the adult ever appears without an adequate and generally ascertainable existing cause." He says: "11.7 per cent. of cases of breast cancer follow sudden injury, a blow or a fall; the remainder are consequent upon some agency of a neurotic character impeding the normal devolution of the mamma."

In almost identical language the same opinion was entertained by the late lamented Prof. Agnew, of Philadelphia. On page 656 of the last edition of his work on "Surgery," Vol. III, he says: "The influence of emotional causes, as protracted grief, the nervous depression following loss of property, anxiety and worry as predisposing factors in carcinoma, has been forcibly impressed on my mind for several years, especially with reference to cancer of the mammary gland."

In this connection it should be borne in mind that females furnish a much larger excess of cases of this disease than males. The explanation is probably to be found in the fact of the places of election in the female subject, namely, the breasts and the uterus. The explanation is the vicissitudes entailed by maternity. It is a well attested fact that in breast carcinoma in women we often have an antecedent history of mastitis. The tendency to malignant changes in the cervix which has been the victim of laceration as the result of parturition, is also understood; and it is probable that corporeal disease of epithelial types, as well as other forms of malignant change, result from the same cause. The relative frequency of the disease in the sexes is estimated by some writers at about six cases in the female to one in the male. Taking the reports of the Registrar-General of England again in illustration, for three years, 1878 to 1880 inclusive, the deaths from cancer among females amounted in the aggregate to 25,890; while among males there were 12,851. It is thought by some writers that the greater the fecundity of the female the greater is the liability to cancer.

It is a well understood fact, as before quoted from Mr. Snow, that diminution or loss of function in certain organs in consequence of advancing age, seems to have a definite causative relation in the production of cancer. With reference to the various traumatic causes of carcinoma outside of those connected

with procreation in the female, we have the various causes of irritation, ragged teeth, vicious habits which exercise a deteriorating influence on the epithelial lining of the buccal surface, syphilis, tuberculosis and various other conditions. So commonly is phimosis associated with cancer of the penis, that it has been considered as one of the prime factors in its causation. Its *modus operandi* is supposed to be the retention of secretion, its decomposition and the balanitis following it as the result of a chemical irritation. In the rectum we often have cancerous degeneration following hemorrhoids, fistula, syphilis and other conditions which produce prolonged irritation in this part of the alimentary tract.

The pain of carcinoma is never sufficiently characteristic to be relied upon as a positive symptom, because of the fact that the situation of the disease often gives in its expressions of pain the nature of the tissue involved, as, for example, the subperiosteal sarcomas of the long bones; the pain is rheumatic in character, at times acute and often involves the whole limb, and, as we know, is often mistaken for rheumatism. The lancinating pains of hard carcinoma of the breast are often associated with that condition, but are not its invariable accompaniment, and may be produced by simple chronic abscess of the breast, simple adenoma, etc.

Again, the gross appearances of tumors when very deeply placed in the body structures are not to be relied upon. The weight of growths involving the breast or the testis often conveys a very correct idea of its nature. Where these neoplasms are so situated as to be beyond the application of this test, it is of no value. The consistency of a growth often bears very significant testimony as to its character. In the thin flabby breast it is often possible to make a very positive diagnosis as to the character of the new growth by palpation. In the fat full organ, however, we may be easily misled. The old text-book symptom of retraction of the nipple in connection with cicatrizing carcinoma, is always a significant indication when present, but unfortunately it is not present in those cases of malignant disease seated deeply in the gland, and oftentimes not apparent where the growth is superficial and near its nipple. Fixation of the skin over the tumor, with discoloration and puckering, should always excite suspicion.

The mobility is another very important consideration, and when taken in connection with the other clinical conditions, may throw a good deal of light on the character of the tumor with which we have to deal. The well known disposition of all carcinomas, with the exception of the sarcomatous varieties, secondarily involving the lymphatics in the known channels of absorption, usually stamps the primary disease as malignant. As a rule, we know sarcoma does not manifest this tendency. In estimating the value of this lymphatic involvement, we should always bear in mind that such a condition may arise from simple inflammatory conditions, or be associated with syphilis or tuberculosis; we should remember, as well, that all these conditions may be associated with malignancy.

To briefly recapitulate before taking up the consideration of special regions of the body, we can not do better than follow the suggestions of Mr. Snow. We believe in the local origin of the disease; we believe in traumatism of some character as a cause; we believe to a limited extent in the influence of heredity; we believe that age in either sex is one of the most important factors for our consideration in determining as to the specific characteristics of the growth, as to its innocence or malignancy. From what has already been said, it is evident that age wields a wider influence in a diagnostic way than any other of the cited conditions which lead to malignancy. The enlarged gland in the neck or groin of a boy at 15, or an enlargement of the breast or thyroid gland in a girl of the same age, excites no special apprehension, because of the age of the individual; but carry these subjects thirty years farther along in their life journey, and these abnormal enlargements at once excite our suspicion.

The epitheliomatous variety of carcinoma, as we know, has a predilection for the mucous surfaces and outlets of the body. It is prone to implant itself upon many of the non-malignant diseases of the skin, such as warts, moles, simple ulcers, eczema of the nipple, as in Paget's disease, old cicatrices, etc. If we are to believe the teachings of Mr. Jonathan Hutchinson in an article on the origin of tumors, namely, that in every new growth there is a pre-cancerous stage, the onus of responsibility of those who assume to diagnose and dictate the treatment to be followed in these cases is indeed, one of great responsibility. Epithelial cancer is rarely seen under 40 years of age, oftener after 50. "In males the most common seats of the disease are the lower lip, some portions of the face, and the glans penis; in females, the uterus, the vulva, the anus and the face."—(Agnew). Again quoting from the same author, "it begins in various ways, sometimes as an indurated nodule, crack or fissure, and at other times in a papillary or wart-like prominence in the skin or mucous membrane. When the disease commences in the form of a hard mass or nodule, it is usually charged with great malignancy, passing soon into ulceration and invading the surrounding parts with great rapidity."

It is a well-known characteristic of epithelioma that when seated on the surface of the skin, its tendency is to extend superficially and not deeply, and it may exist for a long time without involving the subject in the systemic wreck which so rapidly follows its advancement upon the mucous surfaces. The explanation of this difference in the behavior of this growth in the two situations, as given by pathologists, is the resistance offered by the dense character of the tegumentary structures underlying the neoplasms. We have no doubt that this form of malignant disease may have been in existence for a long time, often a number of years, without any systemic involvement, and we also all know that so soon as the nearest lymphatic channels manifest by their enlargement that the disease has commenced its migration, that in the majority of instances the surgeon's knife shortens rather than lengthens life.

There is, perhaps no part of the body where early diagnosis would seem as easily obtainable as in the tongue, when attacked by malignant disease. And yet we often see epithelioma of the tongue which has been overlooked or disregarded until it has attained dimensions which preclude the possibility of relief at the hands of the surgeon. Within ten days a man, 74 years of age, applied to me, with an epitheliomatous tongue, which involved nearly two-thirds of its lateral surface; he told me he first noticed it six weeks before. It is probable that it had been in existence for several months.

Mr. Butlin in his recent work on "Operative Surgery of Malignant Disease" reiterates practically the teachings of Mr. Jonathan Hutchinson, in speaking of the pre-cancerous stage of diseases of the tongue, in the following very forcible language: "It is very important to bear in mind, not only for the purpose of more certain diagnosis, but in the prophylactic treatment, that carcinoma of the tongue is, in a large number of instances, preceded by some chronic affection of the surface of the tongue. Chronic superficial glossitis or one of the several conditions which are due to it, such as ichthyosis, psoriasis, leucoma."

The physical characteristics and the clinical behavior of epithelioma elsewhere in the cavity of the mouth, in the pharynx, or on the tonsils, or at the inferior outlet of the alimentary canal, or on the male or female genitalia, are practically the same and need no further consideration, except in connection with the uterus. Any woman who has attained to the age of cancerous susceptibility, who suffers from a menorrhagia or metrorrhagia, should undergo an immediate and thorough physical examination, and if she shall have passed the climacteric and should again bleed from the mucous surfaces of the pelvis, we are led at once to believe that malignancy is its cause.

The female breast furnishes more examples of malignant growths than any other organ of the body. The malignant tumors which are found in this situation are the different varieties of sarcoma and the hard and soft carcinoma, carcinoma being the more common. Sarcoma of the breast is usually a disease of early or mature life; it occurs somewhere between the ages of 20 and 35; more common among married than among unmarried women. The tumor is usually single, occurs in the breast at a time which we have been pleased to style, according to historical limitations, the pre-cancerous period of woman's life, grows with considerable rapidity, is moderately hard, is often lobulated in harmony with the conformation of the gland, shows little tendency to adhere to the skin or to ulcerate and break down, not often associated with much pain, and showing little disposition to involve the tributary lymphatics. This, briefly, is the description of sarcoma as ordinarily encountered.

The hard carcinoma, or scirrhus carcinoma, so-called, appears usually after the fortieth year of life. Prof. Gross, the younger, in his analysis of 642 cases found the average age to be 48, and stated that the disease was not at all uncommon after 60 or 65. It is more common among married women, and women who have borne children furnish relatively the larger number of cases of this form of cancer. It does not show the disposition to encapsulation that is found in sarcoma, but tends to disseminate itself through all the structures of the gland. In many of the circumscribed forms the tumor conveys the impression to the finger of being very hard; it is often irregular and knobby, and is usually tender to the touch, and often associated with sharp, lancinating, and at times agonizing pains radiating from the breast all over the affected side. As the disease advances the skin becomes adherent, puckered on the surface, soon becomes discolored and after a time undergoes ulceration; the nipple becomes retracted, sometimes early, sometimes at a late period, sometimes not at all.

In the soft or encephaloid variety of carcinoma we have a growth whose life history is much more rapid; it runs a very swift course; it shows a disposition to skin adhesion, ulceration, early fungosities appear, systemic infection takes place, and in many cases a few months are sufficient to destroy the life of its unfortunate possessor. The behavior of soft carcinoma of the breast is very like that of sarcoma, but they differ materially in their anatomic relations with the structures in which they are placed; soft carcinoma infiltrates the gland, and sarcoma, as a rule, is encapsulated, and in palpating the breast so diseased it is often possible to distinguish between the two conditions.

The sarcoma and soft carcinoma when situated in other portions of the body than the breast, differs little in its clinical behavior, with the exception, perhaps, of the subperiosteal forms of sarcoma as found in the long bones. I have in mind a woman age 28, who had a subperiosteal sarcoma of the lower end of the femur, whose lower extremity I removed at the hip joint shortly after diagnosis became certain; there was at the time no appearance of any lymphatic involvement in any of the tributary channels. She made a rapid convalescence from the amputation. Two months later I removed all of the muscular covering of the os innominatum on the amputated side, which was the seat of extensive infiltration, and about three months later she died of hemiplegia, presumably from metastasis to the brain.

In another case of periosteal sarcoma of the ulna, an amputation at the elbow joint was followed in about five months by a paraplegia, which was brought about by a new focus of the disease in the brachial enlargement of the cord, and which rapidly became so extensive that it destroyed the laminæ of the lower cervical and upper dorsal vertebræ, and a tumor the size of the fist developed upon the dorsal aspect of the spine in that situation.

In a third case of sarcoma of the lower third of the femur in a child 14 years of age, amputation at the hip joint was made in May; she died in September of metastatic deposits in the left upper jaw in the diplöic structure of the calvareum and probably within the skull. These three sad cases demonstrate the atrocious virulence of this form of malignant disease.

It seems a cruel distortion of the munificent plan of the Almighty, when this disease finds its victims from among those of the human family least able by age or vitality to withstand it. Such, nevertheless, is frequently seen.

I have recently been very much interested in the recital of the clinical history of two cases of rapidly growing sarcoma of the kidney in very young children, reported by Dr. Robert Abbe, of New York. In his first case the tumor had attained to the weight of two and one-fourth pounds when the child had attained its second year of life. In the second case, it had reached seven and one-half pounds and the child was but one year and two months of age. A year ago this past winter, I removed a similar tumor from a child of 5, and the tumor weighed nearly nine pounds. My result, I am unhappy to say, was not as successful as Dr. Abbe's.

Malignant disease of the adult kidney is often impossible to determine, because of the deep situation of the organ and the uncertainty of its clinical manifestation. The microscopic clinician for years has been assiduously in pursuit of that *ignis fatuus*, the

cancer cell, in the human urine, with the view of demonstrating the contamination of that fluid by the presence of a neoplasm along the track through which it travels in its exit from the body. The perfected modern cystoscope has done much to aid us in arriving at definite conclusions as to the part of the genito-urinary tract involved, by eliminating the bladder and urethra from being responsible for the physical characteristics of the abnormal secretion. I believe the majority of all thinking students of surgical pathology are as enthusiastically imbued with the idea that *the* specific microbe will soon be revealed to us, as was the historical Micawber that something would turn up to *his* advantage.

Prof. Stockton, of the University of Buffalo, in a clinical lecture delivered in 1892, laid great stress on the diminution of urea in cases of abdominal carcinoma. He says: "I have seen it in cancerous disease of the kidneys, pancreas, liver, mesenteric glands, omentum, colon and other organs. The diminution of urea also holds good to a certain extent in reference to cancerous disease of other parts of the body, but it is especially important as a sign in cancer of the abdominal organs." Gastric and intestinal carcinoma are not to be positively diagnosed without a palpable tumor, and oftentimes only by ocular demonstration after opening the abdominal cavity. Until the later stages the clinical history is entirely subjective. The absence of free hydrochloric acid in the gastric juice is considered strong presumptive evidence of cancer in this organ.

THE NECESSITY OF EARLY SURGICAL INTERFERENCE IN MALIGNANT GROWTHS.

Read in the Section on Surgery and Anatomy, at the Forty-fifth Annual Meeting of the American Medical Association, held in San Francisco, June 5-8, 1894.

BY R. A. McLEAN, M.D.

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The fact of malignancy having been established in a suspicious growth, the question of its complete removal demands the immediate attention of the surgeon. Regarded from a purely practical standpoint, there can be no doubt of the superiority of extirpation by the knife over all other procedures, yet all candid surgeons will admit that many instances of recurrence have been met with after operations, which seemed at the time to be extensive enough to include all the diseased tissues. This tendency to recurrence after removal of malignant growths by operation, has influenced the laity, and not a small part of the profession, to delay radical treatment until the case has become hopeless.

It is the purpose of this paper briefly to point out the causes of failure of operative treatment, and to indicate, in a general way, the means by which a large proportion of cases of malignant disease may be permanently cured.

First in importance as a cause of failure of operative treatment in the majority of cases, is the large development of the growth when the surgeon is first consulted. In the carcinomata the surrounding tissues and neighboring lymphatics have already become deeply infiltrated; in the sarcomata, metastasis to distant parts has already taken place.

In not a few cases, ulceration has occurred; and to the exhausting effects of the discharges is added the presence of septicemia. Only disaster can result from interference in such cases; and should the patient survive an attempt at extirpation he will certainly succumb later to recurrence. The mistake is frequently made by the medical man first consulted at the comparatively early stage of the disease, in not insisting upon radical treatment. It is usually the family physician who is first called upon to examine and prescribe for the suspicious growth. Upon him rests the grave responsibility in all such cases of deciding the question of probable malignancy. The temporizing policy usually pursued allows the disease to develop until operative treatment is inadmissible. The physician who is first consulted in a case of tumor or ulcer should promptly apply the usual tests to settle the question of malignancy. A broad consideration of the clinical features of the case will usually suffice to exclude the various non-malignant tumors and ulcers. In the majority of suspected cases the only element of doubt that need enter into consideration is the difficulty, in certain cases, of differentiating between malignancy, tuberculosis and syphilis. To reduce the question of doubt to still more narrow limits, it is only important to differentiate between malignancy and syphilis. A four weeks' course of mercury with arsenic and iodid of potassium will be a sufficient test. The question of tuberculosis is not important as governing the treatment, for extirpation is the most satisfactory method of dealing with all such tubercular manifestations as could cause suspicion of malignancy. A careful study of a suspected case for one month should be ample time to eliminate all doubt as to the proper course of treatment. The patient should be urged to undergo a radical operation without delay. If this course were followed, instead of the policy of delay, the surgeon could show statistics in which failure would be as uncommon as success has been heretofore. It is probable that cancer is increasing in frequency. It is to the family physician that the patient first goes for advice, and he should be alive to the importance of early recognition of malignancy in suspicious ulcerations and tumors. One cause of delay and loss of valuable time is the attempt to label the suspected growth with its pathologic title. Malignancy being probable, it should make no difference in treatment whether the case be one of scirrhus, or epithelial cancer, or one of the various forms of sarcoma. The surgeon has before him merely the question of extirpation of a growth which, if left to itself, will certainly destroy life.

In the early stage of malignant growths a relatively small portion only of the region or organ affected need be removed. The general health has not yet been affected and the patient rapidly recovers from a comparatively slight operation.

It should, therefore, be the first duty of the surgeon to insist upon early operation. Unfortunately, however, it is not until the growth has attained considerable proportions that the patient presents himself for operative treatment, and the surgeon is confronted with the task of removing the disease without sacrificing the life of the patient. It is probably the experience of most surgeons that cases of malignant disease do not apply for operation until the growth has involved a large part of the part or organ first attacked, and usually the neighboring lymphatics are extensively affected. In such cases it is unwise to attempt extirpation.

The following remarks are to be regarded as applying only to external malignant growths.

An early operation may be defined as one undertaken before any considerable extent of the part or organ originally attacked has been invaded. In carcinoma the lymphatics have not yet become affected, or only those in the immediate vicinity of the growth. The general health has not suffered. In sarcomata, no symptoms indicating metastasis have yet appeared.

It is in such cases that the surgeon may operate with a certainty of eradicating the disease. We now come to the most difficult part of the problem. How shall we decide in each case how far to carry the knife beyond the evidently diseased district? Instead of attempting to remove as little of the surrounding tissue as possible, it should be the rule to remove as much of the neighboring parts as can be done with safety, and with due regard for preservation of appearance and function. The direction and extent of the incisions will depend upon the course and proximity of the lymph vessels and glands, all of which should be removed with the overlying skin together with all of the connective tissue in which they are embedded.

The surgeon will never have cause to regret extensive abscission, not only of the tissues evidently diseased, but also of such parts as lie in the path of extension.

The experienced touch, carefully and deliberately practiced about the vicinity of the growth, with due consideration of the direction of the lymph vessels leading from it to the nearest lymphatic glands, will enable the surgeon to plan his incisions so that they will fall altogether beyond the probable limits of the infiltration.

After the growth has been removed and the vessels secured, the surface of the wound and its vicinity should be systematically palpated in order to detect any outlying indurated tissue or diseased lymph gland. This must be done with the utmost thoroughness, and the touch can be materially assisted by the use of a powerful hand lens. Infiltrated lymph vessels will by this expedient be detected which would not be evident to the touch.

In dealing with malignancy occurring in the vicinity of the bones of the skull, as much of the entire thickness of the bone should be removed as has been affected by the erosion. This should also be done if the overlying periosteum be infiltrated.

In carcinoma of the tongue or lower lip, the inferior maxilla should be removed in part with the growth, if the extension of the disease has caused erosion of the bone itself, or infiltration of the periosteum.

In dealing with sarcoma of the extremities, amputation should be the invariable rule. In these cases the conservative surgeon will advise operation only in recent examples, and before the occurrence of metastasis has placed the patient beyond the probability of cure. The amputation should be done through the continuity of the bone upon the proximal side of the articulation next above the growth. By this method alone can there be certainty of including all diseased tissue.

As an example of the advantages of a thorough removal of all neighboring tissue in carcinoma, I venture to present the following case:

Joel Simpson, 33 years of age, entered the City and County Hospital in January, 1883, with an extensive ulcerating epithelioma of the entire lower lip and the greater part of the right half of the upper lip and right cheek. The surrounding tissues were greatly thickened and infiltrated, and the lymph glands and both sides of the neck were enlarged. His general health was good. He stated that a small lump appeared first upon the right side of the lower lip about eight months before, caused, he thought, by smoking a clay pipe. The outer surface of the body of the inferior maxilla was eroded and the incisor teeth were loose. It was decided to extirpate the diseased mass including the body of the lower jaw.

Both external carotids and superior thyroids were first ligated. The growth was then circumscribed by an incision, beginning on the left side near the angle of the mouth, through the lower lip down the left side of the neck in an oblique direction to the larynx, where it was joined by a second incision beginning near the median line of the upper lip on the right side, and carried in a curved direction upward and outward through the right cheek and then downward and inward along the neck to the larynx.

The body of the lower jaw was then sawn through on each side near the angle, and the entire mass, including the submaxillary glands and enlarged lymph glands, were dissected from the inferior surface of the tongue, the pharynx and larynx. A few outlying enlarged glands were then removed. The surface of the wound seemed to be perfectly free from disease, but it was thought best to defer any attempt to close it by a plastic operation. In order to lessen the suppurating surface remaining, the edges of the mucous membrane and skin were brought together by sutures where the incisions passed through the lips and cheeks. The remaining wound was dressed with borated vaselin spread on lint, over which was applied an ample absorbent dressing.

The patient lost but little blood during the operation. In six weeks the wound had almost completely cicatrized. A plastic operation was then done to remedy the deformity, and difficulty in swallowing and speaking, caused by the protrusion of the tongue and absence of the lower lip and right side of the cheek. After dissecting off the cicatricial tissue from the edges of the cheeks and surface of the original wound, the tongue was freed from its adhesions anteriorly. A flap of skin and connective tissue was then lifted from the right side of the base of the neck and shoulder, turned upon its pedicle and approximated to the raw surface below the line of the mouth. The upper margin of the flap served the purpose of the lower lip, and its extremity was attached by sutures to the edge of the original incision in the left side of the neck.

In about four weeks the flap had united, when its pedicle was severed and adjusted to the freshened edges of the incision in the right side of the cheek and neck.

In conclusion, the following propositions may be offered:

1. All cases of suspected malignant growths should be treated surgically in the early stages of their development according to the rules of procedure above outlined.

2. Excision should be done in all cases of malignant growths, however extensive, in which the general health has not been seriously impaired, or extensive lymphatic involvement or metastasis have not occurred.

3. Operation should be refused in cases of recurrent or primary malignancy, in which the general health is so much impaired as to render an extensive operation a serious risk to life; in all cases of extensive ulceration and infiltration of lymph vessels and glands; and in all cases of sarcoma in which there is a probability of metastasis having already occurred.

THE VALUE OF CAUSTICS IN THE TREATMENT OF MALIGNANT DISEASES.

Read in the Section on Surgery and Anatomy at the Forty-fifth Annual Meeting of the American Medical Association held at San Francisco. June 5–8, 1894.

BY JOHN PARMENTER, M.D.
BUFFALO N.Y.

The advocates of caustics in the treatment of malignant growths have made many claims regarding the method of action and the results to be attained from the employment of the same. Prominent among the advantages claimed for caustics is the one that after their use, recurrence of the malignant growth is less frequent. An assertion like the above is easy to make, but difficult to prove. It is equally difficult to disprove, and correct conclusions can only be made by careful and logical interpretation of the statistics of a large and well observed number of cases. Apropos of this, space permits only the remark that the general consensus of opinion among surgeons to-day is to the effect that caustics give no more exemption from recurrence than does the knife.

Another claim is to the effect that the value of caustics is due to a selective action, whereby only malignant tissue is destroyed by the agent employed. This erroneous idea naturally arose from the fact that caustics destroy malignant sooner than healthy tissue, the latter having more resistance than the former, and hence the appearance of selective action. Such a caustic would be ideal, and when it is found, perhaps the question of the treatment of malignant disease will be forever solved. That we have no such drug or combination of drugs, experience constantly reminds us, and therefore this claim must be declared unfounded.

Still another virtue attributed to caustics is their power to reduce enlarged lymphatics adjacent to the seat of disease. That this result is attained sooner and more completely than after extirpation with the knife, of the disease causing them, is certainly not the case. It, however, often happens that the removal of a slough, due to the application of some caustic, is followed by a decrease in the size, tenderness and other signs of inflammation of the adjacent lymph glands. This, however, occurs very commonly where no caustic has been employed and is probably due to the fact that better drainage results from the removal of the slough, and hence the secretions no longer pent up, cease to infect the glands so actively.

The value of caustics, then, is not to be found along the lines advanced by their advocates, but must be sought for in other directions. The less we know about the method of action of an agent, the more carefully must we observe the various phases of the action itself if we would learn to use properly and safely such agent, and experience has taught us that the value of caustics lies in a combination of two conditions, viz, the use of a proper caustic, and its intelligent application in suitable cases. What is a proper caustic, and which are suitable cases? A proper caustic is one which effects complete destruction and removal of the diseased tissue. Many substances classed as escharotics—such as silver nitrate, carbolic acid, zinc sulphate, and the like—are not sufficiently caustic and should not be used. They only serve to irritate the diseased tissue, stimulate the lymphatics and disseminate the infection, thus making a bad matter worse. So when caustics are used, they should be those whose action is both rapid and thorough. Among these are the actual cautery, sulphuric acid, Vienna paste, Bougard's paste and zinc chlorid.

The actual cautery is a clean speedy agent for the destruction of malignant tissue, but it has seemed to me, in the few cases in which it was used, that there was quicker recurrence than was the case after using, say, Bougard's or Vienna paste.

Sulphuric acid is an active escharotic, but exceedingly painful and but little used now for this reason.

The alkalin caustics are among our most efficient agents and in some form or another are very commonly employed. The same is true of zinc chlorid in its various combinations. This agent is the principal ingredient of Bougard's formula, which according to Lewis (*Medical Record*, Feb. 13, 1892), "is by all odds the best (escharotic) we have at present." Its composition is as follows:

Wheat flour	60 grams.
Starch	60 "
Arsenic	1 "
Cinnabar	5 "
Sal ammonia	5 "
Corrosive sublimate	0.50 centigrams.
Sol. of chlorid of zinc at 52	245 grams.

In its preparation, Lewis suggests that each of the first six substances be separately reduced to a fine powder, then mixed in a mortar (glass or china) and upon the whole is poured the solution of zinc chlorid. The mixture is rapidly stirred to prevent the formation of lumps. A paste results, of which a thick layer is spread upon cotton and left in contact with the diseased tissue for twenty-four hours (caustic potash having been first applied to remove the outer layers of the diseased tissue and thus bring the caustic into quicker and closer contact with the remaining parts). After this time, warm poultices are applied to bring away the slough. This requires from three to nine days, according to the case. When the slough has separated, the wound may be dressed with some stimulating antiseptic ointment.

The space at my command does not permit me to describe the various other caustics and their method of application, so I have given a few details regarding Bougard's paste as fairly typical of the whole class of escharotics.

Whatever escharotic is used, common sense must be exercised in applying it. It must be proportionate in power to the necessities of the case; it must not be applied over too great an extent of surface at one time, one to two square inches being usually enough for a single application; it must be applied to all justly suspicious tissue, and the pain caused by it mitigated in all cases so far as possible. Especially is this latter important in persons enfeebled by age or disease, to whom loss of sleep and appetite are a serious matter. In short, the value of caustics depends in no small measure upon the intelligent way in which they are used and here, as elsewhere, the abuse of these agents leads to negative or disastrous consequences.

And now regarding the question, Which are suitable cases? In speaking of the proper kind of caustic the remark was made that it should possess the property of effecting complete destruction and removal of diseased tissue. It is equally important for us to select such cases as, from their anatomic situation, freedom from general infection, or infection of adjacent lymph glands, make it possible for an efficient caustic to exert its full influence. Without taking

the time and space to specify the cases which would naturally be excluded by such selection, we may say in general that malignant disease affecting bone, tissues intimately adherent to important structures (large vessels, etc.,) internal organs, or glands like the thyroid, are not suitable for treatment by caustics, viewed either from the standpoint of theory or of experience.

What of malignant disease of the breast, cervix and corpus uteri, tongue, tonsil, eyelids, rectum, or of the genital organs, and other similar and common sites of cancer? Experience again teaches us the futility and even positive danger of employing escharotics in the great majority of such cases. Now and then a caustic has cured a cancer of the breast or of some other part of the body, where the course of the disease is usually rapidly fatal; but this is most exceptional. Vastly more often their use results in increased suffering for the patient and an aggravation of the disease. This narrows the field down to cancer of the skin, the lip and the external ear. In other words, cancer usually limited in extent and easily accessible (two very advantageous conditions for the application of caustic). Lewis puts these cases in a distinct class, claiming that if taken early 95 per cent. should be cured, and in this statement the majority of surgeons will probably concur. When the time comes that surgeons shall have learned to properly select their cases, the statistics of caustic treatment will unquestionably show a decided and encouraging improvement. To-day it is to be feared that many surgeons have obtained indifferent results, due to obvious causes, such as late diagnosis, inefficient cauterization, poor technique and the like. This should change with time. Improvement in every way should follow. New agents more potent and of wider applicability may be found and used. Finally, even the long-awaited specific, in caustic form, may come to rid mankind of this terrible scourge.

The foregoing remarks seem to justify the following conclusions:

1. The value of caustics in the treatment of malignant disease depends upon the use of proper caustics and their intelligent application in suitable cases.

2. A proper caustic is one which completely destroys and removes the malignant tissue.

3. Mild caustics are inefficient and dangerous, and therefore to be avoided.

4. Bougard's paste is the most generally useful escharotic.

5. Proper technique in application accentuates the value of caustics.

6. The suitable cases are those which have a limited extent and are easily accessible, or in other words, cancer of the skin, lip and external ear, in their incipient stages.

7. The prognosis should be most excellent, cure resulting in the vast majority of cases when treatment is early and thorough.

Washington State Board of Examiners.—Dr. E. Van Zandt, of New Whatcom; Dr. Wm. W. Misner, of Tacoma; and Dr. John E. Bingham, of Walla Walla, have recently been appointed on the Washington State Board of Medical Examiners.

ON THE USE OF CAUSTICS IN MALIGNANT DISEASE.

Read in the Section on Surgery and Anatomy at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5–8, 1894.

BY L. DUNCAN BULKLEY, A.M., M.D.
NEW YORK.

As is well known, the treatment of malignant disease by caustics has been practiced very largely by those who are known as "empirics and quacks," much to the discredit of the medical profession and often to the injury of patients. But that there is somewhat of a foundation for their use in the success which may often attend them is certain, and it behooves the profession to correctly understand and profit by the experience which has been gained in this direction.

That there is a foundation in science for this method of treatment, there can be no doubt to any one who has studied the subject and who has had experience in the same. On the other hand, that harm may be done by their injudicious use is also equally evident. It will be our object to consider very briefly the indications for the use of caustics in malignant disease, the method of their employment, and the cautions to be observed in regard to the same.

To appreciate rightly their value, some consideration must be had in regard to the nature of the disease which it is sought to remove. This has been very largely considered by those who have preceded me in this discussion, and I will not enter into the pathology or etiology of malignant disease, but will only briefly state a few propositions.

The success of the treatment must entirely depend upon the localization of the disease. If the malignant elements are so situated that they can be absolutely and thoroughly destroyed, even to the very deepest ramifications, there is no reason why the caustic which reaches to every part of the disease and destroys its life may not succeed in eradicating the same; consequently, it is in the earlier stages of malignant disease that caustics find their value; and to be of successful employment they must be so used that the destruction shall be absolute and complete. It is needless to say that when the adjoining glands have become at all affected, and when metastasis has occurred to other organs, it is worse than useless to attempt the destruction of the local trouble alone by caustics or other means. Caustics are therefore largely applicable during the formative period, and when one can fairly judge of the exact extent of the morbid process. A very large share of the reputation or celebrity which has come to certain cancer quacks is derived from results obtained under such conditions; for it is very common for patients, when the diagnosis of epithelioma or local cancer has been made, to go at once to them, from fear of the knife, and a thorough application of the caustic made by them will often prove completely successful; and undoubtedly also, as I have personally known to be the case, many other conditions are brought to them which are not cancer, which are easily removed and thus add to their reputation.

I will speak first in regard to the treatment of early epithelioma, especially on exposed regions and particularly on the face. As is well known, these often begin as very trivial affairs, from a mole or wart, or sebaceous concretion, which has been pricked or irritated until a scab forms, and then, the slight

ulceration, having failed to heal, takes on epitheliomatous degeneration.

In the early stages of the disease, what is known as Marsden's paste will often prove a most valuable application, and one which can be successfully applied, if the rules in regard to its use are carefully carried out. This paste is composed of arsenious acid and powdered gum acacia. I generally keep the two ingredients separate and mix them at the time of application. A small portion of each is taken, in about equal parts by weight, or fully twice as much of the powdered gum by measure, and thoroughly mixed in a saucer; a drop or two of water is then added, and they are rubbed together until a thick tenacious paste is made. This is then carefully laid over the affected area to the depth, perhaps, of an eighth of an inch in thickness, after having carefully removed any adherent crusts. Before the paste dries, a little absorbent cotton is gently pressed upon it, the edges being tucked in so that the application covers the area occupied by the diseased surface. The layer of cotton should be very thin, perhaps also an eighth of an inch in thickness when gently pressed down. Ordinarily, I do not care to make such an application over a space exceeding one inch in diameter either way. But others have used it safely over several square inches at a time.

After a few minutes the paste will harden, and no dressing is required over the cotton until later; at first there is not much pain but within a few hours there is a drawing sensation, and the parts begin to feel uncomfortable; some hours later a severe burning pain sets in which may prevent sleep, the first night. About twelve hours after the application of the paste, a flaxseed poultice is applied, quite warm, the flaxseed being enclosed in a small bag with its mouth open, so that the poultice comes directly over the cotton, without any intervening substance between. It is well to cover the poultice with oiled silk, in order to keep in the heat and moisture. It may be changed every two or three hours.

When the poultices are changed, care should be exercised not to disturb the original cotton, the idea being that by means of the moisture of the poultices the cotton absorbs the arsenic beneath it, and there is a prolonged, gently acting influence of the drug over the part for some days.

In a short period, within a day or two after the application of the poultices, the affected part has become quite swollen, and a distinct border of demarkation can be seen in the form of a slight yellow line which soon breaks down, forming a furrow aronnd the diseased tissue. The time occupied for the complete formation and separation of the slough varies greatly in different cases according to the extent or depth of the epithelioma. In superficial growths it may separate in a week, but where the disease is of some depth the slough will sometimes adhere for two or three weeks. It is well not to interfere too much with the process of destruction, but to let the suppuration completely detach the dead portion from the surrounding tissue; but when it adheres too long any shreds may be clipped off with the scissors. It is understood that the poultices are to be continued for some days, or for a week or two. The wound heals comparatively rapidly after the separation of the slough; I do not have it washed or cleansed in any way.

If enough of the arsenic paste has been laid upon it, and the cotton allowed to adhere, a single application will generally be sufficient to eradicate most of the smaller epitheliomata; but if there should be signs of a portion of the disease left at any point, a second or even a third application of the paste may be necessary. Sometimes after the slough has separated, the wound will heal very kindly and quickly under the use of a mild zinc ointment; but I think the best results have been obtained when the poultices are continued until complete cicatrization had taken place.

If the arsenic paste has been applied strong enough there is really no danger of poisoning from the drug, for it so thoroughly destroys everything before it that absorption can not take place; the only danger lies in using it with too light a hand. There may be considerable pain during the first twenty-four hours after the application of the poultice and thus necessitate the use of opiates; but again the pain is often very slight. The cicatrix resulting from the healing with this treatment is often very small and supple. In many cases in which I have employed it, a single application has proved entirely successful, and there has been no return of the disease.

Thus far I have spoken only of the treatment of rather small and early phases of epithelioma; but this method of destruction may also be employed over larger areas than have been mentioned, which may be taken piecemeal if necessary.

Larger and deeper malignant growths have also been successfully removed by many, but the difficulties attending this method of treatment are often quite great. Cancer of the breast is constantly attacked both by empirics and by many in the regular profession, by the deeply acting caustics, but the pain attending this procedure is often very excessive.

Chlorid of zinc will eat its way through any amount of tissue and is relatively harmless in regard to any toxic effects. When once used this should be pressed on fearlessly, by one application after another, until the base of the tumor is reached and all is destroyed.

A valuable paste of chlorid of zinc is now used a good deal, under the name of Bougard's paste, composed as follows:

℞ Farinæ tritici (wheat flour)
Amyli aa ℥i
Acid. arsenios. pulv. grs. viij
Hydrarg. sulph. rub ʒii
Ammon, mur ʒii
Hydrarg. bichlor. corros. grs. iv
Zinci chlorid. cryst ℥i
Aquæ fervid ℥iss
M.

This is spread directly upon the surface, or thickly on a bit of linen, and laid on, and left on for twenty-four hours or more. The application causes considerable pain. After removal of the paste the parts are treated by a simple ointment or water dressing, the slough separates, and if there is still some hard tissue the application should be repeated.

Caustic potash is also another destructive agent of great value in many cases, but is more apt to be followed by unpleasant cicatrization. With these three caustics; arsenic, chlorid of zinc and caustic potash, I believe that all can be accomplished which is possible with such means in malignant growths.

A few words may be added in regard to what should not be done in the treatment of this class of affections:

It is useless and worse than useless to attempt their destruction or removal by any mild means, for any

caustic agent which fails of utter destruction and removal of diseased tissue will certainly contribute to its growth. A most earnest protest should be raised against the practice, far too common, of touching malignant growths with "nitrate of silver." This is a very superficially acting caustic, and is utterly incapable of producing any great destruction. It coagulates the albuminous substances in the tissue, and thus produces a bar against its further penetration. Multitudes of cases of epithelioma which in their beginning were very slight and relatively unimportant, have been goaded on, by repeated burnings with the "nitrate of silver stick," until they are even past all surgical relief. Nor should any of the caustics be employed except such as will thoroughly penetrate and destroy the mass.

Pyrogallic acid is often spoken of as a most valuable remedy in epithelioma, but its action is quite superficial and seldom will serve alone to eradicate the disease. It is, however, a very valuable adjunct after curetting, and seems to have some elective affinity for epithelial structures. In many instances I thoroughly scrape out small epitheliomata with a very small and fine curette, searching out even the smaller ramifications of the same, and then after the bleeding has been stopped by pressure, I fill the cavity with powdered pyrogallic acid, cover with cotton and allow the surface to heal, not disturbing the dressing. At the expiration of a week the dressing may be removed, and perfect cicatrization will be found. The resulting scar is often a little blackened by the pyrogallic acid, but the stain will pass off in a few weeks.

A few words may be added in conclusion in regard to the relative value of caustics and other measures in the treatment of malignant growths.

The aim in all treatment is to go entirely outside of every possible extension of the disease. It has been well shown that malignant growths extend along lymphatic channels, even to some distance beyond what appears to be the seat of the disease. Excision will undoubtedly eradicate, and that permanently, a large share of malignant growths. But far too often after excision they recur again in the site of the cicatrix. This has resulted simply from not removing all outlying processes of disease, and herein lies the danger from the knife.

If the operation is not radical enough to include every possible line or group of degenerated cells, the caustic will to a very large degree follow out these lines or channels, and by producing inflammation around, as Robinson[1] has shown, destroy their vitality. Another favorable feature in regard to the employment of caustics is that the destruction of tissue and skin cicatrization is much less than would be requisite in producing the same effect by the knife. It is really surprising what a relatively small scar may result from the destruction by complete cauterization of even a large mass of disease.

On the other hand, I by no means advocate the use of caustics to the exclusion of operative surgery, for in many instances the latter is preferable. In the instance of epithelioma of the lip, unless it is very superficial and small, I almost always advocate a surgical removal. About the eye-lids the knife will often give better results, and avoid danger to the contents of the orbit which might arise from misuse of the caustic. Within the cavity of the mouth, caustics are almost impossible of application. I am not myself at all inclined to use caustics in cancer of the breast, unless the lesion is superficial and relatively small. Localized sarcomata may often be removed advantageously by a caustic, but in a large share of instances it can not compete with the knife. In cancer of the internal organs, caustic treatment is entirely out of the question.

It will be seen, therefore, from what has been said, that I by no means seek to elevate the use of caustics in malignant growths above their true value; but I assert that their proper use has been neglected too much by the regular profession, for in many cases they have proved an adequate and desirable means of removing the trouble. They may often be employed satisfactorily in cases which, while suitable for the knife, can not be thus treated owing to the objections of the patient.

[1] International Journal of Surgery, July, 1892.

THE RADICAL CURE OF MALIGNANT TUMORS BY OPERATION.

Read In the Section on Surgery and Anatomy at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5–8, 1894.

BY J. H. WYTHE, M.D., L.L.D.

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By the phrase, malignant tumor, both the profession and the laity distinguish any new growth which has a direct tendency to destroy life. Malignancy is shown by the rapid invasion of adjoining structures, the enlargement of neighboring lymph glands in which the same kind of tumor is soon produced, and by the formation of similar structures in distant organs from the transfer of morbid germs through the lymphatics and blood vessels. In one or all of these ways, a virulent morbid growth will be manifested, according to the time it has existed and the activity of its growth.

Innocent tumors may recur, as well as malignant ones, if they are insufficiently removed by the surgeon, but they are subject to operation, not on account of their destructive virulence, but for the relief of pain, inconvenience or disfigurement. Operations for the removal of malignant tumors may also be useful as palliative, when all expectation of cure has vanished.

Since Virchow, in 1863, established the classification of tumors according to their minute structure, their study has been greatly simplified, yet the terms benign and malignant, survivors of the old clinical method of study, are used as convenient expressions of the tendencies of new growths. The anatomic arrangement of tumors was the direct consequence of the announcement by Müller, in 1838, of the law which is the foundation of all our knowledge of new growths, viz: "That the tissue of which a tumor is composed has its type in the tissues of the animal body, either in the adult or embryonic condition." Since this law has been fully confirmed by microscopic observation, no one dreams of looking for a specific cancer cell.

The term, malignant, is now usually restricted to the sarcomata or carcinomata, the first originating in the embryonic connective tissue cell, and the other, according to the generally accepted views of Waldmeyer, beginning in the more fully formed epithelial cell. In each form, the cells have a tendency to run wild, and, instead of producing an

orderly normal structure, greatly multiply themselves and accumulate in masses. These masses project and infiltrate into neighboring parts, whose nutrition becomes impaired and whose mutual pressure leads to ulceration and degeneration. Then comes absorption and transfer of germ cells to distant parts, when all hope of cure must be abandoned.

The cure by removal of malignant tumors depends on the fact that first they are of local origin. If they can be removed at an early stage of growth, together with all the neighboring cells which have a morbid tendency, they may never recur. Perseverance in removal after successive recurrences in the same place has also been greatly rewarded. Paget refers to cases where the tendency to recur was exhausted after many successive operations. Such patients had unusual intelligence and courage, with perfect reliance upon their surgeon, and deserved success.

My own observation of cures effected by the removal of malignant tumors has been limited to cases occurring in private practice, yet is sufficient to establish a favorable judgment. In such operations, two general principles have been influential: 1, to operate early, or as soon as the new growth showed signs of activity or irritation; 2, to remove with the tumor, a large amount of neighboring tissue, especially if the tissue had similar minute structure to that in which the neoplasm began. Thus, in several cases of epithelioma of the lip, I have not trusted to the curette or cautery, but have excised the growth with considerable tissue on each side of it. In no case did the disease return. In one instance, where the cancerous growth had spread from the lip to the gums and alveolar process, the lower jaw was exsected and a new lip made by a plastic operation. Four years afterwards, the man died of delirium tremens with no sign of recurrence of the malignant growth.

In malignant tumors of the breast, I invariably remove the entire gland, as well as any affected glands in the axilla. Of eight cases, but two have recurred. One of these was a scirrhus cancer, whose removal was succeeded after some months by carcinoma of the liver. The other was a large sarcomatous tumor followed a year after removal by osteosarcoma of the thigh. After amputation it recurred again in the stump, with fatal result.

In February, 1891, I reported in the *Pacific Medical Journal*, a new method of hysterectomy by enucleating the inner and middle layers of the uterine wall. This operation commended itself to me on histologic grounds as a safe, easy and effective way of thoroughly removing an epithelial growth of the uterine cervix. Neither the peritoneum, or the uterine or ovarian arteries are disturbed by this method, but the new growth, together with the entire follicular layer in which such growths begin, and the muscular layer adjoining, are entirely removed. This is a more thorough operation than the ablation of a cone of tissue around the morbid neoplasm, as advised by some writers. In the *Medical News* of Feb. 10, 1894, Prof. Reyburn, of Washington, D. C., describes an operation somewhat similar, but in his case the entire uterus was stripped from the peritoneal layer. I leave a portion of the outer muscular layer, which contracts so as to prevent hemorrhage. Prof. Reyburn's case was perfectly successful, but he suggests that in a younger woman the ovarian arteries might require ligation. This would be quite unnecessary in my method, as sufficient uterine tissue is left to avoid opening the peritoneal cavity.

I have operated in this way upon three cases of epithelioma and one of sarcoma, confirmed by both clinical and microscopic examination, and with no recurrence. One of the patients has been under observation for six years, and as she had passed the menopause before the operation, the remnant of the uterus has atrophied to a mere nodule. In the other cases the menstrual function continues as aforetime.

This method of hysterectomy (for so it may really be termed) may be available in other gynecologic conditions, but it is referred to here as affording a practical and easy way of effecting a radical cure in a large class of malignant new growths if undertaken early, but which, if left long to themselves, or treated only by palliatives, are among the most distressing of maladies.

THE VALUE OF INOCULATIONS WITH SEPTIC OR TOXIC AGENTS IN THE TREATMENT OF MALIGNANT NEOPLASMS.

Read in the Section on Surgery and Anatomy, at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5–8, 1894.

BY JOHN A. WYETH, M.D.

NEW YORK.

My first experience with the action of toxic or septic agents upon malignant neoplasms was in 1884. J. W. Phillips, an innkeeper of Gainesville, Texas, at that time (May 20, 1884) 33 years of age, was directed to me by Dr. Conson, his home physician. Four months before he had noticed a small lump in the wall of the abdomen on the right side, about four inches above Poupart's ligament, just where he had been struck some weeks previously by the end of a billiard cue. The tumor grew rapidly and enlarged in all directions, but was not painful. In the last few weeks he lost flesh considerably. History of specific urethritis ten years ago and sores on penis six years ago, but no symptoms of constitutional syphilitic infection followed. He had always been a vigorous and healthy subject.

When he came under my care the tumor in the wall of the abdomen was about four by six inches in measurement, and seemed deeply attached or glued to the muscles of the belly. Under anesthesia I found it impossible to make a thorough extirpation of the mass without sacrificing so much of the abdominal wall that the patient would have had an enormous ventral hernia and been incapacitated from any business.

I removed a large section from the tumor and packed the wound thus made.

The specimen was studied carefully under the microscope by Prof. Wm. H. Welsh, now of Johns Hopkins University; by Dr. Wm. L. Wardwell, a pupil of Conheim, and an excellent pathologist, and by myself. Each of us agreed that the tumor was a sarcoma, confirming the diagnosis which had been made from the history and gross appearance of the neoplasm.

I had read in a German journal, about that time, of three cases of sarcoma reported as cured by injections into the substance of the tumor of arsenious acid, and advised my patient to permit me to try it on him, which was done. I injected a small quantity every day for about ten days into various parts of the growth. The injections were quite painful and established a very severe degree of inflammation and suppuration, to such an extent that the patient begged the discontinuance of the treatment and it was abandoned. By this time his condition was very bad. I had no hope of his recovery. He was carried to Virginia, his native State, where for several weeks the process of suppuration continued, gradually ceasing until finally the tumor disappeared.

It is now ten years since he was treated, and there has been no recurrence of the growth. He is in excellent physical condition and I think he may be considered as cured.

The caustic action of the arsenic could not account

for the destruction of the tumor, for not more than one-twentieth of the mass was reached by the injections. The suppuration which ensued filled the inflamed area with shoals of streptococci and other septic products, and these destroyed the elements of the sarcoma.

There was no erysipelas in this case up to the time he left me, and I do not think the cocci of Fehleisen had anything to do with the cure. It was a positive case of sarcoma cured by the action of septic or toxic agents, the ordinary products of inflammation.

Shortly after this there occurred another remarkable case in the wards of Mt. Sinai Hospital:

A young girl was admitted on account of a sarcoma of the leg, for which an amputation was performed on the middle of the thigh. Several months later the growth recurred in the stump and Dr. Gerster removed the remaining portion of the extremity at the hip joint. A second recurrence took place in the line of amputation at the hip, and presented as it developed an extensive cauliflower-like mass, dirty, foul, granulating, and from which bleeding occurred at intervals. This patient was abandoned to die, but was accidentally inoculated with erysipelas in the stump. Large sloughing masses were cast off, the wound finally healed, all traces of the sarcoma disappeared, and she is now, more than five years after the attack of erysipelas, living and healthy with no sign of the terrible malady from which she so narrowly escaped, excepting the loss of the extremity.

A third case of large lympho-sarcoma of the neck in a man about 60 years of age in my service at Mt. Sinai Hospital in 1891, was accidentally inoculated with erysipelas, but perished in three days from the onslaught of the disease. When attacked he was in low condition, and died before any noticeable changes had occurred in the new formation.

The following case has been under my care since August, 1893:

J. J. L., 37 years of age, lawyer, of Pennsylvania, with excellent family and personal history. Two and one-half years ago a filled molar tooth in the right upper jaw began to ache, and the gum to swell. The nerve was killed by his dentist and this stopped the pain, but the swelling persisted and the tooth was extracted. Later the antrum was opened, and in August, 1893, I opened freely into this cavity and curetted it with Volkmann's spoon.

The presence of sarcoma of the upper jaw of this side was suspected, and Professor T. Mitchell Prudden, of New York, confirmed this diagnosis by the microscope.

Hoping to spare the patient the mutilation which the surgical removal of his jaw would cause, on Jan. 31, 1893, I inoculated him with the toxic products of erysipelas cultures. Under the influence of these injections the temperature would rise from 1 to 4 degrees (and on one occasion to 104 degrees F. within three hours of the injection), and then gradually decline to the normal. The pulse never went beyond 90. By February 16 the ptomaines secured by filtration of Fehleisen's coccus ceased to produce any impression and the pure serum drawn by aspiration from an erysipelatous bleb was inserted under the skin, but without producing erysipelas or a temperature above the normal. This was repeated on three occasions in one week with a similar result. A plug of cotton saturated with erysipelas serum introduced into the antrum also failed to give the patient erysipelas.

On February 21 pure cultures of Fehleisen's coccus of erysipelas caused a red blush in the skin on the leg, the point of injection, and this spread on the body into a well marked erysipelas lasting for several days. As no impression had been made upon the sarcomatous jaw, the treatment was discontinued, and two weeks later I removed the upper jaw, pterygoid process of the sphenoid, and the floor of the orbit. The patient recovered.

The limitations of this paper will not permit me to give minute details of cases. Suffice it to say that the literature of surgery, especially within the last five years, contains a number of cases which prove that septic inflammation, and particularly the sepsis of erysipelas, has a remarkable curative effect upon sarcoma.

In the application of these agents the observations already made show that pure erysipelas produces the most desirable curative effect, but that sarcomata will disappear as a result of inoculation with non-erysipelatous septic products.

As erysipelas is not without danger and since several cases of death are on record following the injection of the pure cultures of Fehleisen's coccus of erysipelas, even when these do not produce typical erysipelas, it is advisable at first to try thoroughly the injections of the sterile toxic products.

Dr. Wm. B. Coley, of New York, and Dr. Alexander Lambert, of the Laboratory of the College of Physicians and Surgeons, have obtained a perfectly sterile liquid by cultivating cocci of erysipelas in bouillon for three weeks, and then filtering. No heat is employed in this process. This fluid with the occasional addition of a certain quantity of the *bacillus prodigiosus*, I have employed in several recent cases.

Upon carcinoma the influence of erysipelas or of the toxic products is not so appreciable. That the growth of cancer is retarded and in some instances the neoplasm disappears under the influence of these agents, there is no doubt, but in my limited experience, and in the cases reported so far, these happy results are rare.

In 1893 an elderly gentleman consulted me in regard to a small epithelioma developed from a congenital mole or wart on the face, immediately over the right zygoma. A few days later he accidentally acquired erysipelas in the ulcer, which spread over an area of several inches, and was arrested by scarifying the skin just outside the limit of redness. The epithelial ulcer disappeared entirely with the erysipelas, but returned eight weeks later.

Dr. Wm. B. Coley has collected a series of nineteen cases of carcinoma in which eight, or 42 per cent., were well from one to seven years after the attack of erysipelas. In twenty cases of carcinoma three were permanently cured. Professor Spronck, of Utrecht, reports experiments on twenty-five inoperable neoplasms, eight sarcomata and twelve carcinomata. He employed a product made by "heating liquid bouillon cultures to 100 degrees Centigrade after adding 5 per cent. glycerin, then evaporating to one-tenth the volume and finally filtering through porcelain."

The results following the injection of this liquid were not so satisfactory as those reported by Coley, who obtains the toxic product without heating, while in Spronck's cases retardation was noticed and marked diminution in one or two instances, in no case was there complete disappearance of the neoplasm. In six recent cases of sarcoma reported by Coley, one entirely disappeared and had not returned in four months; another tumor of the pelvis and abdominal wall was reduced in six months from a diameter of seven inches to a small mass not over two inches in diameter. In four cases no well marked improvement was noticed.

Conclusions: Sarcoma may be cured by septic infection. The sepsis of erysipelas exercises the most powerful curative influence. Infection from the streptococcus pyogenes aureus will, in my opinion, also cure sarcoma. The injection of the sterile products of Fehleisen's coccus will also cause these neoplasms to disappear.

These agents act through the blood. Thus erysipelas attacking a breaking down sarcoma of the back, caused this to disappear simultaneously with a simi-

lar growth in another portion of the body of the same patient not locally infected. It is probably better to inoculate in the mass and get the local action of the inflammatory process when this is possible.

The lower the order of the structure of the sarcoma the less likelihood of a successful result. Thus in tumors of a myxomatous character the prognosis is less favorable.

Epitheliomata may also be made to disappear or their growth retarded by septic infection.

Adenoid carcinomata are only slightly, if at all susceptible, to cure or retardation in growth by these agents.

American Medical Association.—Section on Surgery and Anatomy.

The Section was called to order June 5 at 2 P.M., by its chairman, Dr. John B. Roberts, of Philadelphia, Pa. In the absence of the Secretary, Dr. Floyd W. McRae, of Atlanta, Ga., Dr. Reginald H. Sayre, of New York, was appointed temporary Secretary.

The Chairman read his address, "Some Surgical Sins."

The next in order on the program was the reading of papers pertaining to the subject of malignant growths. In the absence of Dr. E. Laplace, of Philadelphia, his paper on "The Pathology of Malignant Growths" was read by title and referred to the Committee on Publication.

Dr. J. H. Wythe, of Oakland, Cal., read a paper on "The Radical Cure of Malignant Tumors by Operation."

"A Critique of the Sporozoan Theory of Malignant Neoplasms from a Micro-technical Standpoint," by Dr. A. P. Ohlmacher, of Cleveland, Ohio, was read by the Secretary in the absence of its author.

Papers on "The Clinical Recognition of Malignancy in Tumors," by Drs. C. A. Wheaton, St. Paul, Minn., and Henry W. Coe, Portland, Oregon, were read by title.

Dr. R. A. McLean, San Francisco, Cal., followed with a paper on "The Necessity of Early Surgical Interference in Malignant Tumors."

In the absence of its author, Dr. John Parmenter, Buffalo, N, Y., his paper on "The Value of Caustics in Malignant Growths" was read by Dr. H. O. Marcy, of Boston, Mass., and the Secretary did a like service for Dr. L. Duncan Bulkley, of New York, his paper being on the same subject.

Dr. John A. Wyeth, New York, being absent, his paper on "The Value of Inoculation with Septic or Toxic Agents in the Treatment of Malignant Neoplasms," was read by title.

The same course was taken with the paper of Dr. X. C. Scott, Cleveland, Ohio, and for the same reason, his paper being on "Non-Malignant Stenosis of the Pylorus and Duodenum."

Discussion.

The discussion on the foregoing group of papers was opened by Dr. H. O. Marcy, Boston, Mass., who said—Your presence in these large numbers shows the wisdom of the selection of this class of topics as a symposium for the day. It seems to me that hardly any subject could be brought up with greater profit for discussion than the accurate and proper understanding of what we might term the malignant growths by the common professional physician, as well as what shall be done with them by the surgeon.

As we are looking into it I take great pleasure in referring to the instructions, in this connection, of the late Dr. Bennett, of Edinburgh who, so far as I know, was the first to declare that malignant growths were 1, local; 2, constitutional. As I look around me I suppose the majority of those I see were taught the contrary—that malignancy was a disease of the body and had its local expression, and consequently it mattered not how we cared for it, it would be sure to come back. Thanks to Dr. Bennett, as I believe, the profession is indebted to the great progress which has been made in this respect, and it is now accepted as the general consensus of surgical opinion, on both sides of the Atlantic that malignant disease is 1, local; 2, constitutional. Now, if this be true, it seems to us that we can have no two opinions regarding its early treatment. Dr. McLean was extremely fortunate in reading his paper and stating the views with such emphasis as he did in reference to the early diagnosis of malignant disease by the general practitioner, and he should then be equally competent and careful as to what should be done with the same. I am glad to feel that in a very large class of cases the general practitioner may help the surgeon because if he does his early detecting, as has been suggested to-day, you need not demand to be very extreme and need not demand that higher class of skill which belongs to the specialist in this direction, and would give further emphasis to the earnest work of the general practitioner upon whom we must all depend much for the early knowledge of this class of diseases. The question has been discussed with real interest by two of the writers as to what it is and how it is disseminated, and it becomes of equal interest to us all. I can not help believing that it is disseminated in large measure, whatever it is, through the lymphatic system, and hence the importance of our understanding, as has been already pointed out by one of the writers, the relationship of the local growth and the lymphatic system.

One word further; some of us have made careful preparations for attempting experiments that we might determine something in contribution to this subject, and there is one paper that was read that is of real vital interest to myself. In my early studies I had no difficulty in differentiating a certain growth, a growth not alone to be detected in microscopic knowlege, but that could be detected in bacteriology; as to its reproduction in animals, and I feel very sure I should not have been sorry if I had been made a committee of one to make the experiment upon criminals, for I can not help feeling that there is not so much difference between animals and the human race, so far as malignant growth is concerned. However, that is one suggested problem that has not been given to the profession to solve. But in its solution by local attack, shall we use the caustics? The paper which I had the honor of reading, the paper of Dr. Bulkley, an authority whom you all recognize in this country as of primary type, so far as disease of this kind is concerned, I can not believe that you will fail to accept. At the most the argument for this has been for limited conditions; disease of the ear, of the lip, those superficial, of the skin. May we not equally well and with a great deal better results effect those local operations by the use of the knife, carefully eliminating the use of so much of the tissue as Dr. McLean showed you that he had done, that we may be quite certain that the surroundings are removed in such a way as to make it far more intelligently corrected, more certainly effective than by any application of caustic, no matter how wisely made? What does the caustic do? Both the writers have told you that in many instances they are utter failures. You and I have seen it over and over again—no matter if you grant that they are carefully and thoughtfully and scientifically applied—we have seen utter failures in the control of this disease; and why should we subject the patient to this painful suffering? Why should we make an open wound subject to further infection? Why should we attack that growth on the superficial tissues when any permanent good results are so uncertain and it causes so

much suffering, when it is so easy with the knife, and we may expect permanent results almost without failure, with the aseptic measures which are at our disposal, and leave our patient practically cured the moment he or she shall leave the table? And if this is true, the plea for caustics is one that should be relegated, and will be, only to the men who do not thoroughly understand the subject, and such men I am sure you will agree with me have no right to practice upon this class of surgical patients, with the dangerous means of sure delay and sure death. (Applause).

DR. GEORGE F. SHIELS, San Francisco, Cal.—In the paper read by Dr. McLean he narrowed down the differential diagnosis, leaving aside tuberculosis, to syphilis and malignancy, and in reference to it spoke of the method of differentiation by treatment. Now we all know perfectly well that the differentiation between syphilitic growth and granulum, and of malignant growth of epitheliomas especially, may be made in a large majority of cases; but I want to call attention to a particular kind of condition which exists at times, and which makes this means of differential diagnosis impossible. Sometimes there exists gumma which do not undergo dissolution in the face of treatment by any of our known remedies. Large doses of iodid of potassium have been found to fail utterly in getting rid of a gummatous growth. Combined with mercury it has failed and even with arsenic it has failed in getting rid of real gummatous growth. I have seen such growths occurring in the tongue. Now, as we all know, in diseases of the tongue you sometimes have a tumor with enlargement of the submaxillary gland and where you have a great difficulty in making a differential diagnosis. In some of these cases you might give iodid of potassium in large doses and still fail utterly in getting a differentiation. You may have had a series of points brought to your attention which make you think or suspect that that condition is gummatous, and yet in spite of your iodid of potassium it does not appear. In other words there is a particular form of gumma, which is almost a simple primary type and without danger to life, and yet if you take this method of differential diagnosis described by Dr. McLean as your guide you might possibly cut out a man's tongue, when you perhaps could have saved it by other means. I do not believe much in throwing in any new method of treatment here, but I will give you a case. You have a case of ulcerating tumor of the tongue and enlargement of the glands. It seems to grow a little larger; you give all these medicines; you fail to make it go away; you have reason to suspect that it is a gumma—I have seen such a case, and have used different decoctions, Zithen's decoction—I don't care what decoction—what I want to point out is this: That there is a condition in post-syphilitic gummatous growths which does not allow of immediate cure by the use of iodid of potassium, and that one should give a very careful consideration, especially to tumor of the tongue of syphilitic history before he proceeds to remove the tongue.

I had intended to make some remarks concerning this question of caustics, which ought to have been entitled, the lack of value of caustics in malignant growth, but Dr. Marcy has covered that subject pretty thoroughly. One thing I would like to say is, that whenever you apply a caustic to a part, no matter how slight or how strong that caustic may be, with the hope of curing a malignant disease you are applying it to a tissue which is undergoing rapid cellular change, you change the cellular growth and are liable to make a non-malignant growth a very malignant one.

DR. E. GRISWOLD, Pennsylvania—Dr. McLean has remarked a fact in regard to the necessity of excision, and I think his remarks are very correct, but there are conditions—we find cases in which it would seem that they ought to admit of a little variation. I have a case in mind. A patient comes to me with a tumor upon the breast, which is open, with the axillæ enlarged, and the patient seemingly can not live more than a year. She came to me five years ago last March and said: "Doctor, I have a lump on my breast and have come to you to get it cured, and if it can not be cured in any other way I will have it taken out." I looked at it and was obliged to tell her that she could not be cured at all, in any way. Well, couldn't anything be done for her? Yes, very likely your life may be prolonged by an operation, but a cure is impossible; your system is wholly involved—and, by the way, she was almost going to bed; her pulse was accelerated, she was emaciated and her appetite largely gone. I said: "If you choose to have the operation done I will do it." She thought it over three or four days and then sent for me. I performed the operation, took out a very large mass, the whole breast, and took out so much of the tissue that it was impossible to bring the wound together in any ordinary way. I put in wire sutures and made a slight incision in the skin at one point so as to make the cut surfaces come together, took out all the axillary glands, and after six weeks the cuts are completely healed except at this point where there was so much tension on account of the silver wires—and, by the way, the silver wires cut more than an inch before they were taken out. It all healed in a short time—the operation was done antiseptically—except at that one point. That woman is alive yet, and that operation was done five years ago. Now, that operation was optional. She had it done because I said it would prolong her life; nothing more was promised, nothing more was expected. She can't live a great while longer, but she has lived two or three years longer than she would have lived had no operation been done. I have had similar cases done by their wish after the patient had been told what could be expected and what could not be expected.

With reference to caustics, I have had a great many patients who had epithelioma mostly on the face, and sometimes on the hand and on the lip, and so forth, who would not submit to the knife—the knife was always my method if I could get the patient to submit to it, but rather than let them go on to destruction I would adopt any other method which I thought was practicable—and I got hold some years ago of a method of applying caustic, I scarcely know how, but better in my opinion than anything that has been presented to us to-day, and the treatment by it is done at one seance; one sitting does the work. It has to be done, however, in a peculiar and careful manner. The caustic made of sulphate of zinc, dried so that the water of crystallization is all driven off by heat, till it bubbles up after the water of crystallization is driven off, and then powdered in a mortar promptly and quickly so that it shall not absorb water from the air; put it in a bottle and pour in enough pure sulphuric acid, chemically pure, so that when it stirs up, it will make a paste so thick that when you put a little stick or little glass rod in it, a good sized drop will adhere to that stick or glass rod, and not drop off. Have plenty of absorbent cotton or plaster, and apply that all over the surface. It is a little painful but in about ten minutes it destroys the tissue to the depth of about one-eighth of an inch. Then take the point of your penknife and scrape it off until it begins to bleed, to the quick; then apply it again, and after four or five applications I have to use my judgment as to whether I have got all the cells out or not. I believe I have never failed in perhaps fifteen to twenty operations in getting a complete success the first time, except once, and that was on the hand where I was afraid of injuring the tendon. While scraping it that way you get all the cancer cells out and destroy them completely; it may take from an hour or an

hour and a half to two hours, according to the size of the epithelioma. Then you use any simple ointment you may happen to have and the pain is all over and there is no further trouble.

Dr. Maclean, Mich.—I very much regret, indeed, that I was unavoidably detained and missed the principal part of this session, the more so that this is a subject which I think of the very utmost importance to the practicing physician and surgeon. There are one or two thoughts suggested to my mind in what I have heard since I came into the room that perhaps are worth presenting. In the first place, the question of diagnosis between benign and malignant tumors. A great deal of time and a great deal of genius and work have been devoted to this subject, and the profession has labored earnestly and honestly, early and late towards that point where we could be able to say, This tumor is malignant, and this tumor is simple and must be treated as a simple tumor. Of course the microscope and all the resources of histology and of chemistry, as well as those of the ordinary practice of surgery have been called to the aid of the practitioner in this matter. And after all I am afraid we must admit that we are far from having attained to a definite conclusion. Dr. Marcy referred to the teachings of Dr. Bennett, of Edinburgh, as to the local origin of cancer or malignant tumors. Now, I am perhaps the only man present who had the pleasure of listening to Dr. Bennett's teachings and arguments on that subject, and I remember also at the same time Prof. Symme was teaching on the same subject, and he had a very illustrative class of cases, namely the Highland shepherds, the men who spent a great part of their lives herding sheep in the Highlands, and the sole comfort of their days was their little clay pipe, which soon got broken down pretty nearly to the bowl, but it was all they had, and they had to use it. And the most common everyday cases that we met with in the Royal Infirmary in Edinburgh when I was a student there, was the Highland shepherd with his epithelioma of the lip. He smoked this little short clay pipe with the bowl close to the skin, and the epithelioma always appeared on the side of his mouth on which he carried his pipe. That seemed to be a very strong argument in favor of the origin of malignant disease from local irritation. If these cases came early enough and were excised clean and clear by the surgeon's knife and closed up, they healed within a few days, and we hardly ever saw the patient again; but if they were too late in coming, if the time had been allowed to pass on, and when the poor fellow arrived at the hospital he had enlarged glands under his chin or in the neck, no matter how carefully or how thoroughly the excision was made, a few months saw him back again with a great mass on his neck. There seemed to be a direct, straight, clear, undeniable history of malignant disease, commencing locally from local irritation and becoming gradually, general, constitutional, uncontrollable and fatal. But it is a curious fact that cases of tumors on the breast, cancers on the breast, tumors of various kinds come across our path every once in a while, where there seem to be all the characteristics of malignancy, and in which the result demonstrates that after all they were local, non-constitutional, treatable and curable, when other cases very similar, almost entirely impossible to draw the line between them, take an entirely different course. Now, then, what is the difference? What is the microscopic, physiologic, chemic condition which confers malignancy on one tumor and benignancy on another? In that direction I believe that sooner or later some great revolutionary discovery will occur by which we will be able to recognize the difference. I do not believe that at the present time, with any means we have at our disposal, we can speak with positive certainty as to the prognosis of a large class of tumors. Certainly we can not say what makes one tumor malignant and another benign.

Now, as to the treatment of tumors by caustic. I have always been taught and always believed that that is a system of treatment used before the days of exact knowledge, in the days when the surgeon was afraid to use the knife because he did not know what trouble he might produce, and that he might get beyond his depth. And it has always seemed to me to a very large extent an unscientific, cowardly, unsurgical method of treatment. I have always thought it myself and I have always believed it and at the same time I am ready to acknowledge that under certain circumstances, in certain cases, the treatment by caustics may be the best that we can use. The treatment just described by my learned friend, by the use of sulphate of zinc, which he says himself he accidentally stumbled across, I think, in fact I have no doubt of the absolute fact, was taught in a little different way by Sir James Simpson when I was a student in Edinburgh. Sulphate of zinc was prepared in the same way but used as a fine powder, and used for ulcerating, open malignant growths; and while it was temporarily painful it certainly did tend to stay the growth and prolong the patient's life. And besides that I believe that we did once in a while come across a little growth, or at least of a suspected character, a growth in which we had reason to believe that there may be a basis of malignancy, in which an operation with the knife is difficult and unsatisfactory, where it is so situated that you can hardly make a proper or satisfactory incision with the knife, and where by some such method as has just been described, by the use of caustic carefully applied, it can be got rid of very thoroughly, very rapidly and very efficiently; but my own impression is that that class is small. I think it would be unjust for us as surgical authors to lay down the doctrine that the treatment of cancerous growths by caustics is always unjustifiable. While I do believe that in a vast majority of cases it is abused and misused and improperly used, I believe that the larger number of men who use that form of treatment are men who do not know anything about what they are doing, further than that they have got hold of some kind of treatment, and they are going to relieve the patient and get what money they can from him. I think it cruel and unscientific treatment in a majority of cases, but it is like a great many medical and surgical applications. I do not think it is possible to lay down a hard and fast cast-iron law and say, You shall not use caustic, you shall always cut, or *vice versa*. I do not think we are in a position to do that at the present time. I believe in caustics. I believe in the doctrine of the local origin and local nature of malignant growth to a very great extent. Still there are exceptions. I was going to explain one single case, and then I have done:

A patient came to me with a tumor which involved all one side of the lower jaw. It had grown rapidly. It started in the submaxillary gland and involved the jaw. I removed more than half of the jaw, and the patient apparently recovered and was in good health for twelve years; went about his ordinary avocations and had no trouble. At the end of that time he returned to me, his jaw healed up; he had a wire plate and false teeth and the scar was hardly perceptible. No person could see that there was anything wrong with him at all, but away back behind his tonsil, the same side from which I had removed his jaw, there was a great malignant growth, a lump that it was impossible to cure. After twelve years of good health between the two tumors. Now I say it is very hard to reconcile such a case as that, and I can stand here and give you many such. I think it is hard to reconcile that with the theory of a simply local nature of malignant disease. The fact is in my opinion that we do not know just exactly what we do mean by ma-

lignancy. I believe that there is something more for us to learn in that direction; I am perfectly certain of it. I believe that there is something yet beyond the reach of the microscopic lens or the chemic test, but something which the rapid and magnificent progress of modern science, surgic, pathologic and anatomic, will clear up and we will be able to apply more effective and more satisfactory treatment to them.

DR. J. W. COPENOR, Iowa.—I do not wish to enter into any discussion nor to report any cases, but I do wish to do this; to give briefly my conclusion upon this subject from my observation and experience. I believe that these cases of cancer that have been cured were not malignant cancer I believe that we have to look beyond any local application or the knife for any permanent cure upon cancer. Further, that the cases that are supposed to have been prolonged to any great extent or possibly cured by the means that have been suggested were not malignant cancer, and the means had not been used prior to their treatment to ascertain definitely as to whether they were or were not, which can only be done, not by the naked eye, not by any observation, but by the microscope and if necessary, even a more critical examination than we could get from the microscope, and that is the only way we have of ascertaining definitely what we have. In 50 per cent. of the cases you will find that it is simply some other tumor aside from a malignant tumor. Then your local application, then your knives will be of some benefit. But if it be truly malignant then we have to look for something beyond all local treatment and the knife for a permanent cure, and I fear that it will be some time before we ascertain that.

DR. L. DUNCAN BULKLEY, New York—I am sorry I could not hear the discussion entirely, but I am glad it has taken the turn that it has, because no one feels more than I do its importance; there is no one who has thought more than I have of the danger of caustics as they are commonly applied. I believe in my paper I stated that many a case which would have proved a very simple affair has been urged on by caustics until it became malignant and beyond control of either the knife or caustics. I believe there is no one who more strongly than myself, in a large number of the cases that have come under my observation, urges instant operation. Many cases I have shown in clinics where there has been harm by the light application of silver, and as I mentioned in my paper in most cases I have advised against the use of it in any possible way for fear of tumor that I thought might be epithelioma. It should never be done. But in epithelioma of the face or the hand you certainly can get results with Marsden's arsenic paste Long before there is any danger of infection, I certainly should allow the paste to be applied in many a case in its early stages. But in many cases it is harmful, because the caustic has not been removed, because they have tinkered with it one way and another with irritating salve, and it has gone on until it has become too late for anybody to cure. In many of those cases you can get a better result than with surgery. As I stated in my paper, I believe the arsenic penetrates further than the surgeon will penetrate with his knife. I have had several cases operated on by surgeons—I do not operate myself—and I have repeatedly stood by and urged the surgeon to go further and he would decline to. I believe and I know that the arsenic follows down further than the surgeon will go. If you are going to cut out one of these things, go clear around it, beyond all possible penetration of that epithelioma, if you are willing to make a big scar—but upon the face and upon certain other localities you will not make a scar sufficient,—you will make the incision too small, and it will certainly come out on the outside as I have seen it time and time again. Sufficient paste put on rightly according to directions which are well recognized will penetrate further than the surgeon's knife. The scars from arsenic paste, used rightly—because every one has his own way of using these things, and he may not follow out all the details as another man would—the scar, I am sure, is preferable in a large number of instances to that left by operation. I have seen it leave a cicatrix that you can hardly see. The only point is to discover the proper paste, using it early and using it thoroughly, and I believe that you err greatly in supposing it, as some gentlemen have supposed it, below surgery.

DR. RANSOHOFF, Cincinnati—The cases of cancer that get well are cases of epithelioma, and some get well without treatment. Cases of epithelioma will sometimes run on ten or twelve years and finally get well. It has been stated by the gentleman from Iowa that cases of carcinoma never continue after this operation, and if I remember the words rightly, that we still have to proceed somewhere beyond the operation in order to effect a cure. Dr. McLean in his paper stated that when we see these cases of malignant disease appear early an operation, not very extensive, is possible, that it is justifiable—I do not remember his exact phraseology, but that is the impression that I obtained from his very admirable paper. I think in that remark he follows Bangs very largely in that particular, though Butlin as determined by his work, shows that it has been very largely corrected and destroyed by what he says concerning the treatment of malignancy by incomplete operation; in other words, by the mere removal of the tumor itself, leaving the parts overlying the tissues, leaving a part behind of the underlying tissue, and not investigating the axillary glands. We know very well that recently Dennis has made an admirable collection of cases from his hospital and private practice in which he had obtained a recovery in 15 to 25 per cent., which was a good deal higher than the recoveries obtained through the work of Gross. Now, say that all these cases were not cases of malignant disease, 15 to 25 per cent. of recoveries can hardly be within the limit of fact, because unless there had been a microscopic section of every tumor that had been removed in that way, in that case there could be no question at all as to the malignancy of the growth. Now, regarding the removal of the tumor, leaving the breast. It is not nearly so difficult to remove the tumor. Everybody knows that, but we know that such cases usually occur at a time of life with patients when the breasts are no longer so important, there is no longer very much physiologic need for that part of the anatomy. In the next place, to remove only the tumor leaves the integuments over it, and leaves frequently some important fascia, and it is here we have the secondary local developments of the case. One of the speakers suggested to be careful about palpating; one certainly can not do it in the axillary region through the integuments. Most of these cases happen with women with a fair or excessive development of adipose tissue, and you can not do this through the layers of much adipose tissue. For that reason, the disease being of the lymphatic glands, they ought to be opened invariably. It has been shown that not more than 2 per cent. of women die after the operation of amputation of the breast, simple amputation of the breast, and the mortality from opening and removing all the axillary glands is not excessive; the operation is not at all difficult. So I think that every woman who is unfortunate enough to be subjected to this operation ought to have not only the breasts removed, but the integuments over it. We do not have the large open wounds any more, because they can be skin-grafted at once, and the axillary region at the same time cleaned thoroughly. It is ordinarily in the axillary glands that the lymphatic disease produces its secondary consequences. From 15 to 17 per

cent. of the cases of carcinoma of the uterus have this result, because all of the glands involved are not removed, and the same is true of carcinoma of the rectum, which when it is thoroughly removed does not ordinarily produce metastasis. I did not hear Dr. Wyeth's views here upon this subject, but I feel quite certain that if Dr. Wyeth had read his paper upon the radical treatment of malignant disease, it would not have been upon the use of superficial applications with caustics, but upon the use of methods; that he would have told us something about a method like amputating at the thigh, that is to say, going up just as far as you can, and then the mortality will be diminished to a minimum. I did not hear the paper which was recently read before the Maryland State Medical Society by Halstead, of Johns Hopkins, but somebody stated that Halstead presented quite a large number of cases of malignant disease operations in which the mortality was not more than 6 per cent. But in these remarks I merely wanted to take exceptions to the remarks made by one of the speakers namely, that in cases of recoveries from malignant disease of this class they are in the nature of an Irish bull; they are not malignant diseases at all.

Dr. Jules Rosenstein, San Francisco—In the discussion about malignant tumors, I have missed a necessity which I think is of paramount importance, in knowing which tumors are malignant—we have been talking here mostly of cancers. Cancer to my mind does not convey a very distinct histologic meaning. There are different kinds of malignant tumors, epithelioma, carcinoma; there are sarcomas, and among the sarcomas there are again different degrees of malignancy, the round-celled sarcoma and the spindle-celled sarcoma; we all know that the round-celled sarcoma is a much more malignant growth than the spindle-celled sarcoma; also that certain kinds are of local origin—in fact, originate from some local irritation. We have the epithelioma of the chimney sweepers in some parts of Germany, caused by sliding down the long chimneys and coming in contact with the soot, and which is removed without the danger of recurrence; the parafine epithelioma of the workers in parafine factories, which attacks only certain parts of the body that come in contact with certain material used in the manufacture of parafine. In fact, we have a theory which can be fortified by a great number of facts that constant irritation, be it by whatever cause, can stimulate the growth of the epithelial cells; that they become malignant. We know that at different orifices of the body, orifices that are exposed to constant irritation by the passage of food or other material, the different passages of the stomach, rectum, the mouth, and even the cervix uteri—all these are liable to be the first or the original seat of certain kinds of carcinoma. To throw all this together without any etiologic differentiation, without saying, this kind of tumor is malignant, this kind of tumor is easily infecting the general system, while that one is growing slowly, I think is a scientific matter. The fact is, that kind of tumor, epithelioma, slow-growing epithelioma, can be treated by early operation, and if the lymphatic glands are not infected we have a certain moderate assurance of a permanent cure. We can certainly not guarantee that after a time, be it long or be it short, the lymphatic glands in the neighborhood of the tumor will be free from infection from the original point, and we will not have any secondary growth of the same kind of tumors. Indeed, as one of the talented speakers just now remarked, it is certainly dependent upon the nature of the tissues, upon the anatomic relations. Some parts that have no great connection with the lymphatic glands in their immediate neighborhood will form their growth slower; others are surrounded by a network of lymphatics that will certainly be apt to make the infection more general.

As to treatment with caustics, I believe that ought to be relegated to ancient history. We certainly can nots ay that our caustics shall do effective work, shall penetrate the lymphatic glands and channels and shall clear out all the infected ones, and leave the others perfectly sound and perfectly unaffected. We must rely on a very much extended operation to protect our patients, operations that can be done with safety now with the antiseptic treatment, and operations which ought to be done to protect them against infection, operations that go into all the possible channels of infection and thereby extirpate all that we can reach, and then trust that the infection has not gone any farther. That is all we can do; all we ought to do, but not any more than we ought to do. Anything that we do less is a crime against the patient. And I think the more extended the operation in early cases that come into our hands, the more benefit we will do the patients that are intrusted to our care.

Dr. Bishop, Pennsylvania—It seems to me that there is a belief on the part of this Section, and we ought to be decided in the expression of our opinions in regard to the question of the use or non-use of caustics; and I think that we owe it to our practitioners, and to our patients both, that we should be decided in the expression and assume the responsibility so that we shall be deterred, you might say, from the use of caustics. Certainly the tendency is to do more hurt than it is to do good. The percentage which would be relieved will certainly be less than the percentage relieved by operative measures, and it looks like a measure in which the practitioner either is afraid to assume the responsibility of an operation, or he is afraid that he will lose a patient, and he makes concessions to the patient and lets the patient select the operation instead of having the courage to select it himself. It is a cowardly act, it seems to me, and the man ought to assume the responsibility, and the Society ought to assume the responsibility, and give a decided expression. I think we would make no mistake by doing that, and we do make mistakes by leaving it an open question as to whether the one or the other should be used.

Dr. I. M. Quimby, Jersey City, N. J.—I think this differential diagnosis should have an important bearing. You take the case in which a local irritation has brought out or developed the disease, as by tobacco. These are the cases in which a different form of treatment frequently may be had. You take a case, on the other hand, where it seems to grow, a sort of imperceptible growth, without any definite or any positive local irritation there; I think you have something of a constitutional disturbance, and so you can not make your diagnosis more exact of all diseases. It has been laid down by some writers on tumors that they are all of local origin. I think that is a mistake. There are some that certainly are constitutional. You can not treat those with the same line or kind of treatment. I had a case of exuberant granulation that came to me—a burn after six or eight years' treatment with all sorts of mild caustics, burnt alum, and nitrate of silver; the local physician had used that for several years—the case came to me, and I found that I could do nothing with it and advised amputation. However, I sent him over to the hospital, thinking that Dr. Bulkley with his experience in a cancer hospital might say differently, but he thought nothing could be done but amputation. I simply mention this case to show the damage that may be done, a benign tumor, a non-malignant trouble, a simple burn that had been tortured into a malignant growth, and the man lost his arm. So we want to be right on the thing to be used, and use it thoroughly. I think the plan laid down by Washington Atlee several years ago is a good one, that all patients should be treated in a constitutional way, and if it is by the arsenical operation, for one or two or three months take the Powers' solution, which I have done

in several instances with marked success, and where there was no return. I operated upon a lady twenty-five years ago for a malignant growth on the lip. I treated her with mercury for a while, and then the potassium iodid, and then I put her on the treatment of the arsenical operation and kept her on that for three months. That was twenty-five years ago and the trouble has not returned, and I could give you a number of instances to illustrate what I think is the success of constitutional treatment after that operation, whatever it may be. As far as local treatment is concerned, I do not think we ought to be like machines to follow any one treatment, although I believe in the knife. It is the quickest, and I think it is the safest, especially with epithelioma of the lip. In flat cancers of the face perhaps paste may be important, but where you can amputate, excise, I think it is better, and the patients do not suffer so much. I have noticed in several instances where the patient has been treated with caustics his health seems affected from the constant irritation, and that does not occur with the knife. Therefore I give preference to the knife, and then constitutional treatment afterward.

The Chair appointed as a Nominating Committee, Drs. D. W. Graham, Chicago; H. M. Sherman, San Francisco; and D. Root, Connecticut; and as alternates on the Business Committee to supply vacancies, Drs. Joseph Ransohoff, Ohio; and R. H. Sayre, New York.

Adjourned.

SOCIETY PROCEEDINGS.

Colorado State Medical Society.

The twenty-fourth annual convention of the Colorado State Medical Society was held June 20, in Denver.

Dr. E. J. A. Rogers called the convention to order shortly after 10 o'clock. At that time there were present E. J. A. Rogers, S. A. Fisk, A. M. Bucknum, A. S. Lobingier, E. R. Axtell, V. P. Munn, W. F. McClelland, W. E. Wilson, J. N. Hail, John Chase, John N. Foster, J. W. Collins, Howell T. Pershing, I. B. Perkins, Jesse Hawes, Greeley; E. C. Rivers, Herbert Work, Pueblo; C. F. Shollenberger, J. W. Exline, A. Nickerson, T. M. Burns, J. Kelly, J. E. Waxham, D. E. Wetzel, George Cleary, C. P. Conroy, W. Weist, O. A. Pfeiffer, O. W. Mill, P. F. Gilder, Colorado Springs; A. J. Baker, P. D. Rothwell, W. J. Rothwell, C. K. Fleming, E. H. Fish, O. H. Simmons, Leadville; J. T. Beatty, Lupton; J. W. Collins, H. B. Whitney, J. N. Vroom, G. M. Black, E. H. Allison, F. D. Green, E. C. Rivers, E. M. Marbourg, Robert Levy, W. C. Bane, W. W. Bulette, Pueblo; R. F. Le Mond, E. J. Rothwell, Mrs. Exline and Mittie Bradner, J. C. Herrick, G. B. Packard, Una G. Roberts.

Dr. Hubert Work, of Pueblo, read the annual report, which showed healthy branches of the Society to be in existence in the principal towns of the State. Reports were also read from the Treasurer and the committees on publication, and medical societies.

The main business of the convention was then proceeded with. Papers on various diseases and their various methods of treatment were read, among them being these: "Operative Treatment of Granulated Lids," by John M. Foster, Denver; "Some Cases in Ophthalmic Practice," by F. D. Green, Pueblo; "Report of Two Cases of Removal of Cataract and of a Piece of Steel at the Same Operation," by E. C. Rivers, Denver; "A Report of Eleven Cases of Intubation of the Larynx in Denver, Colo., with Exhibition of a Lamp for the Sublimation of Calomel," by F. E. Waxham, Denver; "Dacryo-Cystitis and Its Complications," by E. M. Marbourg, Pueblo; "A Valuable Artificial Membrana Tympani," by Geo. Cleary, Denver; "The Treatment of Empyema of the Antrum of Highmore," by Robert Levy, Denver; "The Use of a Modified Nasal Trephine in Hypertrophic Rhinitis," by G. M. Black, Denver; "Ophthalmic Memoranda, by W. C. Bane, Denver; "Acute Otitis Media," by W. W. Bulette, Pueblo; "What a General Practitioner Should Know About Eye Troubles," by R. F. Le Mond, Denver; "Eczema Marginatum and Eczema Seborrhœicum," by D. E. Wetzel, Denver.

The afternoon session opened with a symposium on obstetric difficulties. Dr. Jesse Hawes, of Greeley, read an interesting paper on "Rigid Os," which was followed by Dr. W. S. Bagot, of Denver, with an able and argumentative paper on "Extra-uterine Pregnancy." Another carefully prepared and statistical paper was that by Dr. Herbert Work, of Pueblo, on "Maternal Impressions." The preponderance of opinion quoted by Dr. Work appeared to favor the theory that unusual mental or physical agitation of the mother during her term of pregnancy was almost certain to be transmitted to the child.

"Unusual Operative Procedures" was the title of an exceptionally practical paper by Dr. Neil McPhatter, of Denver. The woman and babe whose lives Dr. McPhatter saved were present at the session. Dr. McPhatter said: I believe the part assigned to me for discussion this afternoon is a consideration of the unusual methods or extraordinary measures that may legitimately be resorted to in difficult parturition, when the difficulties assume such proportions that the woman can not be delivered by any of the ordinary means. My sphere is limited to a still narrower margin than this, for I have been informed by the gentleman who so kindly invited me to participate in this discussion to endeavor to confine my remarks more particularly to that part of the obstetric art which calls for the use of cutting instruments, *i. e.*, when there exists such a disproportion between the natural passage and the size of the fetus as to render it absolutely impossible for the child to be delivered in the ordinary manner. Then we come upon a peculiarly interesting and tremendously responsible situation, for it is one in which the lives of mother and child are placed in imminent jeopardy, and one which calls for the highest and at the same time most evenly balanced judgment on the part of the attending physician. In the remarks to which I give expression I trust I shall approach the subject free from the thralldom of preconceived ideas, and unbiased in the advocacy of any one method of procedure only in so far as the merit of such a method demands.

Fortunately for mankind, more particularly for those who are obliged to bear the burdens and dangers of parturition, nature in her own inimitable ways and by ordinances that far surpass in beauty and perfection of design the imagination, is usually quite competent to fulfill this trying ordeal. Occasionally, however, the ordinances of nature are disregarded. Morbid influences in the pelvis of the mother or unnatural development on the part of the fetus may render it absolutely impossible for the woman to be delivered normally, and it is here that the cunning hand of the surgeon may be of the utmost importance to life. It is highly commendatory to the standing of the profession at the present time that the principles we advocate have been so beneficial to mankind. The method in vogue not many years ago of resorting to the operation of craniotomy with the appalling disasters that followed in its wake, forms one of the darkest pages in the history of obstetrics. When one contemplates the frequency with which this operation was resorted to in preference to others much less dangerous, it would seem that the spirit of scientific midwifery was long lulled to sleep and that nature had become emasculated. The operation of eviscerating the yet warm and quivering body of an innocent babe from its mother's womb should be reserved for very rare and exceptional cases, such as hydrocephalus, or where the child is already dead. Much more satisfactory and humane methods are the Cæsarean section and Porro's method of operating.

Porro's operation, unlike the majority of recent triumphs in surgery, is not one which has been resuscitated after having been performed and discarded many years before, but is of comparatively recent origin. The first successful case on record was performed in the year 1876 by Porro of Bavaria. It has since been performed a great number of times with comparatively good results. Heretofore, and even at the present time, this operation and the Cæsarean section had been indiscriminately advocated when the condition present called for one or the other method. I believe this to be a mistake. Whether the Cæsarean section can have any advantages over its recent rival rests wholly upon a question of morals. Certain it is that there are well defined conditions and complications in pregnancy when Porro's method is the only scientific course to pursue.

Each method may possess well-defined advantages over the other, and in estimating the relative values of Porro and Cæsarean sections a number of important conditions should be remembered. In all cases where pregnancy is complicated by tumors, such as fibroid of the uterus, ovarian, or dermoids, as was the condition in this case, hysterectomy is the preferable operation. Where labor has proceeded for a long time and the uterus becomes putrid, Porro's operation ought to be selected. In certain operations begun as Cæsarean sections, but which become complicated by difficulties in the detachment of the placenta, uncontrollable hemorrhage or complete atresia of the vagina, Porro's is the

operation indicated. These are some of the advantages that this operation possesses over the classical one. In straight, uncomplicated cases I doubt very much if the Cæsarean method is superior to the Porro. The advocates of the Cæsarean section maintain that because Porro's operation forever renders the woman sterile, the Cæsarean method has the advantage. This question again is one altogether of morals; but given a woman with a deformed pelvis and a contraction of its diameters, so that one or the other operation was absolutely demanded, and believe the fact that one would save her life equally as certain as the other, the one that would place her in such a condition that pregnancy could not again occur would be the preferable one. I look upon this point alone as a decided advantage of Porro over its rival. Such a proceeding would leave the life of the mother absolutely free so far as any future chances were concerned. I am well aware that this is at variance with the opinions of many able minds, but nevertheless it is one that I have long maintained, and is at least one of honesty.

There can exist no reason why this operation, if properly planned, carried out with as much care and precaution as other abdominal sections should not be almost entirely free from risk, as far as the lives of mother and child are concerned. It is to be regretted that in a great majority of instances the idea of the operation does not enter into the head of the physician until the patient becomes almost entirely exhausted from the reiterated efforts of the uterus to expel the fetus. An operation of this character above all others should be done opportunely and not left until the rough manipulations have exhausted the woman and materially reduced her chances. It can readily be understood why the mortality of this operation has remained so high, in view of the fact that it is usually done as a forlorn hope. On the 16th of last August I was called in consultation by Dr. E. J. Rothwell to see a patient who was eight months and a half pregnant.

History Given.—Woman had contracted pelvis, had previously borne twins weighing three and one-half pounds each. Last confinement craniotomy performed after repeated efforts of days; confined in bed for three months afterward. Upon examination I found conjugate diameter not over two inches. Cervix so high I could not detect it with my finger. I could, however, make out that the fetus was alive and that it was in fourth position. It was of large size, and we felt it was physically impossible to deliver the patient by the normal channel.

This we explained to her and her husband, and advised the removal of the child by abdominal incision as the method attended with the least risk. To this they willingly consented, and she was removed to my private hospital on Vine Street and was prepared for ovariotomy. We decided to operate several days before the expected time of labor. Thursday morning, August 23, she was put under the influence of anesthetic by Dr. Leavitt. The abdominal incision was made in the median line and was continued above the umbilicus. Bleeding points were caught up by pressure forceps and secured. The transversalis fascia was cut through to the extent of the abdominal wound. Before the incision into the uterus was begun, several warm flat sponges were placed between the uterus and the intestines, for the double purpose of keeping them from cooling and preventing fluid from escaping into the abdomen. The incision was vertical, beginning near the fundus, cutting toward the cervix about four inches. I went carefully through the whole extent of the incision, layer after layer, until I came to the membrane, which was intact. The uterine walls retracted, exposing the fetus as through tissue paper. I ruptured the membrane, and the uterus contracted, the child entered the world head first, crying lustily, and was turned over to one of the attending nurses. Here I was confronted by an unexpected complication of two tumors of the ovaries, and decided to remove them also, together with the uterus. As in hysterectomy for fibroid tumors of the uterus, experience has taught us that the extra-peritoneal method of fixation of the pedicle is one followed by the most favorable results. The simple method of converting the temporary elastic ligature into a permanent one is as good as any and saves time. The pedicle was now fixed in the lower part of the wound after all clots were removed from the Douglas cul-de-sac. In order to prevent the pedicle from retracting, a staple or two steel pins are passed through it, immediately above the constrictor. The peritoneum was then sutured separately. The deep sutures to close the abdominal wound were inserted subsequently. Stitches were inserted as in other abdominal sections and the wound dressed. The patient made a very satisfactory recovery. Her temperature remained normal for nearly two weeks. She now, as you may see, is enjoying the best of health.

At the close of the doctor's remarks and at his request the lady in question came up to the platform with her baby in her arms. As the President took the plump little fellow in his arms for a moment and held him up before the audience, the room resounded with hearty cheers for the youngster.

Dr. C. F. Shollenberger's paper on "Albuminuria" was discussed, the opening by Dr. Kate Lobingier, of Denver. The other papers which were discussed were: "Puerperal Fever, its Etiology, Pathology and Prevention," by T. A. Stodard, Pueblo; "Should Ergot be Used during Parturition and the Subsequent Involution Period?" by E. Stuver Rawlins, Wyoming; "Floating Kidney," by W. A. Campbell, Colorado Springs; "Cases of Floating Kidney," by W. B. Craig, Denver; "La Grippe During the Puerperal State," by T. M. Burns, Denver; "Nephrectomy, with Report of a Case and Demonstration of Specimen," by A. S. Lobingier, Denver.

The visiting members to the convention were entertained at a reception by the lady managers at St. Luke's Hospital. Afterward they went to Manhattan Beach in special cars and attended a performance tendered by Dr. J. M. Foster, of the Society.

Medical Society of the District of Columbia.

The Medical Society of the District of Columbia, June 21, continued the discussion of the prevalence of typhoid fever and a pure milk supply, so auspiciously commenced last week. The hot weather had a visible effect on the attendance. Though only a few were present the discussion, however, was earnest and interesting.

The meeting was called to order with Dr. S. C. Busey in the chair.

Dr. Robert Reyburn read a report in which he took exception to that portion of the committee's report in which they stated that cases of typhoid fever diminished as the city was more thoroughly sewered. He cited data to show that such was not the case, and claimed that while perhaps the increase in typhoid cases was very small, yet the sewerage system was increasing with great bounds, and this was an absolute proof of his claim. Dr. Reyburn then read a report of an investigation of certain alleys in the city. He referred to Cedar alley in particular. He spoke of improper water closets, and scored the health officer for his neglect of duty. In the course of his remarks Dr. Reyburn made mention of the pump at Sixth and O Streets, which was so universally condemned at the last meeting. Dr. Busey interrupted and said:

"That pump is closed."

"Indeed," said Dr. Reyburn; "since when?"

"Since last Wednesday night," said Dr. Busey, and the little sally was met with a laugh.

Dr. Benjamin C. Poole read an exhaustive report on the death rate from typhoid fever. He claimed that typhoid fever was not as prevalent as was supposed. He claimed that many deaths laid at the door of typhoid fever were due to malarial fever. He next attacked the committee's report on pumps. He declared that never had there been any authentic report of a case of typhoid fever resulting from well water. He called the report "untrue, illogical, and based on the misrepresentations and miscalculations of those who had made the investigation."

Dr. J. W. Chappell then said that he had gathered from what had been said that there was a very low percentage of deaths from typhoid fever. He objected to this, and said that he believed that it had increased, not because there was any real increase of typhoid, but because physicians had changed their diagnosis. He showed by figures that real typhoid fever, however, was on the decline. He said that in 1880 the death-rate was 107; in 1882, 141; in 1890, 122; and in 1892 it stopped at 98.

Dr. Chappell then went on to attack the belief that wells

were conducive to typhoid fever. He said his experience had not taught him that, and furthermore, he was a disciple of the theory that water filtered through the ground would be purified. He said that he believed that the wells in the city were no worse than in the country for this reason. He admitted that the ground in the city was more befouled than in the country, but claimed that the rule still held good.

Dr. C. G. Stone, of Brightwood, rose to antagonize the claim that an improved sewerage system checked typhoid fever. He said that in his district there was not a proper sewerage system. He added that there were not as many cases in his district as in the city. Despite this, he said, he wished to declare himself in favor of the sewage system now under consideration by Congress, and would do all he could to push the matter along.

Dr. G. L. Magruder thanked the Society for their almost unanimous indorsement of the report of the committee as reported to the Society. He stated that at the outset the work appeared to be easy, but as time wore on its laborious details became evident, and the report was the result of hours and days of hard labor. He felt confident that the report was correct.

It was in every detail as faithful as it was possible to make it. Therefore he asserted again that typhoid fever was on the increase, and again that to wells this increase was due. He complained bitterly of the way in which certain members of the Society had hounded the report as a sensational bugaboo. He said that these things were true, and that it was better that the Society were awake to the fact and prepared to combat the disease, rather than to shut their eyes and allow the alarming growth of disease to pass unnoticed in order to lull an unsuspecting public into a sense of false security. Therefore he asked for the indorsement of the recommendations made by the committee.

Dr. W. W. Johnston said that he wished to reply to Dr. Smart, who had asserted that water in rivers was particularly conducive to typhoid fever. He said:

"It is not a question for us to settle. Authorities have settled the matter for us, and it is an absolute certainty that polluted soil and well water are prime factors in producing typhoid fever.

"It is an undisputed fact that the *pro rata* of typhoid fever is on the increase. It may be a few more or a few less than last year. Nevertheless it is on the increase, and it is for us to rise and try to overcome the disease. Now let us go to work, drop all differences, adopt this report, and go to work with a will to stop this evil."

Dr. S. S. Adams moved that the committee's report be adopted. The motion was carried.

The Society then took up *seriatim* the report of the special committee relative to the matter of unlicensed physicians practicing in the District. At this point the reporters were excluded from the room.

Upon a motion made by Dr. Adams the meeting adjourned until fall.

Medical Editors Banqueted.

[From the San Francisco Examiner.]

The banquet of the American Medical Editors' Association, which is annually held, took place June 4, at the Palace Hotel. It was the first event of the extensive medical congresses and meetings which are to be held during the week. Last night the editor-physicians were the guests of R. E. Queen, of San Francisco. About ninety doctors and their guests, many of them famous throughout the world, lined the three beautifully decorated tables in the banquet hall.

After the first few courses had been disposed of, Dr. C. H. Hughes, President of the Editors' Association, introduced as toastmaster Dr. I. N. Love, of St. Louis, Chairman of the Committee of Arrangements. After all, doctors know as well as secularists how to enjoy a banquet, and the President of the Association lost no time in beginning the fun.

"I take pleasure," he said, "in presenting you a toastmaster early in the evening, while I can vouch for him. He is all right now, though I can't say how he will be at 12 o'clock. But I have examined his head and find him thoroughly normal at present."

Dr. Love rose and got even on his introducer at once, and then said the reason he appeared in a dress suit was because he had learned from experience to carry one in his pocket handkerchief when he went traveling. "Seven years ago," said Dr. Love, "the custom of holding these banquets was inaugurated at St. Louis. Long may it be perpetuated."

Dr. Hughes responded to the first toast, that of the Editors' Association. He greeted the assemblage as he had had the pleasure of doing last year in the Arlington Hotel in Washington. "We are going to see all the sights of Chinatown, Benicia Bay, the Midwinter Fair without the Plaisance, and last, but not least, San Francisco's warm-hearted and beautiful wives and daughters." He entered upon a eulogistic tribute to the value and importance of medical journals to the profession, and also to the outside world. "We help commerce itself," he said, "for we keep men in condition to get up and get a move on, and keep commerce lively."

In the absence of Dr. James F. Hibberd, President of the American Medical Association, who is eighty years old, ex-President Henry O. Marcy, of Boston, did the honors for the National Medical Association.

With the true gastronomic recklessness of physicians the banquetters plunged into sweetbread patties and all manner of indigestible dainties, and the speeches went on.

Dr. John Morris, one of the best known physicians of Baltimore and a great wag, told how he once met a seedy friend who asked for a loan. "I don't like to give you money upon the street," I replied, "but here is a ticket for a banquet—a $10 affair. You can get enough for a week." "Any speeches?" he asked. "Oh, yes; Chauncy Depew, McVeagh and others—fine speakers." "Oh, Lord," he said piteously, "I haven't eaten for three days, but keep the ticket; I would rather starve."

Dr. P. O. Hooper, of the American Medical Association, spoke, and was followed by John B. Hamilton, editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, the largest of its kind in the country.

Winslow Anderson was the first San Franciscan to speak. He responded to "Our Guests," and bade the editor-doctors a hearty welcome to the Golden State.

Dr. R. H. Plummer, Chairman of Committee of Arrangements, seconded Dr. Anderson's remarks of welcome in a few well chosen words.

Dr. Lane, as President of the Cooper Medical College, told of the fine old physician who had first planted the tree of medicine in California, and then Dr. Taylor, of San Francisco, the retired physician and present attorney, answered to a sentiment which was fittingly expressed in Shakespeare's words: "An honest man he is who hates the slime that sticks on filthy deeds." Dr. Taylor spoke of the affection he bore the medical profession and how he always felt identified with it, in spite of the twenty-one years he had been pursuing a different calling.

"Woman" came in for her share of adulation under the able handling of Dr. Lyman Beecher Todd, of Lexington, Ky., and "The Medical Purveyor, Handmaiden of the Physician," was responded to by Dr. A. L. Hummel, of Philadelphia. Dr. R. Beverly Cole responded eloquently to "The Old Guard." The banquet did not break up until a late hour.

Those invited were:

A. Wyeth Hamilton, L. C. Lane, R. H. Plummer, J. F. Hibberd, C. H. Hughes, R. E. Queen, I. N. Love, R. B. Cole, J. A. Wyeth, S. Parkinson, E. R. Taylor, Warren Olney, J. D. V. Middleton, W. W. Kerr, W. F. McNutt, J. A. McLean, W. R. Cluness, J. F. Morse, J. L. Frazier, G. W. Woods, T. W. Huntington, W. E. Briggs, Walter Lindley, J. H. Wythe, W. A. Briggs, W. P. Redington, H. Michaels, A. Mack, J. Rosenstein, Washington Ayer, Clinton Cushing, C. N. Ellinwood, R. L. Rigdon, A. Hartsuff, W. S. Thorne, J. O. Hirschielder, William T. Fonda, William Pinniger, J. C. Queen, L. B. Todd, B. L. Coleman, E. D. Fergusou, Justin Steer, S. Pollak, Robert Levy, P. O. Hooper, I. N. Quimby, F. C. Greene, A. C. Cotton, H. Brown, W. B. Rogers, ——Jerome, Donald Maclean, J. M. Duff, W. F. Jarvis, A. L. Smith, John Morris, S. Loving, G. W. Stoner, J. J. Mulheron, W. W. Imrie, George M. Gould, M. Shrody, Winslow Anderson, S. O. L. Potter, N. F. Essig, F. W. Sultan, B. T. Whitmore, M. M Walker, J. D. Griffith, W. R. Ballard, W. W. Watkins, C. G. Chaddock, George Wilkinson, F. P. Foster, A. L. Hammond, J. King, G. B. Sbattuck, E. W. Cushing, L. B. Edwards, W. F. Winn, H. A. Hare, E. Martin, A. W. Brayton, Theo. Potter, J. E. Minney, J. V. Shoemaker, H. Bert Ellis, J. C. Denise, J. B. Hamilton, F. L. Simon, A. L. Fulton, Frank Woodbury, W. H. Pancoast, J. G. Kirvan, F. S. Parson, J. E. Harper, E. Lanphear, E. S. Briggs A. J. Stone, F. D. Crothers, H. O. Marcy, W. Wyman, I. C. Scott, C. W. Smiley, Dr. Barnet, J. W. Keating, F. W. Mann, A. R. Baker, E. Walker, H. P. Newman, George Wilkinson, H. D. Holton, A. C. Bernays, E. H. Hughes, R. T. Morris, W. H. Evans, H. N. Moyer, L. A. Duhring, H. C. Coe, J. C. LeGrande, E. O. Shakespear, E. F. Ingals, E. Montgomery, P. H. Millard, A. Garcelon, W. B. Atkinson, J. W. Duff, J. S. Marshall, G. C. Stockton, L. D. Bulkley, H. McGuire.

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SATURDAY, JUNE 30, 1894.

SCHOOLS OF PRACTICE.

In the trial, still pending before a Circuit Court in one of our largest cities, of a petition for a writ of mandamus against a State Board of Health—which is also a medical examining and licensing body—to compel the Board to issue its certificate, authorizing the petitioner to practice medicine and surgery in the State, the plea is made in support of the petition that the Board is actuated, in its refusal to issue such certificate, by hostility to the school of practice of which the petitioner is an adherent; and, is moreover, dominated by members who are identified with colleges which are competitors and rivals of the college of which the petitioner is a graduate. It is not necessary, for the purpose of this article, to indicate more definitely the State Board which is thus attacked, nor to advertise more widely the institution which is seeking to pose as the victim of oppression and persecution. The suit, in itself, is referred to only as the occasion for pointing out some defects in the practical execution of legislative attempts to regulate the practice of medicine.

It too often happens that, as in the present instance, licensing and examining bodies embrace in their membership those intimately connected with teaching and graduating institutions. It is, perhaps, natural that this should be so; the appointing power, in casting about for *materiél* for such bodies, is very apt to be attracted to those who have already attained prominence in the profession as teachers and educators; and, other things being equal, the appointment of such prominent individuals seems, *prima facie*, to be fit and proper. But when it is considered that these gentlemen are called upon in the discharge of their duties as examiners and licensers, to sit in judgment, not only upon their own graduates, but upon the graduates of other and often rival schools, such appointments are seen to be eminently unfit and improper.

The logical tendency of all serious effort for a higher standard of qualification for the practice of medicine is toward the absolute divorcement of the teacher from the examiner and licenser—the devotion of the medical college to its legitimate function as an organization of instructional agencies, pure and simple; the creation of an examining and licensing body to judicially determine the results of that instruction. Obviously, the *personnel* of these two agencies may not be identical without the risk of lending color to such charges as those set up in the suit which is made a text for these comments.

Another and a much more readily cured defect in the current system of licensing and examining, is that which grows out of taking cognizance of "schools of practice." In this mandamus suit it is plausibly urged as a sufficient reason for the Court's interference that, while there is representation on this Board of the regular, the "homeopathic" and the "eclectic" schools, there is none of the particular school to which the petitioner belongs. With a court, still more with a jury, such a plea will undoubtedly have weight; and whatever of plausibility it may have is gratuitously furnished by the Board itself.

Unlike the laws in some States, the law creating this Board and defining its duties, etc., does not require it to take cognizance of any school of practice; but in its rules and regulations it is provided that if an applicant for license on examination "has special views of theory and practice of medicine or of therapeutics a special examination in such branches will be held." It is urged upon the Court in this case that there is no member of this Board qualified to examine the petitioner on the theory and practice and therapeutics of his school; that the members one and all, are prejudiced against his school and its practice, and that great injustice is thereby done him and those like-minded unto him in this respect.

Why have "special examinations" in these branches? Why have any examinations at all in theory and practice, materia medica or therapeutics?

If, upon examination, an applicant for the licens to practice, be found well grounded in anatomy, physiology, chemistry, pathology, surgery, obstetrics, gynecology and hygiene—the branches of medical science common to all schools—his qualifications for the practice of medicine have been sufficiently demonstrated; his views and theories on the etiology of disease and on the action of remedies may be safely eliminated from the examination.

Practice and therapeutics are expressly excluded from the examinations in many States—notably in Alabama, where the regulation of medical practice is, probably, more thoroughly systematized and with more benefit to the profession and to the public than in any other State of the Union. Where the law does not require otherwise, boards of examiners would do well to follow this example and thus re

move the pretext for future charges of "intolerance," "proscription" and similar terms addressed to the ears of the groundlings.

THE TERM NEUROSIS.

The uses made of the term "neurosis" in the medical literature of the present day strongly suggests a certain indefiniteness in the concept it conveys to the average medical writer on the necessity of a new definition. In the latest and most elaborate medical dictionaries we still find its principal signification given as "a functional nervous disease, without ascertainable structural lesion," though some, like Billings and Thomas, also allow it in one sense to cover all nervous disorders in general. If neurosis, however, is used in this sense, it can not at the same time be applied to any special class of these affections, as would seem to be usually the case. The neuroses are very commonly spoken of as a class apart, a special type of nervous disorders, and among them we find included not only hysteria (which is really a psychosis in the medical sense of the word) and neurasthenia, with their manifold phases, epilepsy, chorea, migraine, exophthalmic goitre, and other diseases of undetermined pathology, but also infectious diseases like tetanus, disorders with observed structural lesions like paralysis agitans, acromegaly, certain trophic affections, and even club feet and harelip and various other structural defects of degeneracy. The widest signification of the term can only include these last, in the sense that they are more or less the results of nervous defects, and this they share with every possible form of congenital or developmental malformation. Genius is said to be a neurosis; beauty and deformity might equally well be thus designated.

The fact seems to be that in the progress of pathologic research the old class of functional nervous disorders is dying out, or rather medical men are losing faith in it and they are becoming looser in their usage of the terms that belonged to it. The general and the special meanings of the word, neurosis, are used confusedly; when one is employed there is also a flavor or suspicion of the other, and the scientific definiteness of the term is sacrificed. This has been particularly noticeable in some recent papers, and it is not an advantage in any respect.

It is questionable whether a new definition of the word is desirable, and whether we have not yet a use for it in the special meaning it has hitherto held. It need not be, as some have claimed, merely an expression of discreditable ignorance, or a limbo for the results of inefficient diagnosis; there will always be some forms of disease of undetermined pathology, and there is no harm in grouping them under a common name and of using the same, if we only guard against the too common error of assuming that giving a name to a thing implies its full explanation. Neurasthenia, hysteria, and the more general term "neurosis" can still be used scientifically, and meet a want; what we need is more accuracy in their employment. The usage and not the vocabulary needs most to be reformed.

THE CLERGY AND THE MEDICAL PROFESSION; THE MEDICAL CODE A TONIC.

It has long been recognized that the best supporters—on paper—of quack medicines are the Protestant clergymen. No class of persons, except it be the conductors of the religious weeklies, concoct more false testimonials for belts and nostrums and anti-drink specifics than do the average clergymen. Why this is so, is sought to be explained by SIR JAMES CRICHTON-BROWNE, at the opening of the Sheffield Medical School.

"Quackery," says SIR JAMES, "is patronized in high places; it is supported not only by the dull and ignorant, but by the presumably educated and intelligent. It may flourish in our manufacturing centers, such as Sheffield, but the very hot-beds of it are our fashionable watering places and health resorts, and I am assured that, while our skilled artisans are least of all given to quackery, our learned clerics are most addicted to it. Well, I think our learned clerics should seriously reflect, that in giving countenance to the nostrums of the empire, they exhibit a credulity and superstition that must seriously impair their usefulness in their sacred calling. with all thoughtful men. Great may be the faith, but small must be the wisdom of the man who believes he derives benefit from a non-electric belt! What exegetical insight is possible in him who swallows patent pills? They should remember—these learned clerics—the commendation of the Bereans, and they should search the Scriptures, that is to say the newer scriptures of science and common sense, to see if these things be so."

But if this they fail to do, they must, as SIR JAMES shows, await a day of judgment according to the rule of right. His contention is that there is "above and beyond any special code of honor appertaining to the medical profession, the general code of ethics, to which that and all professions are amenable, and as regards that general code, I would say that medical practice is daily demonstrating to those engaged in it, its reasonableness and wisdom. To those who faithfully pursue it, medical practice affords an ethical training and discipline of the best kind; it opens a refuge from pessimism in the opportunities it gives for the relief of sorrow and suffering; it unveils, in the tender ministrations of the sick-room, some token of the angel as plainly as competition discloses vestiges of the tiger and the ape, and it fosters that wide sympathy that yields hope for the future of our

race. 'The man shall die,' said DAVID, 'not because he did this wrong, but 'because he had no pity'."

Concerning that branch of ethics that we call "our Code," DR. CRICHTON-BROWNE is free to admit that the majority of his colleagues are competent to pursue the path of rectitude without a printed guide-book, but for the weaker brethren, "a code of honor supplemental to the general ethical code is *an admirable tonic*." Let those who are strong, and need not a physician or a prescription, remember there are always the weak with us and the Code is their best tonic.

INTERNATIONAL MEDICAL MISSIONARY INSTITUTE, NEW YORK.

In New York city, a training school for indigent young men and women, desirous of fitting themselves for life in foreign lands, has been in operation about twelve years. It is conducted by DR. GEO. D. DOWKONTT at two houses on East Forty-fifth Street. The present accommodations suffice for students not in excess of twenty, whereas eight times that number are on the books as applicants for admission. The trustees, having obtained subscriptions amounting to $100,000, look forward to the construction of a new building with room for two hundred, or two hundred and fifty pupils. They will be ready to break ground as soon as there shall be $250,000 on their subscription list, and men of large means and practiced liberality have expressed their favorable opinions of the work in hand. The last annual report of the institution says:

"We believe we have found a solution of the problem of true missionary work in the establishment of a fully equipped medical missionary college. Our society is incorporated and has a board of eighteen managers of various denominations. The average annual income for the last six years has been about $10,000. In addition to training students born in this country, the society has had in training the natives of twenty foreign countries. We shall begin putting our plans into execution as soon as the site is obtained. For the completion of the necessary fund we look to the generosity of those interested in true missionary work."

SUBJECTS ON WHICH OPINION EVIDENCE IS INCOMPETENT.

Evidence in the nature of expert or opinion testimony, is not competent, and can not be received, the Supreme Court of Nebraska holds, in the case of the Atchison, Topeka & Santa Fe Railroad Company v. Lawler, decided May 2, 1894, upon a subject of inquiry which is of such a kind or character as to be within the knowledge of men of common education and experience, and to require no special skill, knowledge, or experience in considering or forming an opinion upon it, as the jury will be presumed, if all the facts are before them, to be competent to draw the inference and form the opinion from such facts.

SECTION REPRINTS.

Gentlemen desiring copies of section reprints of particular sections will please send their names to the JOURNAL at once, unless they subscribed at the meeting. No section book will be published unless there are at least fifty subscribers for the volume.

CORRESPONDENCE.

STAFF CORRESPONDENCE.

A Visit to Yellowstone National Park.

After the sessions of the ASSOCIATION had adjourned *sine die* and the San Francisco meeting had passed into history, some of the members took their way southward as far as Los Angeles and Coronado Beach, or visited the famous Hotel Del Monte at Monterey, and admired its magnificent park and gardens. Some climbed Mt. Hamilton to see the famous Lick Observatory, and returning, drove out to inspect the great Leland Stanford University at Palo Alto and the stock farm in the vicinity, where the equine aristocracy reside. Others turned northward to Portland and Tacoma, to explore the Sound regions, the scenes of the recent floods, and from thence went to Alaska, or turned their faces eastward in the direction of the Yellowstone National Park, which they ultimately reached after many vicissitudes that upset carefully laid plans and caused some vexatious delays. Our party took the Union Pacific direct to Ogden and Salt Lake City, where some of the local physicians distinguished themselves by their courtesy and hospitality to their guests. Many of the delegates and members on their way to the Park spent part of a day at Butte, Mont., where they were also warmly received and entertained by the physicians.

A brief account of a tour of the Park may prove interesting and not inappropriate, since the party of members of the AMERICAN MEDICAL ASSOCIATION who started for Mammoth Hot Springs on the morning of June 18 was the first this year to go over the Continental Divide to the Yellowstone Lake, and thus make the complete tour of the Park. This party consisted of C. A. Wheaton and A. Macdonald, of St. Paul; M. P. Van der Horck, of Minneapolis; Dwight W. Day, of Eau Claire, Wis.; O. Wellington Archibald, of Jamestown, N. D., and Frank Woodbury, of Philadelphia. Capt. George S. Anderson, U. S. A., in charge of the military post and Acting Superintendent of the Park, under authority of the Secretary of War, being acquainted with some of the party, kindly accepted a very pressing invitation to spend the week in going through the Park in their company. Capt. Anderson combines distinguished executive ability with great geniality and social qualities which make him a delightful companion, while his acute interest in everything pertaining to the Park, and his abundant information upon every subject which attracts the attention of visitors, constituted him a most desirable and important addition to the party.

All visitors enter the Park by way of Cinnabar, fifty-one miles distant from Livingston, which is on the main line of the Northern Pacific Railroad. Upon arrival of the delegates at Livingston, the railroad company very courteously made up a special train to convey them from Livingston to Cinnabar, where stages were in waiting to take them to the Mammoth Hot Springs, the first stop in the Park. In the vicinity of the hotel is the U. S. military post already incidentally referred to. The miniature hospital here is under the direct management of Capt. Chas. M. Gandy, M.D., who is an efficient officer as he is a refined and cultured gentleman. We were once more impressed with the

thought that the AMERICAN MEDICAL ASSOCIATION would be the gainer if all the medical officers in the United States service could become active members of our National medical association.

Near the Mammoth Hot Springs Hotel are the first evidences of geyser action in the form of springs of boiling water which deposit mineral salts, and here these deposits have in the course of ages formed immense terraces of travertine, which is almost pure calcium carbonate. In this formation various forms of algæ flourish which give color, and produce a pleasing variety of tints, to the formations known as the "Cleopatra Terrace," "Jupiter and Minerva Terraces," the "Orange Geyser" and the "Elephant." Starting from the hotel on the first day of the trip, the road passes the formation and enters Gardner Canon, through a defile called the Golden Gate. The road, which is an exceedingly good one, winds around the side of a mountain, having on one side the cascade of the river and on the other steep peaks extending upward to the region of perpetual snow. Evidences of volcanic action are numerous, but none is more striking than the cliffs of obsidian, or volcanic glass, which are passed a little beyond the canon. The scenery is very fine, the mountains being covered with trees up to the snow line; while here and there small lakes are seen, which resemble gems in their brightness of color, some being blue, others green or prismatic in their shades. The Twin Lakes, although lying side by side, are entirely different in their color, one being emerald, the other sapphire. Springs of cold water are frequently encountered, but rarely are any seen which so closely resemble the famous Apollinaris Spring as the one found near the obsidian cliffs, which furnishes a soda water of very pleasant taste, like that for which it has been named. At the Norris Geyser Basin a stop of an hour or more is made for lunch. Here there is a large mass of the formation already alluded to, in which there are frequent fissures which give vent to steam, or rivulets of hot water. In the sheltered places on the mountain side are patches of snow which furnish a marked contrast to the steaming plateau. This is noticed more particularly at the side of the road where the "Old Growler" geyser pours forth a constant volume of steam and hot water from the midst of a snow-bank.

Starting again after lunch, the party traversed the Gibbon Canon, where a fine view of the falls of the Gibbon River are obtained. A stop for the night was then made at Fountain Hotel, having travelled over forty miles the first day. Immediately in front of this hotel is the "Fountain Geyser" near which are the "Paint Pots," as they are called. The latter are small lakes of pigment of different colors, kept constantly in agitation by escaping bubbles of steam. The "Fountain" was the first real geyser we had seen. It spouts about every half hour, sending upward a large stream of water with vast clouds of steam, the exhibition lasting about five minutes. The hot water from the geysers is piped into the hotel for bathing purposes. As it is alkaline and somewhat sulphurous, it should have valuable medicinal effects; it certainly has a very pleasant action upon the skin. The second day was full of incident. After leaving the Lower Geyser Basin, Fire Hole River was soon reached. This is a large mountain stream stocked with rainbow and speckled trout, which we readily demonstrated by catching some two pounders of very gamey character. It is a strange sight, however, to observe streams of boiling water pouring over the bank, while a little beyond two geysers, the "Morning Glory" and "Riverside," at intervals threw large streams of boiling water out over the stream. Soon we came into a district surrounded by geysers, steaming and spouting like whales on every side, the place being not inappropriately termed "Hell's Half Acre," except as to area, which is nearer ten acres. This probably was not in the mind of the author who wrote on "Ten Acres Enough," or he might have altered his title and pronounced it more than enough. Here fifty-one miles from Mammoth Hot Springs is "Old Faithful" which plays every sixty-five minutes, sending a stream nearly 200 feet into the air lasting about ten minutes.

Among the noted geysers in this field are the "Giant," "Grotto," "Castle," "Saw Mill," "Oblong," "Artemisia," "Lion," "Lioness," and "Cub." This being enough for one day's stock of impressions, we turned back eleven miles to the Fountain Hotel for the night. The third morning we passed the geysers again, and leaving the Fire Hole River, which is the commencement of the Madison, one of the sources of the Missouri River, we crossed the Continental Divide and soon came to the Snake River which empties its waters finally into the Pacific Ocean. In crossing the Divide, which is over 9,000 feet elevation, we found considerable snow in the road, which in places was above the hubs of the wheels, so that on the 20th day of June we were stuck in the snow and were obliged to get out of the wagon and walk on the frozen surface. The views of Shoshone Lake and the mountains were very impressive, and reminded us of scenery in Norway, the firs and hemlocks, and Kepler's Cascade completing the picture. Several elks were seen, including a young calf at the side of the road, which our party got out to pet, while the anxious mother viewed the proceedings from the adjacent hillside, where she was half concealed by the brush. We reached the Thumb, nineteen miles from the Upper Basin, in time for lunch. Near this place are boiling springs in which a fish or an egg can be cooked in a few minutes. The Thumb is a bay in Lake Yellowstone which, in its southern portion, is extended or spread out in inlets resembling a human hand. The lake is a beautiful body of fresh water some thirty miles in length by ten to twelve in breadth, and is bordered by snow-capped mountains which remind one of the Swiss Alps. There is a steamboat plying on the lake, which has the distinction of being the only steamboat in the world at this altitude. On this boat we took passage to the northern end of the lake near its outlet into the Yellowstone River. We here found a good hotel, the Lake House, where we stopped for the third night of our tour through the Park.

The following day we started about 9 o'clock for the Grand Canon, passing the beautiful Hayden Valley, in which we saw some groups of deer, and we also passed the "Mud Geyser," which is a cavern, in the recesses of which black mud eternally bubbles and boils like a witch's caldron, presenting a most gruesome and uncanny appearance. In the afternoon, we took a light wagon and drove over to Inspiration Point and Lookout Point. The views of the Upper and Lower Falls are entrancing, the latter having a sheer descent of 360 feet, which is double the height of Niagara Falls, but the views of the Grand Canon of the Yellowstone from Inspiration Point are almost unearthly in their grandeur, to which no words of description can do justice. At the bottom of the canon, a thousand feet below, the river pursues its tortuous course, like a green ribbon, between precipices and peaks of varied hues, crimson, yellow, white, and other shades which combine to produce a weird unnatural effect. On a peak below us, there is an eagle's nest in which the young birds are plainly visible, quite unconscious of their apparently perilous position. In looking down the canon, the view is seen which Moran has represented upon canvas, but which defies the artist's brush or the pen of the ready writer, to reproduce or describe its sublimity and unconventionality if we may use this word with such application. Leaving the Grand Canon with regret, but much refreshed by a good night's rest, we took stage again for Mammoth Hot Springs, our starting point, where we arrived

on Friday evening, having stopped at Larry's, at the Lower Basin, for lunch. The following morning the party left the Park and returned to the every-day work-a-day world through the Paradise Valley of the Yellowstone as we had entered it a week before. In reviewing our recent impressions, it was thought proper to express in a formal manner, our opinion of the resources of the Park from a medical and hygienic standpoint, and the following was accordingly drawn up and signed by the physicians who had just had such unequalled opportunities of inspecting the locality under the direction of its presiding genius and genial Superintendent, Captain Anderson.

The testimonial read as follows:

"Mammoth Hot Springs, June 26, 1894.

The Yellowstone National Park, having an average elevation of about 8000 feet, an inland mountain climate, mineral springs of special value for medicinal purposes, and pure air ozonized by innumerable coniferous trees,—impresses us as being preëminently suited to be the site of a great sanitarium. Its mineral waters, which are of varied chemical composition, are in no way inferior to those of the celebrated European baths and springs, and we believe that they should be utilized, by the medical profession of the country especially, in the treatment of diseases for which such waters are commonly employed."

LETTER FROM EUROPE.

No. II.

Prag, Bohemia, June 2, 1894.

To the Editor:—In all German schools of medicine, pathology is given a most prominent place. In accordance with this idea, the medical faculty of the Prag University obliges the student to give much attention to this subject and has a separate building for pathologic anatomy. This building is large, modern, well constructed, and admirably adapted to the work. The Professor, his three assistants, the demonstrators, have each separate rooms where they may work undisturbed. There is also a well equipped bacteriologic laboratory in connection with this department, entirely distinct from the one of the Institute of Hygiene, which is in another part of the city, and presided over by Hueppe. The room for microscopy where class instruction in pathologic histology is given is large, well lighted and well fitted for such work. Tables, chests, shelves, etc., are set apart in this room and in side rooms, for special workers in pathology. The autopsy room is so arranged that three autopsies can be made at the same time.

The museum of pathologic anatomy, containing about five thousand specimens, is a model of its kind. There is not a single specimen that can not be immediately used for demonstration. No dust has to be removed or change of alcohol made before it is brought to the class, for under the watchful eye of Prof. Chiari, the preparations are kept always ready for presentation. Scarcely a gross pathologic change can be mentioned that has not its representation here; and Prof. Chiari can step to the museum and aided by his wonderful memory, almost immediately lay his hand on the very specimen he desires to use to illustrate his point. New preparations are being constantly added. I was not aware until I came here of the extreme value, as an adjunct in teaching, of a well stocked, and well kept, museum. Too many of our museums, I fear, are mere unsystematic collections of pathologic curiosities and monstrosities, gazed at through the glass doors with half understanding eyes by a few students, or displayed to the curious visitor as one of the great possessions of the college, a treasure no well regulated medical institution should be without.

I may say here, while speaking of museums, that through the kindness of Prof. Rabl, I was enabled the other day to see the museum of anatomy in the Anatomical Institute. Here, too, is a collection well utilized. At the time of my visit, at least twenty specimens were absent from their places on the shelves, as they were to be used the following hour to illustrate a lecture on the anatomy of the nervous system. And I noticed another excellent feature of the Anatomical Institute, viz., a study room for students where were skeletons, loose bones, charts, etc., to aid in the study of anatomy, and all freely accessible to the student. The advantage of studying anatomy with the bone directly before one or in one's hand is self-evident. I was interested in a preparation of the vascular system made by the celebrated Hyrtl in 1848, when he was the anatomist at Prag.

To return to the Pathological Institute. Every morning between 8 and 11 the autopsies are made by the Professor or his assistants. On an average about five or six autopsies a day can be seen. A week ago I saw nine in one day and on another day ten. At 11 o'clock all the specimens are reviewed by the Professor, who corrects errors in diagnosis, investigates further when necessary, criticises the work of his assistants, discusses the cases, etc. I find this one of the most enjoyable hours of the day. At 12 is the didactic lecture on pathologic anatomy. At 1 o'clock the specimens from the autopsies are demonstrated to the students, who, after the demonstration, can examine and handle the specimens as freely as they wish. Whenever a patient who has been before the clinic dies, a "clinical section" is made by Prof. Chiari himself, unless there are two or three to be performed at the same time, when assistants aid the Professor. A "clinical autopsy" is witnessed by the clinical professor and his class. To see a patient in clinic, listen to the clinical exposition of the case, have the opportunity of examining the patient in the ward, and then to witness the autopsy, is certainly the ideal method of studying medicine.

All specimens from surgic, gynecologic and obstetric clinics come to this Institute for pathologic diagnosis. Every day specimens of the most various descriptions—tumors, tubercular joints, gangrenous limbs, extrauterine pregnancies, extirpated glands, ovarian cysts, prematurely born fetuses, etc., are brought to Prof. Chiari for his diagnosis. A brief clinical history always accompanies the specimen. When the diagnosis has been made, and this necessarily often involves microscopic examination of the specimen, a card is made out and returned to the clinical professor with the pathologic diagnosis. It is, perhaps, needless to add that bacteriology as one of the important aids to diagnosis is freely made use of in the autopsy work and wherever necessary in the histologic examination of specimens from clinics. No post-mortem diagnosis leaves the Institute that has not been passed upon by Prof. Chiari.

It is somewhat comforting to find that we in America, are not the only ones who sometimes err in matters of diagnosis. I have seen here the best of the teachers make mistakes. Perhaps the most instructive feature of it all is to see the interest the diagnostician takes in the autopsy, and his eagerness and readiness to profit by his errors. The European teachers certainly have a great advantage in having their mistakes corrected by autopsy. The lesson of a mistake of this kind *corrected*, is of more value than the most accurate diagnosis. It was very amusing a few weeks ago, to see the expression on the face of a surgeon who witnessed the autopsy on the woman from whom, the day before he had removed the uterus with an enormous myoma, the patient dying, as the autopsy showed, from thrombosis of the pulmonary artery. During the operation he had separated the tumor from the under surface of the liver, to which it had become adherent, ligating several large vessels. The autopsy showed that what had been regarded as the liver was a large lobe or nodule of the tumor, entirely free from the liver and other organs, and showing plainly where its

connection with the main tumor mass had been severed by the surgeon. When this mass was slipped under the liver its edge just projecting, felt very much like that of the liver, even having a little indentation corresponding to the notch for the gall-bladder, so that one could clearly see how a mistake of this kind could be made. The surgeon's look of amusement, incredulity and chagrin as the revelation was made was worth remembering.

Other errors I have seen in all departments. In but a few instances could the error be regarded as one due to carelessness. Usually the error has been one of judgment. I mean that the utmost care is usually taken in examination of cases, more care than is usually seen in our hospitals. Too little importance is, at times, as it seems to me, attached to the anamnesis. And there is a tendency with some also, to be drawn away from some cardinal, vital symptom, by the findings of some of the newer methods of diagnosis whose value may not be, as yet, fully established or is, in part, theoretical, *e. g.*, some of the urinary or blood findings, or examination of the stomach contents.

Of the personal characteristics of the various teachers, here is not the place to speak; nor is it in good taste to institute comparisons. Yet I can not forbear to speak in the highest terms of Prof. Chiari, both as a teacher and a scientific man. His lectures and demonstrations are clear, terse, always up with the times. He knows as well what not to tell students as what to tell. He always creates the impression of having an immense reserve fund of knowledge, as telling you what was best for you to know and not all he knows. He works rapidly and accurately, and his post-mortem macroscopic diagnoses rarely have to be corrected by the microscopic or bacteriologic examinations. He is a strict disciplinarian, demanding of all who work under him quick obedience and the same fidelity and thoroughness that he exemplifies in his own daily work. He is personally watchful over all the details of the work in the Institute and is, as he himself says, very particular and pedantic. He is impartial in his praise or censure of all work done, according as it deserves the one or the other criticism. One who desires to do special work in pathology would find him a careful, inspiring and faithful guide. Were it permissible in a letter of this kind to say more concerning his personal characteristics, I should gladly pay tribute to the many charming and manly qualities of Prof. Chiari.

I can not forbear adding, as a sort of postscript to this letter, a description or rather a mere enumeration of the interesting post-mortem cases seen in the Pathological Institute this morning, June 4:

1, Tuberculosis of the lungs; secondary basilar meningitis in a child 9 years old; 2, broncho-pneumonia in a child; 3, carcinoma of the liver, probably primary in the liver; icterus gravis; 4, primary carcinoma of the common bile-duct; icterus gravis, etc.; 5, splenic-myelogenic leukemia with intercurrent erysipelas as the immediate cause of death; 6, congenital syphilis in a child with characteristic, well marked changes in heart, lungs, liver, spleen; osteochondritis in all the bones examined—femur both ends, tibia, humerus, ribs. Fracture of femur from version during parturition. Child dead ten minutes post-partum; 7, infiltrating carcinoma of the stomach with clinical history showing difficulty of diagnosis in so many of these cases, though it had been made correctly (Pribram) in this instance; 8, old appendicitis, suppurative phlebitis, pus still visible in vessels leading from appendix to mesentery, embolic abscesses of liver, pyemia, with retro-pharyngeal and double middle ear abscesses; 9, syringomelia; clinical course somewhat resembling tabes dorsalis; death due to typhoid fever developed during stay in hospital; 10, old echinococcus cyst of brain, right occipital lobe and encroaching, by pressure, on posterior horn of lateral ventricle. The cyst, the size of a walnut, was surrounded by cicatricial tissue and a capsule so hard from calcification as to require the bone shears to cut it. Echinococcus hooklets found in the softened mass in the interior. History showed patient healthy up to 15, then epileptic attacks frequently recurring; no focal symptoms; gradually developing paranoia, death at 22 during an epileptic attack. Chiari's theory that at the time of the first attack, seven years before, the infection with the echinococcus occurred, certainly seems rational.

I felt as I witnessed the autopsies and saw these specimens, listened to the epitomized clinical histories and the clear and concise demonstrations of Prof. Chiarl, that I had food for reflection and study for a week.

Very truly yours, JAMES B. HERRICK.

Woman's Hospital and Foundlings' Home.

DETROIT, June 22, 1894.

To the Editor:—Dr. Longyear, President of the medical staff of the Woman's Hospital and Foundlings' Home, has requested me to ask you to notice in your journal the following resolution, which was adopted at a recent meeting of the Trustees of that Hospital:

WHEREAS, The arrangement, providing that nurses from the Correspondence School of Health and Hygiene be allowed to practice in the Woman's Hospital and Foundlings' Home, was made without due consideration; therefore

Resolved, That such arrangement be, and is hereby discontinued from this date, and that a resolution to the effect that no relation whatever exist between the said Correspondence School of Health and Hygiene and the Woman's Hospital and Foundlings' Home be published in medical journals already specified. MRS. KATHARINE V. H. WELLS,
Recording Secretary.

MUNICIPAL HALL, PITTSBURG, PA., June 14, 1894.

To the Editor:—Please insert the following in your journal:

To the Members of the Medical Board holding examinations in Pittsburg:—We, a committee representing the candidates from the various colleges, by joint resolution hereby tender for ourselves and colleagues our sincere thanks for the courteous reception extended and the fair treatment shown to us.

Resolved, further, that this resolution be spread in the medical journals of the various States.

Represented:—Drs. A. D. Davidow, Chairman, College of Physicians and Surgeons, Chicago; A. C. Davis, Secretary West Pennsylvania Medical College, Pittsburg, Pa.; W. F. Bayley, University of Tennessee Medical College; W. A. Clementson, Jefferson Medical College, Philadelphia, Pa.; R. B. Cunningham, Louisville Medical College, Kentucky; D. Molyneaux, Royal College of Surgeons, Dublin, Ireland; J. C. Walker, University Medical College, New York; W. J. Cooper, College of Physicians and Surgeons, Baltimore, Md.; Clemens R. Jones, Columbus Medical College, Ohio; John W. Kiger, Medical College of Ohio; Mary E. Chrystie, Woman's Medical College of Pennsylvania; McCurdy Bricker, Medical College of Indiana.

SOCIETY NEWS.

New Hampshire State Medical Society.—The annual meeting of the New Hampshire State Medical Society was held at Concord, June 18 and 19, 1894. The last day's proceedings were as follows:

Officers elected—President, Dr. David P. Goodhue, of Springfield; Vice-President, Dr. E. F. McQuesten, Nashua; Treasurer, Dr. H. M. Felt, Hillsboro Bridge; Secretary, Dr.

G. P. Conn, Concord; Executive committee, Drs. Charles R. Walker, Concord; Geo. D. Towne, Manchester; F. A. Stillings, Concord; W. T. Smith, Hanover; Dr. F. E. Kittredge, Nashua. Trustee for three years, Dr. Levi G. Hill, Dover; Anniversary chairman, Dr. Robert Burns, of Plymouth.

Delegates to Dartmouth Medical College: Drs. A. Noel Smith, Dover; Ira H. Adams, Derry Depot.

Committee of Arrangements: Drs. F. A. Stillings, D. Edward Sullivan, Arthur K. Day, Chas. W. Lovejoy, N. W. McMurphy, Concord.

Board of Censors: Drs. D. S. Adams, G. D. Towne, Manchester; Thomas Hiland, Concord; John W. Parsons, Portsmouth; C. B. Hammond, Nashua; C. B. Drake, West Lebanon; Leonard Jarvis, Claremont; J. C. Eastman, Hampstead; I. J. Prouty, Keene; M. E. Lathrop, Dover.

Council: A. G. Straw, D. G. Adams, Manchester; W. K. Wadleigh, Hopkinton; D. Edward Sullivan, Concord; H. A. Weymouth, Andover; E. L. Carr, Pittsfield; G. D. Frost, Hanover; S. N. Welch, Sutton; J. W. Staples, Franklin Falls; G. S. Gove, Whitefield; G. H. Saltmarsh, Lakeport; Edward French, Concord; J. F. Robinson, Manchester; J. W. Parsons, Portsmouth; S. M. Dinsmore, Keene; T. B. Sanborn, Newport; D. L. Slater, Rochester; H. M. Felt, Hillsboro' Bridge; C. B. Hammond, Nashua; C. A. Fairbanks, Dover.

Delegates to the State Societies: Maine, E. E. Graves, J. W. McGregor; Vermont, Edward Abbott, H. K. Falkner; Massachusetts, G. M. Kimball, H. T. Boutwell; Rhode Island, D. L. Stokes, F. W. Spaulding; Connecticut, A. W. Shea, W. R. Garland.

Committee on Publications: Drs. G. P. Conn, H. M. Felt.

Orators: Drs. G. D. Frost, Hanover; S. N. Welch, Sutton. Substitutes, J. W. Staples, Franklin Falls; G. S. Gove, Whitefield.

Papers: Drs. Edward French, Concord; W. K. Wadleigh, Hopkinton; H. A. Weymouth, Andover; G. H. Saltmarsh, Lakeport; S. W. Roberts.

Report on Surgery: J. F. Robinson, Manchester.

Necrologist: John J. Berry, Portsmouth.

On account of the illness of President Carbee, the annual address was omitted and the time was occupied by Dr. G. P. Conn, of this city, with an interesting paper on "Sanitation in Mexico."

The anniversary dinner was served in the private dining room at the Eagle Hotel at 1 o'clock.

Dr. Ira A. Prouty, of Keene, anniversary chairman, presided, and after grace had been said by Rev. F. D. Ayer D. D., the following hour was spent in discussing the various items on the menu card, which constituted one of Landlord Pelren's famous spreads.

At the conclusion there were interesting post-prandial exercises, the sentiments and responses being:

"The New Hampshire Medical Society," President Goodhue, Springfield.

"The State of New Hampshire," Governor John B. Smith.

"Methods of Medical Instruction," Prof. Quackenbos, New York City.

"Our Lady Members," Dr. Ella Blaylock, Nashua.

"Our Brethren across the Connecticut," Dr. Hill, Bellows Falls, Vt.

"The Druggist, the Physician's Helpmeet," Dr. S. M. Dinsmore, Keene.

This concluded the exercises of the meeting which has been one of the most successful in the history of the Society.

The next meeting will be held May 30, 31, 1895.

Ontario Medical Association.—At the annual meeting of the Ontario Medical Association held in Toronto, Ont., the contract system of lodge doctoring was discussed. The special committee appointed for the purpose of considering the question reported that the Association consider all such lodge contract work unprofessional, and recommended that the medical council declare the practice as unprofessional under the statute.

This was put in form of motion and carried. The following officers were elected for the ensuing year:

President, Dr. Bruce Smith, Seaforth; First Vice-President, Dr. A. A. Macdonald, Toronto; Second Vice-President, Dr. Welford, Woodstock; Third Vice-President, Dr. Saunders, Kingston; Fourth Vice-President, Dr. Forrest, Mount Albert; General Secretary, Dr. J. N. E. Brown, Toronto; Assistant Secretary, Dr. Charles Temple, Toronto; Treasurer, Dr. J. H. Burns, Toronto. The following committees were appointed with the chairmen named: Committee on Credentials, Dr. A. J. Johnson, Toronto; Public Health, Dr. H. J. Hamilton, Woodhill; Legislation, Dr. William Britton, Toronto; Publication, Dr. Charles Sheard, Toronto; By-Laws, Dr. G. Hadge, London; Ethics, Dr. J. W. Williams, Ingersoll; Advisory, Dr. J. D. McDonald, Toronto. It was decided to hold the next annual meeting in Toronto.

BOOK NOTICES.

An Illustrated Dictionary of Medicine, Biology and Allied Sciences, including the Pronunciation, Accentuation, Derivation and Definition of the terms used in Medicine, Anatomy, Surgery, Obstetrics, etc. And the various Sciences closely related to Medicine, Bacteriology, Parasitology, Microscopy, Botany, Zoölogy, Dentistry, Pharmacy, etc. By George M. Gould, A.M., M.D. Based upon recent scientific literature. 1894. Pp. 1,633, half morocco. Philadelphia: P. Blakiston, Son & Co. Chicago: The W. T. Keener Co.

No period in the history of American medicine has been more prolific in the production of dictionaries than the present. The oldest work, that of Dunglison, has been supplemented by Thomas, Foster, Gould, Billings and Duane, and all have their good points. The dictionary of Dr. Foster, however, covers the medical terms used in the Latin, English, French and German languages, and is therefore of a different class from the others. The Century and the later editions of Worcester and Webster have given much more than the usual space to medical words.

The net result is, that the American physician of to-day is incomparably better equipped for the pursuit of medical literature than his predecessors. In the volume under consideration, the author has, so far as practicable, adhered to the reformed spelling. The author says: "I have usually recommended that in medicine the diphthongs æ and œ be supplanted by e; such usage is already well established as regards many words, and the suggestion is in strict harmony with etymology and the spirit of the language. . . . In the spelling of certain chemic words, the advice of the American Association for the Advancement of Science has, as a rule, been followed, and seems to be in the line of cautious and wise progress. The unanimous acceptance and practice of all these recommendations by the American Medical Editors' Association constitute a gratifying proof of progressiveness and freedom from irrational prejudice." The advanced and sensible views of the author in regard to spelling do not, however, seem to have influenced him in the pronunciation, and it is with regret that we observe his adhesion to the English pronunciation of medical terms of Greek and Latin derivation. It would be admissible if Latin were so pronounced the world over, but when the English speaking race are themselves divided, and all the remainder of the world essentially agree in pronunciation it seems a pity to maintain a factional and provincial position. The same British bull-headedness that insists upon calling Firenzi, "Florence," Napoli, "Naples," and Livorni, "Leghorn," persists in mangling the sonorous Tuscan sounds by a British accent that is as unnecessary from a scientific point of view as it is unintelligible to all our Continental brethren. From other standpoints the work is to be commended.

Transactions of the Indiana State Medical Society.—Forty-fourth Annual Session, held in Indianapolis, May 11 and 12, 1893. Pp. 378. Cloth.

One of the most interesting papers in this volume is that of Dr. Wishard, of Indianapolis, on the medical men and medical practice in the early days of Indianapolis. The days of the pioneer have passed in nearly every portion of our now great Republic. The railway, the telegraph, the daily newspaper and the medical journal now go everywhere, and local tradition in most cases is all there is left to

inform us of the mode of life of our predecessors, the difficulties under which they labored, and the professional triumphs they met with, then unheralded by the medical press. It is, therefore, not only a pleasant task, but our medical societies should insist upon it as a patriotic duty, that the work of the medical pioneers should be rescued from the unmerited obscurity into which they have fallen. This thought seems to have animated many of our medical societies by the number of historical papers now appearing in the annual volumes of transactions. Many an operation, such as that recorded of Dr. J. L. Richmond, at Newtown, Ind., who in 1824 successfully performed the Cæsarean section by the light of a tallow candle, would be permanently lost to the world but for the work of the medical historian.

Among the other papers in the volume are many of scientific value and more than passing interest.

A list of members and a list of all papers presented to the Society from its date of organization to 1893 are included.

A Manual of Instruction in the Principles of Prompt Aid to the Injured, including a chapter on Hygiene and the Drill Regulations for the Hospital Corps, U. S. A. Designed for Military and Civil use by ALVAH H. DOTY, M.D. New York: D. Appleton & Co. 1894. Chicago: A. C. McClurg & Co. Price, $1.50.

This little book is an excellent one, but has no particular *raison d' etre*, in view of the many excellent manuals already in existence on the same subject. There is nothing new or original in it, so far as we can judge. The illustrations are well executed and the typography all that could be desired

The Care and Feeding of Children; A Catechism for the use of Mothers and Children's Nurses. By L. EMMETT HOLT, M.D. Pp. 66. Cloth. New York: D. Appleton & Co. Chicago: A. C. McClurg & Co.

The method of questions and answers for inculcating various kinds of useful knowledge is one of the most practical and useful. This sanitary catechism should be read by every one having the care of infants or young children.

The Nurse's Dictionary of Medical Terms and Nursing Treatment.—Compiled for the use of nurses. By HONNOR MORTEN. Pp. 139. 32 mo. Cloth. Philadelphia: W. B. Saunders. London: The Scientific Press. 1894.

This is a handy little dictionary of the medical terms likely to be met with, or words that should be understood by nurses. It seems to be a selection from some of the larger dictionaries of the class of medical terms sought to be winnowed for the nurse's benefit. It is true that no learning may come amiss, but there are many words in the book that seem to have no special adaptation to the nurse's needs, especially as it is stated in the preface that "nurses are warned that this volume is merely meant to be used at the bedside as a temporary reference book until there is time to look up fuller works on the different subjects."

Transactions of the Fifteenth Annual Meeting of the American Laryngological Association, held at New York city, May 22, 23 and 24, 1893. Cloth. Pp. 165. New York: D. Appleton & Co. 1894.

This volume contains papers by Drs. Peyre Porcher, Delavan, Casselberry, Lincoln, Lefferts, Mulhall, Johnston, Farlow, Wright, Roe, Rice, Blois, Wagner, J. Solis-Cohen, Allen, Major, Bryan, Simpson and Robinson. All of which were published in the medical journals of that year. This volume also contains a well-written obituary notice of the late Franklin H. Hooper, M.D.

Saunders' Question Compends, No. 14.—Part I. Essentials of Refraction and the Diseases of the Eye. By EDWARD JACKSON, A.M., M.D. Part II. Essentials of Diseases of the Nose and Throat. By E. B. GLEASON, S.B., M.D. Second edition, revised, illustrated. Crown 8vo. Cloth. 1894. Philadelphia: W. B. Saunders.

However one may cavil at the whole brood of quiz compends, when they take the form of a catechism, there can be no real objection provided that the student is clearly informed that only the outlines of the subject are given. The book before us has passed to its second edition, and will doubtless reach many more. It is an excellent instruction book on the topics named in the title.

PUBLIC HEALTH.

Congress of Hygiene.—A committee of which Sir Douglas Galton is chairman, has been formed to further the interests of Great Britain at the Eighth International Congress of Hygiene and Demography which will be held at Buda-Pesth, September 1–8, prox.

Saving of School-Life.—In his last annual report Dr. U. O. B. Wingate, Commissioner of Health of the city of Milwaukee, shows a decrease from 509 deaths in 1892 to 378 deaths in 1893, among children of the school ages—5 to 20 years. On the basis of population this shows a reduction of from 2.07 per one thousand of the population at all ages in the former year to 1.45 per thousand in 1893. In the absence of any other apparent reason the Commissioner says: "It is possible that the work done in overhauling the school buildings and putting them in better sanitary condition is bearing good fruit."

The Plague.—Later advices from Hong Kong are less sensational and more reassuring, although the gravity of the situation is fully recognized. The early mortality figures seem to have been grossly exaggerated, the total number of deaths in Hong Kong to the 16th inst. being now reported at 1,708, with an average of 70 to 80 daily at that date. The fatality of the earlier cases, however, seems to have been quite as great as stated in the JOURNAL of the 23d. Europe, and especially Great Britain through her intimate commercial relations with the infected region, are more directly concerned in the outbreak than is this country. Hong Kong is the distributing center for all China and, as was pointed out by the *British Medical Journal*, if it is true as stated, that 100,000 Chinamen have fled from that city, many of them presumably plague-smitten, and are let loose in Canton and all over the Kwantung and Fokien provinces, this would portend an irremediable spread of the pest, threatening all commercial intercourse with Chinese ports.

Cholera in Europe.—Except in Russia, Asiatic cholera is attracting little attention, and even in that country it has disappeared from all but two of the eleven provinces or governments which have been infected since the beginning of the year. All the Portuguese ports, including Lisbon, are officially pronounced to be healthy and the country is free from any suspicion of cholera. There appears to be some ground for concern in Brittany, but the disease has disappeared from Finisterre and it is denied that France is threatened. The outbreak in Upper Silesia, near the Austrian and Russian frontiers, has been officially investigated and found to have been caused by a female tramp from Russian Poland. Cholera bacilli having been found in the waters of the Vistula near Dantzic the river has been forbidden as a source of supply. The promptitude of enforcement and the efficiency of the measures relied upon for the prevention and suppression of the disease are shown in these and similar investigations and actions, and warrant the anticipation that Europe will escape any serious infliction this year.

Is Syphilis Diminishing?—Dr. J. H. Musser, of Philadelphia, believes that syphilis is diminishing in prevalence and is of a milder type than that of twenty years ago. He defended this thesis in a paper presented to the Association of Amer-

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